JUL 23 2018

LETTER OF TRANSMITTAL

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

TO:	Office of Environmental Quality Control 235 So. Beretania Street, Suite 702 Honolulu, HI 96813		
ATTENTION:			
DATE:	June 29, 2018	LOCATION:	
PROJECT:	Pūpūkea Rural Community Commercial Center	PROJECT NO:	
SUBJECT:	Submittal of Final Environmental Impact Statement for publication in The Environmental Notice (anticipated July 23, 2018)	NO. OF PAGES:	
EMAIL/FAX:			
WE ARE SENDING:	☒ ATTACHED ☐ UNDER SEPARATE		
THE FOLLOWING ITEMS:	☐ ORIGINAL ☐ COPY ☐ E-MAIL ☐ FAX ☐ PRINTS ☐ SHOP DWGS ☐ SPECIFICATIONS ☐ CHANGE ORDERS ☐ LETTER ☐ DOCUMENT ☐ FILES ☐ OTHER		
TRANSMITTED AS CHECKED:	☒ FOR APPROVAL ☒ FOR YOUR USE ☐ AS REQUESTED ☐ FOR REVIEW AND COMMENT		

FILE COPY

RECEIVED '18 JUN 29 A8:01 OFC. OF ENVIRONMENTAL QUALITY CONTROL

COPIES	DATE	NO.	DESCRIPTION
1	July 2018		Publication Form: Non-Chapter 343 Document (Chapter 25 ROH) printed hard copy
1	July 2018		Compact Disc containing Publication Form in Word format
1 set	July 2018		Pūpūkea Rural Community Commercial Center Final Environmental Impact Statement (Volumes 1 and 2 printed bound copies)
3	July 2018		Compact Discs containing pdf format: Pūpūkea Rural Community Commercial Center Final Environmental Impact Statement (Volumes 1 and 2)
1	July 2018		*CD containing three pdf files of written document & Word file of Publication form
1	June 29, 2019		Copy of Transmittal showing simultaneous submittal to Accepting Authority, Department of Planning and Permitting, pursuant to HAR §11-200-20

G70 is simultaneously submitting the Final EIS to DPP and OEQC, pursuant to HAR §11-200-20, for Acceptability Determination by DPP and for publication by OEQC in the July 23, 2018 edition of *The Environmental Notice*.

Please contact Barrie Morgan (441-4634) of G70 if additional information is needed.

cc: Department of Planning and Permitting

18-706

NON-CHAPTER 343 DOCUMENT
PUBLICATION FORM
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

Project Name: Pūpūkea Rural Community Commercial Center

Applicable Law: Chapter 25 ROH

Type of Document: Final Environmental Impact Statement

Island: O'ahu

District: Waialua

TMK: (1) 5-9-011:068, 069, 070, 016

Permits Required: Special Management Area Use Major Permit, Grading Permit, Building Permit

Applicant or Proposing Agency:
(Address, Contact Person, Telephone, E-mail)

Hanapohaku LLC, Andrew Yani
526 Ahina St., Honolulu, HI 96816

(808) 779-5733
hanapohakullc@gmail.com

Approving Agency or Accepting Authority: Department of Planning and Permitting
(Address, Contact Person, Telephone, E-mail)

650 South King Street, 7th Floor Honolulu, HI 96816
Ardis Shaw-Kim, 768-8021, ashaw@honolulu.gov

Consultant:
(Address, Contact Person, Telephone, E-mail)

G70, 111 South King Street, Suite 170, Honolulu, HI 96813
Jeff Overton AICP LEED AP

(808) 523-5866
pupukea@g70.design

Status: Final EIS

Project Summary:
(Summarize proposed action and purpose/need in less than 200 words in the space below):

Hanapohaku LLC is proposing to develop a rural community commercial center in Pupukea, Oahu to provide a mix of goods and services to residents and visitors of the community. The property is in the Special Management Area and this Final EIS has been prepared pursuant to Chapter 25-3.3, Revised Ordinances of Honolulu, related to procedural guidelines and assessment requirements. The Property is classified as Urban in the State Land Use Designation, is zoned B-1 Neighborhood Business District established by the City and County of Honolulu Zoning Maps, and is designated for a Rural Community Commercial Center in the North Shore Sustainable Communities Plan. The existing Foodland grocery store is included in the center. Three new buildings will be constructed, one to two stories in height, totaling approximately 30,000 square feet. The small-scale clustered buildings will be set back with a park-like green space, walkways, and bicycle paths fronting Kamehameha Highway. This gathering space can be utilized by mobile food trucks and pedestrian-friendly community gatherings and cultural events. Supporting infrastructure will include driveways, parking with solar panel canopies, drainage, water supply, and wastewater treatment facility.

PŪPŪKEA RURAL COMMUNITY COMMERCIAL CENTER

VOLUME I:

FINAL ~~DRAFT~~ ENVIRONMENTAL IMPACT STATEMENT

APPLICANT:

HANAPOHAKU

PREPARED BY:

G70

111 S. KING STREET, SUITE 170 ~~925 BETHEL STREET, 5TH FLOOR~~
HONOLULU, HI 96813

JULY 2018 ~~NOVEMBER 2017~~

PŪPŪKEA RURAL COMMUNITY COMMERCIAL CENTER

VOLUME I:

FINAL ~~DRAFT~~ ENVIRONMENTAL IMPACT STATEMENT

TMK (1) 5-9-011:068, 069, 070, 016
PŪPŪKEA, O'AHU, HAWAI'I

APPLICANT:

HANAPOHAKU

59-712 KAMEHAMEHA HIGHWAY
HALE'IWA, HAWAI'I 96712

PREPARED BY:

G70

111 S. KING STREET, SUITE 170 ~~925 BETHEL STREET, 5TH FLOOR~~
HONOLULU, HI 96813

APPROVING AGENCY:

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING AND PERMITTING

This environmental document is prepared pursuant to Revised Ordinances of Honolulu, Chapter 25, Special Management Area and consistent with Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health, Environmental Impact Statement Rules.

This Final ~~Draft~~ Environmental Impact Statement and all ancillary documents were prepared under my direction or supervision, and the information submitted, to the best of my knowledge, fully addresses document content requirements as set forth in Section 11-200-17 for the Hawai'i Administrative Rules.

Jeffrey H. Overton, AICP, LEED AP

JUNE 27, 2018
Date

JULY 2018 ~~NOVEMBER 2017~~

VOLUME I: CONTENTS

1.0 PROJECT SUMMARY 1-1

1.1 Project Information Summary 1-1

1.2 Introduction 1-9

1.3 Proposed Action 1-9

1.4 Significant Beneficial and Adverse Impacts and Proposed Mitigation Measures 1-10
1.4.1 Beneficial Impacts 1-10
1.4.2 Adverse Impacts 1-11
1.4.3 Proposed Mitigation Measures 1-12
1.4.4 Unresolved Issues 1-12

1.5 Summary of Compatibility with Land Use Policies and Plans 1-12

1.6 Alternatives Considered to the Proposed Action 1-12
1.6.1 No-Action Alternative 1-13
1.6.2 Commercial Village Alternative 1-13
1.6.~~2~~3 Commercial Shopping Center 1-14
1.6.~~3~~4 Alternative Development Timetable (Deferral) 1-14

1.7 Summary of Public Benefits 1-15

1.8 Listing of Required Government Permits and Approvals 1-15

2.0 PROJECT DESCRIPTION 2-1

2.1 History of Property 2-1

2.2 Existing Conditions 2-3

2.3 Purpose and Need for the Rural Center 2-4

2.4 Proposed Action 2-6
2.4.1 Infrastructure Components 2-14

2.5 Project Schedule and Costs 2-16

3.0 ENVIRONMENTAL SETTING, PROBABLE IMPACTS, AND RECOMMENDED MITIGATION 3-1

3.1 Climate and Rainfall 3-2
3.1.1 Existing Conditions 3-2
3.1.2 Probable Impacts and Mitigation Measures 3-2

3.2 Geology, Topography, and Soils 3-2
3.2.1 Existing Conditions 3-2
3.2.2 Probable Impacts and Mitigation Measures 3-3

3.3 Natural Hazards 3-5
3.3.1 Existing Conditions 3-5
3.3.2 Probable Impacts and Mitigation Measures 3-8

3.4 Terrestrial Flora and Fauna 3-8
3.4.1 Existing Conditions 3-8
3.4.2 Probable Impacts and Mitigation Measures 3-10

3.5 Groundwater 3-11
3.5.1 Existing Conditions 3-11
3.5.2 Probable Impacts and Mitigation Measures 3-14

3.6 Surface Water and Drainage 3-17
3.6.1 Existing Conditions 3-17
3.6.2 Probable Impacts and Mitigation Measures 3-18

3.7 Marine Environment 3-21
3.7.1 Existing Conditions 3-21
3.7.2 Probable Impacts and Mitigation Measures 3-25

3.8 Cultural Resources 3-26
3.8.1 Existing Conditions 3-26
3.8.2 Probable Impacts and Mitigation Measures 3-29

3.9 Archaeological and Historic Resources 3-29
3.9.1 Existing Conditions 3-29
3.9.2 Probable Impacts and Mitigation Measures 3-29

3.10 Land Use 3-30
3.10.1 Existing Conditions 3-30
3.10.2 Probable Impacts and Mitigation Measures 3-31

3.11 Demographic and Economic Conditions 3-31
3.11.1 Existing Conditions 3-31
3.11.2 Probable Impacts and Mitigation Measures 3-32

3.12 Public Services 3-33
3.12.1 Existing Conditions 3-33
3.12.2 Probable Impacts and Mitigation Measures 3-35

3.13 Traffic 3-35
3.13.1 Existing Conditions 3-35
3.13.2 Probable Impacts and Mitigation Measures 3-37

3.14 Air Quality 3-41
3.14.1 Existing Conditions 3-41
3.14.2 Probable Impacts and Mitigation Measures 3-41

3.15 Noise 3-42
3.15.1 Existing Conditions 3-42
3.15.2 Probable Impacts and Mitigation Measures 3-42

3.16 Infrastructure and Utilities 3-43
3.16.1 Existing Conditions 3-43
3.16.2 Probable Impacts and Mitigation Measures 3-45

3.17 Visual Environment 3-49
3.17.1 Existing Conditions 3-49
3.17.2 Probable Impacts and Mitigation Measures 3-54

3.18 Summary of Probable Impacts 3-55
3.18.1 Interrelationships and Cumulative Environmental Impacts 3-55
3.18.2 Potential Secondary Effects 3-57
3.18.3 Relationship Between Local Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity 3-58
3.18.4 Irreversible and Irretrievable Commitments of Resources 3-58
3.18.5 Adverse Environmental Effects that Cannot be Avoided 3-59

3.19 Unresolved Issues 3-59

4.0 RELATIONSHIP OF PROPOSED ACTION TO LAND USE PLANS, POLICIES AND CONTROLS FOR THE AFFECTED AREA 4-1

4.1 Federal Controls 4-2
4.1.1 Coastal Zone Management Act 4-2
4.1.2 Title III of the American Disabilities Act 4-2

4.2 State of Hawaiʻi Plans and Controls 4-3
4.2.1 Environmental Impact Statements, Hawaiʻi Revised Statutes Chapter 343 4-3
4.2.2 Land Use Commission, Hawaiʻi Revised Statutes Chapter 205 4-3
4.2.3 Hawaiʻi State Plan, Hawaiʻi Revised Statutes Chapter 226 4-4
4.2.4 Hawaiʻi 2050 Sustainability Plan 4-26
4.2.5 Hawaiʻi State Functional Plans 4-29
4.2.6 Coastal Zone Management, Hawaiʻi Revised Statutes Chapter 205A 4-29
4.2.7 Marine Life Conservation Districts – Pūpūkea (HAR Title 13 Chapter 34) 4-33
4.2.8 Electric Vehicle Parking and Charging 4-34
4.2.9 Complete Streets Policy 4-34
4.2.9 DLNR Makai Watch Program 4-34

4.3 City and County of Honolulu Plans, Policies and Controls 4-35
4.3.1 Chapter 25, Revised Ordinances of Honolulu 4-35
4.3.2 City and County of Honolulu General Plan 4-37
4.3.3 North Shore Sustainable Communities Plan 4-53
4.3.4 Coastal View Study 4-71

5.0 ALTERNATIVES 5-1

5.1 Project Objectives and Evaluation Criteria 5-1

5.2 Alternatives Considered and Dismissed from Further Study 5-2

5.3 No-Action Alternative 5-3

5.4 Commercial Village Alternative 5-7

5.4 Commercial Shopping Center Alternative 5-7

5.5 Alternative Development Timetable (Deferral) 5-9

5.6 Summary Comparison of Alternatives 5-10

6.0 AGENCIES AND PARTIES CONSULTED 6-1

7.0 REFERENCES AND PREPARERS OF THE EIS 7-1

7.1 References 7-1

7.2 Preparers of the EIS 7-3

LIST OF FIGURES

1-1 Project Location 1-3

1-2 Parcel Boundaries (Tax Map Key) 1-4

1-3 State Land Use District Designations 1-5

1-4 City and County of Honolulu North Shore Sustainable Communities Plan Land Use Map (*Revised graphic*) 1-6

1-5 City and County Zoning 1-7

1-6 Special Management Area 1-8

2-1 Photographs of the former Niimi General Store (ca. 1978) 2-2

2-2 North Shore Sustainable Communities Plan Rural Communities Center Policies 2-4

2-3 Conceptual Site Plan (*Revised graphic*) 2-7

2-4 Site ~~Plan~~ – Elevation View 2-11

2-5 Ground Level Perspective View at the Central Green (*Revised graphic*) 2-12

2-6 Site Plan – Featured Elements ~~Potential Food Truck Locations~~ 2-13

3-1 Soils Classification Map (U.S. Department of Agriculture Soil Conservation Service) 3-4

3-2 Flood and Tsunami Inundation Zones 3-7

3-3 Oʻahu Groundwater Hydrologic Units 3-12

3-4 On-Site Wastewater Disposal Systems in Pūpūkea and Sunset Beach Communities 3-15

3-5 Low Impact Development Features for Storm Water Control (*Revised graphic*) 3-20

3-6 Marine Water Quality Sampling Transects 3-22

3-7 Historical Moku and Ahupuaʻa Boundary Map 3-27

3-8 On- and Off-Site Multimodal Enhancements (*New graphic*) 3-39

3-9 Location of Existing IWS and Proposed Wastewater System (*New graphic*) 3-44

3-10~~8~~ View Study Photo Key 3-50

3-11~~9~~A-F Various Site Views ..... pp 3-51 to 3-53

LIST OF TABLES

1-1 Required Reviews and Permits 1-15

2-1 Development Program 2-9

3-1 Water Quality Results from Five Marine Transects as Sampled by MRCI in May 2017 3-24

3-2 North Shore Commuter Flow and Daytime Population 3-32

3-3 Existing Intersection Levels of Service 3-36

3-4 Near Term (2021) Baseline Intersection Levels of Service 3-40

3-5 Comparative Runoff Volumes for Pre- and Post-Development of the Three Hanapohaku Parcels for 24-Hour Storms of Varying Recurrence Intervals 3-48

4-1 Hawaiʻi State Plan, Hawaiʻi Revised Statutes, Chapter 226 4-4

4-2 Hawaiʻi 2050 Sustainability Plan (SB 2532 HD1, 2010 Legislative Session) 4-26

4-3 Coastal Zone Management Program HRS Section 205 A – Objectives and Policies 4-30

4-4 Special Management Area – Objectives and Policies – City and County of Honolulu 4-36

4-5 City & County of Honolulu General Plan – Objectives and Policies 4-38

4-6 North Shore Sustainable Communities Plan – Objective and Policies – City and County of Honolulu 4-53

5-1 Comparison of Alternatives by Project Objectives 5-11

5-2 Comparison of Alternatives by Evaluation Criteria 5-13

5-3 Comparison of Alternatives by Environmental Impact Category 5-15

6-1 Agencies and Parties Consulted 6-1

ABBREVIATIONS AND ACRONYMS

AA	Archaeological Assessment
ACS	American Community Survey
ADA	Americans with Disability Act
AWWA	American Water Works Association
BMPs	Best Management Practices
BWS	Honolulu Board of Water Supply
CAB	Department of Health, Clean Air Branch
cfs	Cubic Feet Per Second
CFU	Colony Forming Units
CIA	Cultural Impact Assessment
Chl *a*	Chlorophyll a
CNPCP	Coastal Nonpoint Pollution Control Program
CO	carbon monoxide
CUP	Conditional Use Permit
CWA	Clean Water Act
CWB	Department of Health, Clean Water Branch
CWRM	The Commission on Water Resource Management
CZARA	Coastal Zone Act Reauthorization Amendments
CZC	Comprehensive Zoning Code
CZM	Coastal Zone Management
CZMA	Coastal Zone Management Act
DBEDT	State Department of Business, Economic Development & Tourism
DFM	Department of Facility Maintenance
DOH	Hawaiʻi State Department of Health
DPP	City and County of Honolulu, Department of Planning and Permitting
EIS	Environmental Impact Statement
EJSCREEN	Environmental Justice Screening Tool
EMD	City and County of Honolulu Emergency Medical Dispatch
EMS	City and County of Honolulu Emergency Medical Services
EPA	U.S. Environmental Protection Agency
FAR	Floor Area Ratio
gpd	Gallons Per Day

gpm	Gallons Per Minute
HAR	Hawaiʻi Administrative Rules
HDOT	State of Hawaiʻi Department of Transportation
HEPA	Hawaiʻi's Environmental Protection Act
HPD	Honolulu Police Department
HRS	Hawaiʻi Revised Statutes
IBC	International Building Code
IWS	Individual Wastewater System
LCAs	Land Commission Awards
Leq(h)	Average Hourly Sound Level
LID	Low Impact Development
LOS	Level of Service
LUO	Land Use Ordinance
µM	Micromolar
MGD	Million Gallons Per Day
mL	Milliliters
MLCD	Marine Life Conservation District
mph	Miles Per Hour
MRCI	Marine Research Consultants, Inc.
NAAQS	National Ambient Air Quality Standards
NH_4^+	Ammonium Nitrogen
NO_3^-	Nitrate + Nitrite Nitrogen
NOAA	National Oceanic and Atmospheric Administration
NOX	nitrogen oxides
NPDES	National Pollutant Discharge Elimination System
NSSCP	North Shore Sustainable Communities Plan
O_3	ozone
OEQC	Office of Environmental Quality Control
OSDS	On-Site Disposal Systems
PER	Preliminary Engineering Report
PM2.5	particulate matter smaller than 2.5 microns
PM10	10 microns
PO_4^{-3}	Orthophosphate Phosphorus

ROH	Revised Ordinances of Honolulu
SAAQS	State Ambient Air Quality Standards
SCP	Sustainable Communities Plan
SDWB	Safe Drinking Water Branch
SF	Square Feet
SHPD	State Historic Preservation Division
Si	Silica
SMA	Special Management Area
SMP	Special Management Area Use Permit
SOX	sulfur oxides
STV	Statistical Threshold Value
SWPPP	Storm Water Pollution Protection Plan
TN	Total Nitrogen
TP	Total Phosphorus
TSS	Total Suspended Solids
UIC	Underground Injection Control
WkB	Waialua Silty Clay
WWB	Department of Health Wastewater Branch

VOLUME 2: TECHNICAL APPENDICES

A. Natural resources assessment for improvements proposed for the Pūpūkea Rural Community Commercial Center, Island of Oʻahu

Avian and Terrestrial Mammalian Surveys Conducted for the Pūpūkea Rural Community Commercial Center, Waialua District, Island of Oʻahu

B. Assessment of Potential Impacts on Water Resources of the Proposed Pupukea Rural Community Commercial Center

C. Assessment of Marine Water Chemistry and Community Structure in the Vicinity of the Proposed Pupukea Rural Community Commercial Center, North Shore, Oahu, Hawaii

D. Cultural Impact Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi

E. Archaeological Assessment

State Historical Preservation Division Acceptance of Archeological Assessment Report

Archaeological Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi

F. Transportation Impact Analysis Report

G. Noise Study for Proposed Pūpūkea Rural Community Commercial Center, Pūpūkea, Oahu

H. Preliminary Engineering Report

1.0

PROJECT SUMMARY

1.0 PROJECT SUMMARY

1.1 Project Information Summary 1-1
1.2 Introduction 1-9
1.3 Proposed Action 1-9
1.4 Significant Beneficial and Adverse Impacts and Proposed Mitigation Measures 1-10
1.5 Summary of Compatibility with Land Use Policies and Plans 1-13
1.6 Alternatives Considered to the Proposed Action 1-13
1.7 Summary of Public Benefits 1-14
1.8 Listing of Required Government Permits and Approvals 1-15

This section provides an overview of the contents and purpose of this Environmental Impact Statement (EIS) for the Pūpūkea Rural Community Commercial Center along with a description of the public consultation process. The project, its potential impacts, the proposed mitigation measures, as well as alternatives to the proposed project, are summarized in this overview.

1.1 PROJECT INFORMATION SUMMARY

Type of Document: Environmental Impact Statement

Project Name: Pūpūkea Rural Community Commercial Center

Landowner & Applicant:
TMK Nos. (1) 5-9-011:068, 069 & 070
Hanapohaku LLC
526 Ahina Street
Honolulu, HI 96816
Contact: Andrew Yani
Phone: (808) 779-5733

Landowner:
TMK No. (1) 5-9-011:016
The Sullivan Family Limited Partnership
Maurice and Joanna Sullivan Family Foundation
3536 Harding Avenue
Honolulu, HI 96816
Contact: Roger Wall
Phone: (808) 735-7258

This Final EIS shows substantive changes using highlight for additions and ~~strike through~~ for deletions. Non-substantive typographical and grammatical changes are not shown.

Accepting Authority:	City and County of Honolulu Department of Planning and Permitting 650 South King Street, 7th Floor Honolulu, Hawai'i, 96813 Contact: Land Use Permits Division Phone: (808) 768-8013
Planning/Environmental Consultant:	G70 ~~925 Bethel Street, 5th Floor~~ 111 S. King Street, Suite 170 Honolulu, Hawai'i 96813 Contact: Jeff Overton, AICP Phone: (808) 523-5866
Project Location	Pūpūkea, Hale'iwa, O'ahu, Hawai'i *(Figure 1-1)*
Tax Map Key:	(1) 5-9-011:068, 069, 070, 016 (*Figure 1-2*)
Land Area:	4.56 acres
State Land Use Designation:	Urban District (*Figure 1-3*)
City and County of Honolulu Land Use Plan:	North Shore Sustainable Communities Plan (*Figure 1-4*)
City and County of Honolulu Zoning:	B-1 Neighborhood Business (*Figure 1-5*)
Special Management Area (SMA):	Project site is located within the SMA (*Figure 1-6*)
SMA Approving Authority:	Honolulu City Council
Flood Management Zone:	Zone X – Outside of 0.2% Annual Chance Floodplain (*Figure 3-2*)

Figure 1-1 Project Location

Figure 1-2 Parcel Boundaries (Tax Map Key)

Figure 1-3 State Land Use District Designations

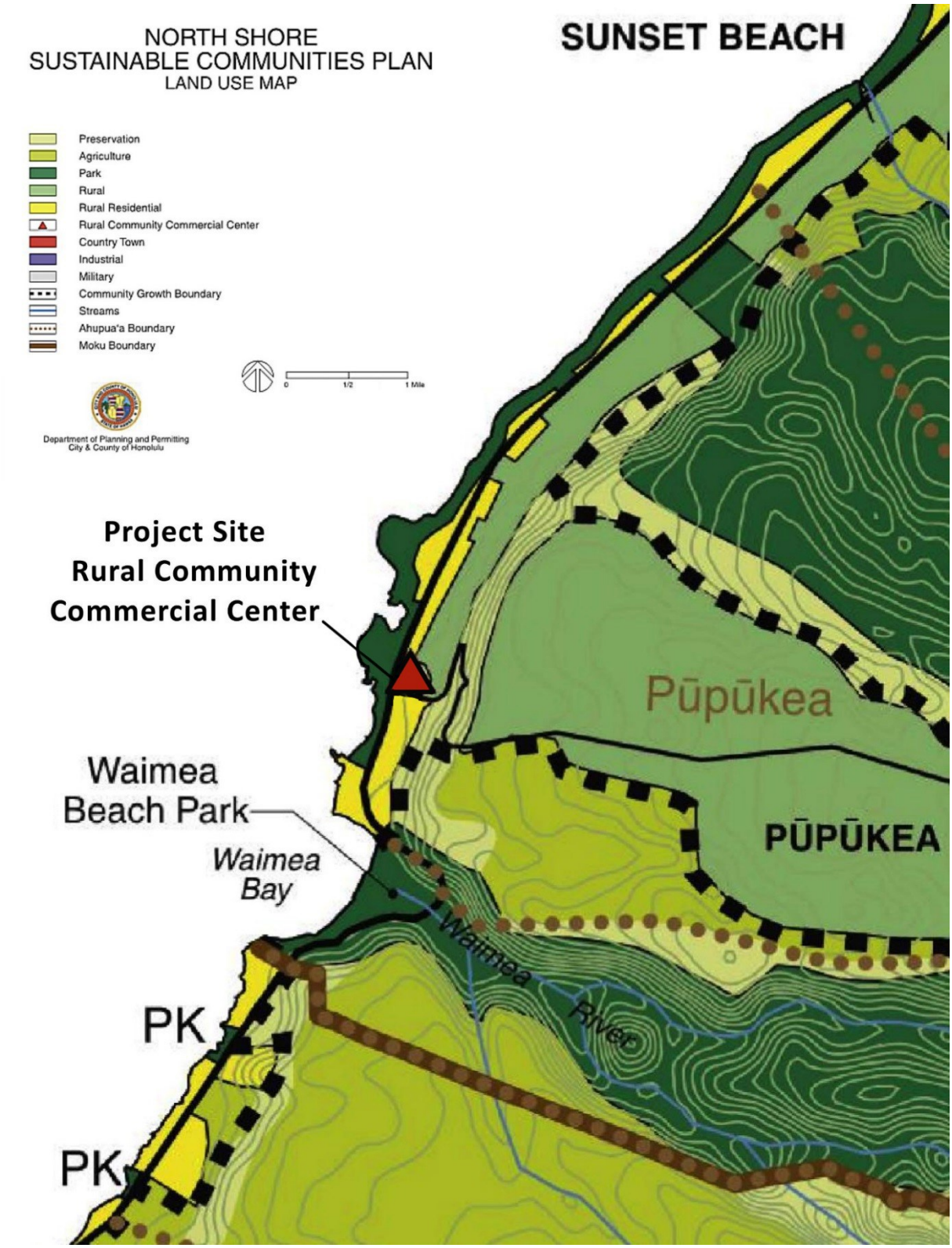


Figure 1-4 City and County of Honolulu, North Shore Sustainable Communities Plan Land Use Map *(Revised graphic)*

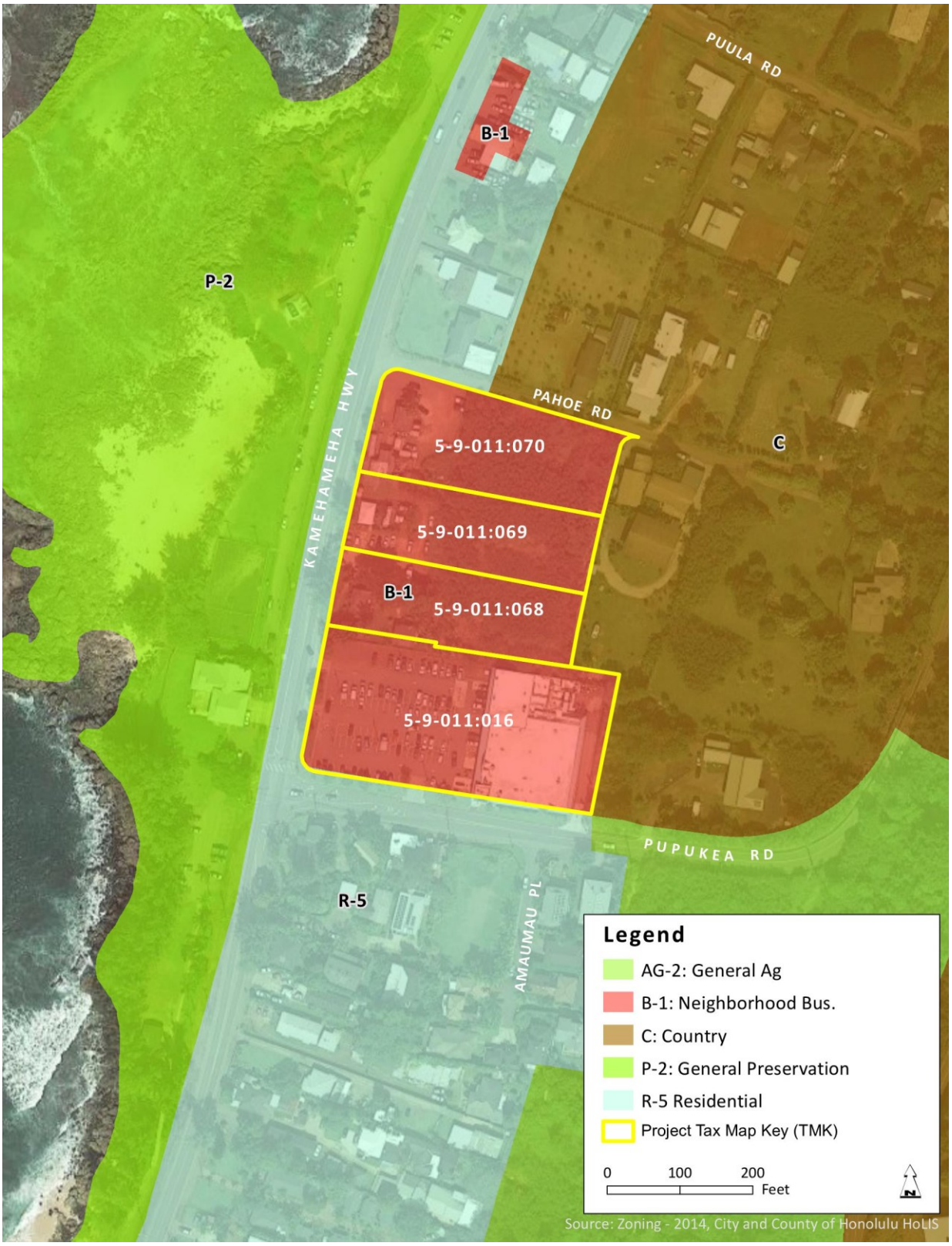


Figure 1-5 City and County Zoning

Figure 1-6 Special Management Area

1.2 INTRODUCTION

The subject project involves four parcels of real property on the North Shore of Oʻahu mauka of Pūpūkea Beach Park and Sharks Cove. Hanapohaku LLC is the owner in fee of three of the four adjoining parcels totaling 2.72 acres and located directly north of the Foodland grocery store on the corner of Kamehameha Highway and Pūpūkea Road. The fourth parcel covered by the project is the 1.84-acre parcel on which the Foodland grocery store is located (the "Foodland parcel"), which is owned by The Sullivan Family Limited Partnership and the Maurice and Joanna Sullivan Family Foundation (collectively the "Sullivan Entities"). The Foodland store was built in 1980, and is approximately 21,650 square feet in size. The property has been used for commercial purposes for more than a century.

The subject project contemplates only minimal alterations to the Foodland parcel – i.e., closure of the driveway from Kamehameha Highway in favor access through a common egress / ingress point on Kamehameha Highway for all four parcels, limited parking lot improvements, and related landscaping improvements. None of the Sullivan Entities or Foodland Super Market, Limited is involved in the subject project as it relates to the three Hanapohaku LLC parcels; and none of the Sullivan Entities or Foodland Super Market, Limited holds any interest in Hanapohaku LLC. Except as expressly otherwise stated, the "project" refers only to development of the three Hanapohaku LLC parcels.

Hanapohaku acquired its land in 2014 to retain local ownership of an important commercial property to provide goods and services to the Pūpūkea, Waimea, and Kawailoa communities, consistent with County and State long-range plans. The *North Shore Sustainable Communities Plan* (SCP) has designated the four parcels as the Rural Community Commercial Center for the region (*Figure 1-4*). The combined area of the Hanapohaku and Foodland parcels is 4.56 acres and is zoned B-1 Neighborhood Business District (*Figure 1-5*).

The parcels fall within the City and County of Honolulu's designated Special Management Area (SMA). Proposed development within the SMA requires a Special Management Area Use Permit, subject to an assessment by the agency in accordance with the procedural steps set forth in Hawaiʻi Revised Statutes as amended (HRS) Chapter 343 (Environmental Impact Statements). This document was prepared as required under Revised Ordinances of Honolulu Chapter 25 and in accordance with HRS Chapter 343 and the implementing Hawaiʻi Administrative Rules (HAR), Chapter 11-200 (Environmental Impact Statement Rules).

1.3 PROPOSED ACTION

The project will develop a Rural Community Commercial Center to expand the mix of goods and services available to residents of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors. The owners are committed to pursuing Hawaiʻi-based businesses as tenants of the center. This commitment underlies the owners' objectives to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community. The types of businesses and services may include urgent medical care services, credit union, professional services, surf shop and action sports, fitness studio, child care, health food market/deli, mobile food establishments and restaurant. Business and employment opportunities for area residents will provide additional jobs within the community and avoid long commutes to job centers in urban areas of Oʻahu.

The Foodland parcel is tied to the project through a 1996 development agreement that provides for cooperation between the owners of the four parcels to achieve mutual benefits of an integrated neighborhood shopping center. The Environmental Impact Statement (EIS) and SMA Use Permit processes evaluate the properties as a single project, though only minor improvements are anticipated on the Foodland parcel, such as a parking lot improvements and landscaping.

Building design will be consistent with the country character of the North Shore. One- to two-story buildings will be set back from the highway with parking sited behind to create an open, park-like space along Kamehameha Highway. The small-scale clustered buildings linked by meandering walkways and a central green landscaped area will provide a community gathering place for residents and visitors. Pathways will create pedestrian connectivity across the property from bike paths and bus stops along Kamehameha Highway to the Foodland grocery store, a frequent daily destination for area residents. Mobile food establishments can utilize the hardscaped area adjacent to the central green and provide a variety of culinary options. Vehicle access will be restricted from the hardscape during some periods to allow for pedestrian-friendly community gatherings and cultural events, such as art shows, farmers' markets, and music and dance performances.

Infrastructure to support the new facilities will include driveways, parking shaded by solar panel canopies, storm water runoff controls, water supply, and wastewater management. The planned floor area of the facilities will be approximately ~~27,000~~ 28,325 SF of leasable area (~~30,000~~ 34,500 SF gross floor area). The modest development plan utilizes approximately 25 percent of the floor area ratio (FAR) allowed for this property under the City Land Use Ordinance. With one- and two-story buildings, this toned-down land use approach reflects the sensitivity to scale and context as a Rural Community Commercial Center. The conceptual development plan creates a natural flow in an appropriately-scaled built environment, which maximizes open views, public space, and landscaping consistent with the rural nature of the broader community (*Figure 2-3*).

The plan for this commercial property integrates a variety of sustainable design elements. Through careful siting, the design utilizes low impact development (LID) storm water management techniques and engineering to conserve water and use landscaping to filter pollutants (petroleum from cars, sediment, trash) from storm water runoff. The project will include renewable energy generation, promote multi-modal transportation and recycling, and will utilize sustainable building materials.

1.4 SIGNIFICANT BENEFICIAL AND ADVERSE IMPACTS AND PROPOSED MITIGATION MEASURES

1.4.1 Beneficial Impacts

Drainage

Storm water runoff from the site will be reduced with the installation of post-construction low impact development (LID) controls, such as bioswales, rain gardens, sand filters, permeable paving material and subsurface detention chambers. Even with a net increase of impermeable surfaces, LID controls will retain storm water on-site and biofilter any not retained, in compliance with new stringent Water Quality Control rules. Both the volume and flow rate of storm water will be reduced. For more frequent, small storm events with rainfall amounts of up to four inches, all of the runoff would be retained in the detention storage system and eventually percolate back to groundwater *(*Refer to *Section 3.16.2 Probable Impacts and Mitigation Measures: Infrastructure; Post-Construction Drainage)*.

The process of percolation and the subsequent lateral transport to ultimate discharge will significantly reduce nitrogen and phosphorus concentrations by denitrification and absorption processes. Overall, the rural center's drainage system will have a significant environmental benefit in comparison to the present use.

Land Use

The rural center project site is zoned B-1 Neighborhood Business District. The site is specifically and uniquely identified in the North Shore SCP as the designated location for a small cluster of commercial and service businesses to meet the needs of the surrounding residential communities.

The project proposes modest development of approximately 25 percent of the floor area ratio (FAR) allowed under City land use ordinance for the three Hanapohaku LLC parcels. This development proposal reflects sensitivity to scale and context in keeping with the SCP definition of a Rural Community Commercial Center; associated infrastructure is likewise reduced as it supports a smaller development (*Section 3.10.2 Probable Impacts and Mitigation Measures: Land Use*).

Demographic and Economic

The proposed project will create the following financial benefits to employment, spending, and County real property tax. Construction employment is estimated at 45 full-time equivalent positions for site work, infrastructure, carpentry, and landscape. Long-term employment is estimated at ~~86~~ 80 full time jobs. Construction spending, including tenant improvements, is projected at $17.8 million.

With stabilized revenues, the project's projected State Income Tax is estimated at $2.2 million annually. The estimated State of Hawai'i General Excise Tax is $103,664 per year. The current annual City and County of Honolulu Real Property Tax is approximately $36,000; with completion and occupancy of the rural center, the County real property taxes will increase to approximately ~~$187,500~~ $148,600 per year. (Refer to *Section 3.11.2 Probable Impacts and Mitigation Measures: Demographic and Economic Conditions).*

1.4.2 Adverse Impacts

Disposal of treated wastewater effluent will slightly increase the groundwater concentrations of nitrogen and phosphorus. The impact of the increased nutrients in groundwater will not be realized until the groundwater reaches the marine environment. The additional 4.3 percent nitrogen and additional 7 percent phosphorus would likely be undetectable in the marine environment at distances from the shoreline where marine communities occur *(*Refer to *Section 3.7.~~1~~2 Marine Environment: Probable Impacts and Mitigation Measures*).

An additional ~~1,322~~ 926 net new daily vehicle trips are projected from the development of the rural center. During midday and evening peak hours, a total of 65 net new trips (29 inbound to the center and 36 outbound from the center) are anticipated; Saturday midday peak hours total 98 (51 inbound and 47 outbound). The impact of the increased traffic related to the project at the intersection of Kamehameha Highway and Pūpūkea Road would continue at level of service (LOS) A during both peak hours of traffic, with LOS B during Saturday peak hour traffic. The potential delay for a vehicle under LOS B conditions would be an additional 1.7 seconds over the near-term baseline conditions.

DOT and the City's Traffic Review Branch define a significant intersection impact when operation of an intersection changes from LOS D or better to LOS E or F. The rural center construction will not significantly impact traffic in the region. (*Section 3.13.2 Probable Impacts and Mitigation Measures: Traffic.*)

1.4.3 Proposed Mitigation Measures

Improvements to Kamehameha Highway are proposed as part of the project. These include reducing the total number of access points into the rural center by consolidating the ingress/egress to the site to one point off Kamehameha Highway and to allow no access via Pāhoe Road. A center two-way left-turn lane will be created on Kamehameha Highway to provide a refuge area for traffic turning left into and out of the rural center. A curb and ~~sidewalk~~ pedestrian pathway, separated by low vegetation to deter crossing except at designated areas, will be installed along the project's makai edge to Pūpūkea Road to narrow the existing shoulder width on Kamehameha Highway and eliminate space for illegal parking along the highway fronting the parcels. The number of parking stalls created for the rural center fulfill the requirements of the City and County of Honolulu Land Use Ordinance (LUO), and most stalls will be sited behind the rural center. *(*Refer to *Section 3.13.1 Probable Impacts and Mitigation Measures: Traffic*).

1.4.4 Unresolved Issues

Kamehameha Highway Improvements and Regional Traffic Solutions. Although the Proposed Action does not generate significant traffic impacts, there are traffic congestion problems on Kamehameha Highway along the North Shore. The State DOT is currently conducting a study of establishing a bypass road for the section of highway near Laniākea Beach, about three miles from the site toward Haleʻiwa. Traffic is particularly bad along this stretch of highway, as well as Waimea Bay, the Foodland Pūpūkea area, and along the popular surfing beaches of ʻEhukai Beach and Sunset Beach. Traffic volumes continue to grow due to the ambient island-wide traffic growth and increasing visitor attention to the North Shore's towns, beaches and mountain trails. Regional traffic mitigation solutions have been posed, such as establishing beach shuttles with organized public parking at lands in Haleʻiwa and Turtle Bay. The timing for implementing such traffic management solutions is undetermined.

Crosswalk on Kamehameha Highway near Pāhoe Road. The rural community commercial center is supported by infrastructure components including improved pedestrian and bicycle connectivity to the bike and pedestrian routes in the community (*Section 2.4.1*). A crosswalk on Kamehameha Highway near Pāhoe Road came directly from a well-received suggestion offered by a community member at the May 2017 meeting of the Sunset Beach Community Association. The project team agreed to consider a crosswalk at the location and included the concept during a scoping meeting with the HDOT. Since presenting the concept in the Draft EIS, other members of the community expressed concerns about the crosswalk. The project team continues to refine the crosswalk safety concepts and will consult with HDOT to determine the suitability of a crosswalk at the Pāhoe Road location. Specific design plans for these improvements on-site and off-site would require sign-off on engineering design and review by the government transportation agencies.

Sidewalk along Foodland Frontage on Pūpūkea Road. The City and County of Honolulu's Department of Planning and Permitting provided a recommendation during the Draft EIS review process that the project install a new sidewalk along the Foodland frontage of Pūpūkea Road. Further discussion is needed to ensure the project can fulfill the requirements for improvements within the City's Right-of-Way.

1.5 SUMMARY OF COMPATIBILITY WITH LAND USE POLICIES AND PLANS

The project is compatible with and supportive of State of Hawai'i and City and County of Honolulu land use policies, plans, and controls related to the natural and social environment. The project is fully consistent with the State Urban Land Use District, County Land Use Ordinance for Commercial zoning, and the establishment of a Rural Community Commercial Center under the North Shore Sustainable Communities Plan. Refer to *Chapter 4* for a complete evaluation of the consistency of the project with government plans and policies.

1.6 ALTERNATIVES CONSIDERED TO THE PROPOSED ACTION

Alternatives to the project are evaluated in Chapter 5. For this EIS alternatives analysis, ~~three~~ four alternatives to the Proposed Project are evaluated:

- No-Action Alternative
- Commercial Village Alternative
- Commercial Shopping Center Alternative
- Alternative Development Timetable (Deferral)

The following is a summary evaluation of the range of alternatives considered.

1.6.1 No-Action Alternative

The No-Action Alternative is the baseline against which all other alternatives are measured. Under this scenario, the existing subject properties would remain as described under "existing conditions" in Chapter 3. The existing commercial uses on the property and site improvements required in the SMA Minor Permit approved in August 2017 (2017/SMA-21), would continue operations on the Hanapohaku parcels indefinitely. These include the tenant uses by five mobile food establishments (food trucks), and businesses operating from the four existing commercial buildings.

The No-Action Alternative would dismiss the future development of the proposed action for the Rural Community Commercial Center designed to be consistent with the principles of the North Shore Sustainable Communities Plan. There would be no further development actions on the property for either temporary uses, new permanent structures or supporting infrastructure.

1.6.2 Commercial Village Alternative

The Commercial Village Alternative would propose development of the three parcels (2.7 acres) with commercial retail uses as allowed in the B-1 Neighborhood Business zoning district. The Commercial Village Alternative would provide approximately 17,000 SF net leasable floor area, which would be equivalent to 60 percent of the leasable space planned for the Rural Community Commercial Center. The alternative project would be developed as a grouping of four village style single-story wooden buildings, each with approximately 4,250 SF net leasable floor area.

The Commercial Village Alternative would include up to ten (10) mobile food establishments or "food trucks". The food trucks would provide a wide range of quick serve food options, clustered in a central food court with seating areas situated within the landscaped area in the makai portion of the property fronting the highway. A common restroom facility would serve patrons of the Commercial

Village. The development of approximately 17,000 SF of commercial buildings would result in a .146 FAR (Floor Area Ratio), representing roughly 15 percent of the allowable LUO density for the subject properties. A single driveway would be developed to provide access off Kamehameha Highway for the Commercial Village. There would be an internal connection to the neighboring Foodland parcel, with no change to the existing Foodland access driveways and parking area. The Commercial Village would have a paved parking area for 120 to 130 spaces, with 50 to 60 parking spaces to support 17,000 SF of commercial tenant space, and 60 parking spaces in support of the 10 food trucks (6 spaces/truck).

1.6.3 Commercial Shopping Center

The Commercial Shopping Center Alternative would propose development of the three parcels (2.7 acres) at shopping center scale, as allowed per the B-1 Neighborhood Business zoning district. The existing B-1 zoning would allow for 1.0 FAR (Floor Area Ratio), which would equate to commercial buildings with over 100,000 SF floor area. The calculated maximum commercial floor area for this property under existing B-1 zoning would be 117,443 SF. A proposed 2004 project for a shopping center project of 75,000 SF was strongly opposed by the community.

Thus, this EIS considers a smaller shopping center alternative of approximately 46,000 SF commercial floor area. Such a center would include a range of food and beverage, retail, and service businesses. The larger Hanapohaku properties could easily support an FAR denser than the existing commercial floor area of the Foodland store at .294 FAR. With 46,000 SF floor area and 117,443 SF property, this alternative proposes an FAR of 0.392, which is approximatley 40 percent of the allowable LUO density. To serve the Shopping Center alternative, there would need to be access driveways connecting off both Kamehameha Highway and Pāhoe Road, with partial basement parking.

1.6.4 Alternative Development Timetable (Deferral)

This alternative considers the deferral of the project to a later date. The NS Sustainable Communities Plan did not specify timing for development of a Rural Commercial Community Center. However, the land has been zoned for commercial use since the 1970s. Over time, the demand for commercial goods and services by the residents of Sunset Beach/Pūpūkea community and its visitors has grown substantially. A delay or deferral of the project development would not immediately meet the objectives and criteria for the creation of a rural center for local businesses and community gathering.

The Sunset Beach/Pūpūkea community has expressed that some existing commercial operations at the property are less desirable, such as the disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, haphazard vehicle ingress/egress, and non-focused pedestrian access. With the City's approval of SMA/2017-21 there is authorization to continue with a conditional use of the property, with very specific actions required of the owners to manage activities to minimize effects to neighbors, the community and the environment. Importantly, it remains the stated purpose of the owners to diligently plan towards the long-term objective of creating the Rural Community Commercial Center, as they seek to achieve the common objectives of the community and government planning policy for future use of this property.

Potential impacts would essentially be similar to those described for the No-Action Alternative.

1.7 SUMMARY OF PUBLIC BENEFITS

The Pūpūkea Rural Community Commercial Center will create a new community gathering place that will complete the area as envisioned in the long-range vision for the Pūpūkea/Sunset Beach community. The rural center will provide goods and services to local residents and visitors that would otherwise require long drives to urban centers on Oʻahu.

The rural center will create significant new employment for the North Shore, with 45 construction-related jobs in the short-term, and up to ~~86~~ 80 full-time positions anticipated with the completed project. In addition, there will be significant additional State and City/County government revenues generated by the project.

1.8 LISTING OF REQUIRED GOVERNMENT PERMITS AND APPROVALS

Table 1-1 identifies the major State and County land use permits and approvals that are anticipated to be required for the project, including site, building, construction, and infrastructure approvals.

Table 1-1 Required Reviews and Permits

Land Use Permits and Reviews	Agency	Status
HRS Chapter 6E Historic Preservation Review	DLNR/SHPD	Complete. SHPD accepted AA August 22, 2017 (*Appendix E*)
EIS Acceptability Determination	Department of Planning and Permitting (DPP) (Accepting Authority)	
SMA Major	DPP (City Council is Approving Authority)	
Conditional Use Permit – Joint Development Agreement Three Hanapohaku parcels	DPP	2017/CUP-37 approved October 2017 by DPP for 3 Hanapohaku lots.
Conditional Use Permit – Joint Development Agreement Hanapohaku and Foodland parcels	DPP	
Site Development Building Permits	**Agency**	**Status**
Grading/Grubbing Permit	DPP	
Board of Water Supply Approval	DPP	
DPP-DTS Approval	DPP	
Building Permits	DPP	
Other Approvals	**Agency**	**Status**
NPDES Storm water – Construction	Hawaiʻi State Department of Health (HDOH)	
Wastewater System	HDOH	
Highways Review Driveway consolidation; re-striping; crosswalk	Hawaiʻi State Department of Transportation - Highways (HDOT-HI)	

2.0

PROJECT DESCRIPTION

2.0 PROJECT DESCRIPTION

2.1	History of Property	2-1
2.2	Existing Conditions	2-3
2.3	Purpose and Need for the Rural Center	2-4
2.4	Proposed Action	2-6
2.5	Project Schedule and Costs	2-16

This chapter provides the history and existing uses of the property. The Purpose and Need, and the guiding concepts and themes for design of the rural center are documented. An overview of the planned improvements is provided.

Hanapohaku LLC is the owner in fee of 2.72 acres on three adjoining parcels recorded as Tax Map Key (TMK) (1) 5-9-011:068, 069, 070 in the ahupuaʻa of Pūpūkea in Haleʻiwa, Oʻahu, Hawaiʻi. The B-1 Neighborhood Business District-zoned parcels total 4.56 acres in combination with the adjacent 1.82-acre Foodland parcel (TMK (1) 5-9-011:016). The parcels are mauka of Pūpūkea Beach Park and Sharks Cove. Hanapohaku acquired its land in 2014 to retain local ownership of an important commercial property to provide goods and services to the Pūpūkea, Waimea, and Kawailoa communities, consistent with long-range plans.

2.1 HISTORY OF PROPERTY

Pūpūkea is an area rich in pre- and post-European contact history. With a traditional economy based largely on fishing and marine exploitation, the coastline was an important resource for the people that lived there. A dearth of fresh water meant wetland agriculture was not widely practiced, and dryland farming focusing on ʻuala (sweet potato) cultivation factored largely into traditional lifeways. The historic period brought about widespread changes to the Pūpūkea landscape. Crops such as avocado and pineapple were farmed, and large tracts of land supported housing developments. The OR&L railroad ran just makai of the project area, transporting sugarcane from the North Shore plantations. The Niimi store was a hub of activity at the project site in the early 20th century.

The property consists of four adjoining commercial zoned properties with a combined total area of 4.56 acres. This property has been used for commercial purposes for more than a century, where the Niimi family owned this land at the corner of Pūpūkea Road and Kamehameha Highway. The wood-framed Niimi General Store was constructed in 1903, and for seven decades provided a small sales outlet for goods and services to the surrounding community and visitors to the North Shore. The store included a Post Office and introduced a fast food/take-out food enterprise in 1977. Commercial use of the property was expanded in 1958 with construction of a real estate office and a dentist office.

With the conversion of the Comprehensive Zoning Code (CZC) to the Land Use Ordinance (LUO) in 1976, the land was zoned as B-1 Neighborhood Business District. The adjoining land was designated B-1 Neighborhood Business District in a 1978 zone change. A Unilateral Agreement was issued with the 1978 zone change, with a condition requiring the completion of improvements to Kamehameha Highway at the privately-owned Pāhoe Road with commercial development of the parcels.

Figure 2-1 Photographs of the former Niimi General Store (ca. 1978)

In the late 1970's, the Niimi General Store and the underlying commercial parcel at the corner of Kamehameha Highway and Pūpūkea Road were sold to the Maurice Sullivan family, owners of the Sullivan Family of Companies and Foodland supermarkets across the State. This site was redeveloped into a Foodland Supermarket with construction of a single-story CMU building in 1980, thus introducing a modern grocery store to directly serve the Pūpūkea-Sunset Beach community. A portion of the supermarket was converted to include a coffee shop now operating as The Coffee Bean & Tea Leaf. The grocery store was improved in 1997 to expand the fresh produce and deli sections. The operational floor area of the supermarket is approximately 21,650 square feet (SF).

The *North Shore Sustainable Community Plan* (DPP, 2011) offers the following perspective of the region's history and context in the island of Oʻahu:

> *The North Shore's Native Hawaiian heritage, cultural diversity, and plantation past are reflected in its small rural communities, and its agricultural landscapes and open space resources. For many, the North Shore is a place for rest and recreation that offers opportunities to enjoy the country atmosphere, numerous white sand beaches, and mountain areas. As Honolulu and its suburban areas continue to grow and become increasingly urbanized, it has become more important to maintain the North Shore as an essential haven and respite from the urbanized areas of Oʻahu.*

These attributes are what draw millions of visitors to the area each year, bringing much needed tourism revenue to help support the local economy. Since the closing of the Waialua Sugar Plantation in 1996, the region has sought to revitalize itself into a sustainable community where commerce, tourism, and agriculture can flourish while upholding the community's commitment to "Keep the Country, Country."

2.2 EXISTING CONDITIONS

The rural community commercial center site consists of four contiguous commercial-zoned properties with a combined total area of 4.56 acres. Three contiguous parcels with a combined area of 2.72 acres will be redeveloped, with a new connection to the developed 1.84-acre Foodland parcel adjacent to the south. The properties are bounded by Country zoned one-acre lots with homes to the north and east. The property is zoned B-1 Neighborhood Business District.

The 1.84-acre corner parcel at Kamehameha Highway and the City-owned Pūpūkea Road contains a Foodland grocery store. Owned by the Sullivan Entities, this parcel is associated with the project because of a development agreement established among the four parcels in 1996 to achieve the mutual benefits of an integrated neighborhood shopping center without obstructing walls or fences between parcels. The Sullivan Entities do not own any interest in the three other parcels or in Hanapohaku. Only minimal alterations to the Foodland parcel, i.e., a common egress / ingress point from Kamehameha Highway, limited parking lot improvements, and related landscaping are contemplated as part of the project.

The existing commercial use of the Hanapohaku LLC property consists of small, locally owned businesses operated by families that reside primarily on the North Shore. The project site currently houses a small surfboard retail and rental establishment (North Shore Surf Shop) and a beachwear/swimwear store (Seamaids), a real estate office, a commissary (servicing one food truck) with office, and five mobile food establishments (food trucks). Supporting uses currently on the property include food truck seating areas, portable toilets, portable hand-washing station, parking areas, trash dumpsters, fences, water lines, electrical lines and landscape. Drainage controls have been added to manage storm water runoff.

The commercial operations on the property are entitled under Special Management Area (SMA) Use Permits, including an SMA – Minor in 2017 (2017/SMA-21). Hanapohaku ~~is to comply~~ has complied with specific terms and conditions to clear past use violations. ~~Current compliance actions include settlement of fines and obtaining s~~Site development and building permits have been obtained to fulfill all elements approved in 2017/SMA-21. A contested case petition was issued against the City for issuance of the SMA minor permit. The existing uses will be completely removed for development for the Rural Community Commercial Center.

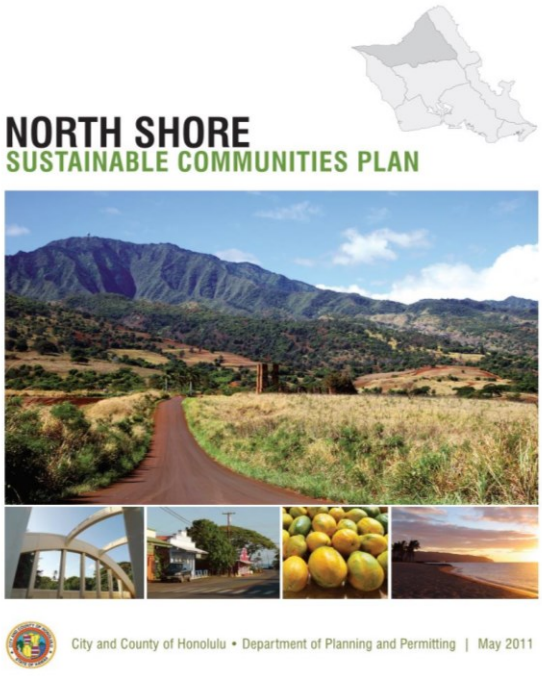
2.3 PURPOSE AND NEED FOR THE RURAL CENTER

The vision, themes and concept for the project are derived from the guidance of the *North Shore Sustainable Communities Plan* (SCP) (DPP 2011), joining with the owner's desire to create a unique gathering place for the community. The 2011 SCP process was the culmination of several years of intensive work involving a community and stakeholders working group joined with the City and County of Honolulu Department of Planning and Permitting (DPP) and its planning consultants. Within this effort, there were many significant discussions of the 20-year planning horizon and growth management for this rural section of O'ahu. The plan identified very limited locations for infill development and elaborated on areas to be maintained as defined residential communities, and areas dedicated to business and commercial services.

The SCP emphasizes the objectives and policies for the creation of a Rural Community Commercial Center, consistent with the business zoning, at this location.

> *The area between the existing Foodland market and the adjacent commercially zoned properties between Pūpūkea Road and Pāhoe Road is designated as a Rural Community Commercial Center.*

The 4.56 acres of land with existing B-1 Neighborhood Business District zoning was the community's clear choice to consolidate the future of existing and new commercial uses in the Sunset Beach-Pūpūkea region. Further, the SCP establishes policies and guidelines for future development of the Rural Community Commercial Center, as delineated in Section 3.6.3 of the SCP and summarized below.



3.6.3 Rural Community Commercial Center
<u>Summary of Policies and Guidelines</u>

- Range of Goods & Services to Meet the Needs of Surrounding Residential Communities
- Center attracts Visitors & Residents from Outside the Immediate Community
- Commercial Establishments may Include: Grocery Stores, Sundries Stores, Restaurants, and Other Services and Shops Catering to Residents and Visitors
- Smaller in Scale than typical "Country Town"
- One-Story and Two-Story Building Heights
- Clustered Commercial Uses vs. Spread along Highway
- Reflect Rural Character & Compatible with Adjoining Area
- Safe & Convenient Transportation and Access
- Pedestrian & Bicycle Friendly: Crosswalks, Pathways, Bike Racks
- Parking behind Buildings and Landscaping

Figure 2-2 North Shore Sustainable Communities Plan Rural Communities Center Policies

Major Themes and Planning Principles

Working with the planning team and with input from the community, Hanapohaku LLC has developed a vision for its property. Several over-arching Major Themes guide the planning principles:

1. Community Gathering Place
2. Environmental Sensitivity
3. Local Businesses Thrive
4. Culture and Sustainability

Community Gathering Place

Residents of the Sunset Beach-Pūpūkea community regularly shop at the Foodland market, which is a major locally-owned grocery store. Foodland is a touchstone location for most local residents and provides an opportunity to interact with neighbors, families and visitors to fulfill daily supply needs within this busy beach community. The supplies currently available to the surrounding community will be supplemented with the buildout of the Rural Community Commercial Center. The addition of services not currently available will complement this important community hub and enhance daily life with interactions and a greater variety of goods and services to support living in Sunset Beach-Pūpūkea.

Environmental Sensitivity

Core to the essence of the Rural Community Commercial Center is protection of the environment, which is a widely held community value for residents of the North Shore. With close proximity to the Pūpūkea Marine Life Conservation District (MLCD), redevelopment of the property must integrate environmental protections in the planning, design and operation. The project's plan incorporates numerous measures to minimize environmental impacts including soil stabilization, water and energy conservation, storm water runoff management, minimization of waste and recycling, water-efficient native plants and protection of water quality. Sensitivity to the human environment is also core to the planning principles, with respect for neighbors and minimization of noise and traffic, and maintenance of views and sight lines.

Local Businesses Thrive

The Rural Community Commercial Center creates a place where local businesses can conduct operations to serve the Sunset Beach-Pūpūkea community and its visitors. By intent, the SCP and County zoning controls restrict business locations in this rural area of the island. The rural center will support local businesses from the North Shore and Hawai'i, emphasizing the value the landowner places on benefits to the community and fostering a home-grown sense of entrepreneurship. Business and employment opportunities for area residents will provide additional jobs within the community and avoid long commutes to job centers in urban areas of O'ahu.

Culture and Sustainability

The Pūpūkea region has a rich cultural history. The project design incorporates physical elements to honor the past and present culture through integration of native plants, creating a gathering space suitable for sharing hula and music and to just "talk story" among community members. Physical design will pay homage to natural elements of stone, and colorful country-style storefronts. Principles of sustainability are integrated in the project's scale, environmental sensitivity, landscaping and facilities' design and operations including water conservation, native plant use, and on-site electricity generation from solar photovoltaic panels.

2.4 PROPOSED ACTION

The project will develop a Rural Community Commercial Center with an overall focus on sustainable principles, consistent with the design guidelines of the North Shore Sustainable Communities Plan. The rural center will expand the services and goods available to residents of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors, and add services not otherwise available in the vicinity. Infrastructure to support the new facilities will include driveways, parking shaded by solar panel canopies, storm water runoff controls, water supply, and wastewater. The planned floor area of the facilities will be approximately ~~27,000~~ 28,325 SF of net leasable area per the City and County of Honolulu Land Use Ordinance (LUO) (~~30,000~~ 34,500 SF gross floor area).

Building design will be consistent with the country character of the North Shore. One- to two-story buildings will be set back from the highway with parking sited behind to create an open, park-like space along Kamehameha Highway. Total on-site parking will accommodate 126 vehicles, which is more than required under the City LUO. The small-scale clustered buildings linked by meandering walkways and a central green landscaped area will provide a community gathering place for residents and visitors. Pathways will create pedestrian connectivity across the property from bike paths and bus stops along Kamehameha Highway to the Foodland grocery store, a frequent daily destination for area residents. Vehicle access can periodically be blocked from the hardscaped area adjacent to the central green to allow for periodic pedestrian-friendly community gatherings and cultural events, such as art shows, farmers' markets, mobile food trucks, and music and dance performances.

The design layout works in concert with the gentle slope of the land, providing respectful setbacks between buildings and the neighboring homes, and creates an open landscaped park-like setting along the highway. Through agreement with the Pāhoe Road residents, access to the site will be limited to Kamehameha Highway. *Figure 2-3* presents the conceptual site master plan.

The site design intentionally minimizes earthwork and emphasizes the assets of views in creating a gathering place for the community while accessing goods and services. Following guidelines from the North Shore SCP for the Rural Community Commercial Center, the plan places the parking area behind the buildings to maintain a more rural street front. Buildings are one- to two-story in keeping with the region, which maximizes the site's open space. The plan creates a functional linkage with the Pūpūkea Foodland to improve pedestrian connectivity and to optimize vehicle circulation.

Importantly, the modest development plan utilizes approximately 25 percent of the floor area ratio (FAR) allowed under City land use ordinance for this property. This toned-down approach reflects the sensitivity to scale and context as a Rural Community Commercial Center. Greater building density on this site would result in larger buildings, additional burdens to infrastructure, and a loss of country character. As shown in *Figure 2-3*, the conceptual development plan creates a natural flow in an appropriately-scaled built environment, which maximizes open views, public space, and landscaping consistent with the rural nature of the broader community.

Figure 2-3 **Conceptual Site Plan** ***(Revised graphic)***

This page left intentionally blank.

Local Hawai'i-Based Commercial Tenants

The owners, Hanapohaku LLC, are committed to pursuing Hawai'i-based businesses as tenants of the center. This commitment underlies the objectives of the owners to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community. The types of businesses will provide goods and services complementary to the existing Foodland grocery store on the adjacent property, and may include:

- Urgent Care – small scale medical service clinic for non-emergency needs
- Pharmacy & Health Products – small scale pharmacy, health products, organic products
- Bank – small scale bank branch, financial services
- Business Center – copy services, business supply, package shipping/delivery, private post office
- Professional Services – dentistry, chiropractic, psychiatry, legal, accounting, etc.
- Real Estate Office – continue/expand an existing, on-site business
- Surf Shop, Beach Apparel & Action Sports Retail – continue/expand existing, on-site business
- Other Retail - art gallery, cultural arts, music and jewelry
- Yoga & Fitness Studio – multipurpose studio, with potential for dance, hula, music
- Child Care Center - day care center for families
- Community Organization – office space for local community/environmental organization
- Quick Service Food – mobile food trucks offering different food types, affordable pricing
- Health Food Market/Deli – dry goods and grab-and-go food
- Restaurant – Full service restaurant with bar, with both indoor and outdoor lanai seating

Table 2-1 identifies the floor areas of suitable tenant spaces at the Rural Community Commercial Center.

Table 2-1 Development Program

	Net Leasable Floor Area (SF)	
North Building		
Level 2 – Restaurant	~~3,860~~	3,986
Level 1 – Retail Tenants - Shops, Art Gallery, Yoga	~~4,939~~	5,037
Subtotal	~~8,799~~	9,023
Mauka Building		
Level 2 – Urgent Care Medical Clinic, Pharmacy, Offices e.g. Bank, Professional	~~8,160~~	8,442
Level 1 – Retail Tenants – Clothing, Market	~~8,160~~	8,930
Subtotal	~~16,320~~	17,372
Pavilion Building		
Level 1 - Surf Shop/Action Sports	~~1,953~~	1,933
Total Net Leasable Area	**~~27,072~~**	**28,328**
	Parking Spaces	
	126	

Architectural Style

The design of the Rural Community Commercial Center will be consistent with the surrounding North Shore country setting. Residents of the North Shore are purposeful in their life choices, as they are not seeking the busy hustle of urban living. They place high value upon the North Shore's slower pace of life, with large sections of open space, winding two-lane roads, large Country lots, active agricultural lands, a clean ocean and wide beaches, and the endless trails of the mauka watershed lands. The rural center must be truly reflective of this lifestyle and values.

The planned uses of the rural center are clustered into two main commercial buildings - one building on the north side aligned mauka to makai, and the other building at the center of the parcel extending parallel to the grade and highway. To preserve the greatest amount of open space on this property, commercial uses will be integrated within the one- to two-story buildings. Design heights will be well within the 40-foot height limit, with the central building nestled into the landscape to provide easy access to both building levels. The second-floor lanai of the north building will provide shade along the walkway below. A single-story 25-foot maximum height stand-alone retail building of approximately 2,000 SF will be located near the entrance to the property, setback from the highway.

Architectural design for the buildings seeks to reflect the character of surrounding beach homes that recall classic plantation-style architecture. Wide, shaded lanai invite people in, and plantation-style awnings will provide shade to key windows. A conceptual elevation view from Kamehameha Highway is provided in *Figure 2-4*.

The perspective view highlights the open community gathering place located at the center of the property on the makai side. The two main buildings frame this green space, with business entrances tied together by a continuous walkway. A ground level perspective is shown in *Figure 2-5*.

Open Space and Landscaping

The open community gathering place is anchored by three dominant themes: the geologic and natural elements that shape the region; Hawaiian settlement and stewardship of resources; and the cultural expansion that formed 20th Century commerce. The permeable paving material on the lower parking area includes a design to tie the landscaped areas to the buildings (*Figure 2-3*).

There will be open space areas and landscaping throughout the project site. Landscaping will be provided consistent with LUO requirements, with additional planting along the mauka boundary between the neighboring residential property. Extensive landscaping will be provided along the boundary with Pāhoe Road and will use low-growing plants near the highway intersection to allow a clear line of sight from vehicles departing Pāhoe Road. Along the Kamehameha Highway frontage, the buildings and parking area are set back about 60 feet from the highway to create a large open green space and gathering place, with meandering bicycle/pedestrian pathways in an active, park-like setting. The accent plantings established along the front and sides of the buildings will complement the country style setting. Potential locations for mobile food trucks are shown in *Figure 2-6*.

Sustainable Design Elements

The development plan for this commercial property integrates a variety of sustainable design elements. Through careful siting, the design utilizes low impact development (LID) storm water management techniques and engineering to conserve water and use landscaping to filter possible pollutants (petroleum from cars, sediment, trash) from storm water runoff. The project will include renewable energy generation, promote multi-modal transportation and recycling, and will utilize sustainable building materials.

Figure 2-4 Site ~~Plan~~ – Elevation View

Figure 2-5 Ground Level Perspective View at the Central Green *(Revised graphic)*

Figure 2-6 **Site Plan – Featured Elements (*Revised graphic*)** ~~**Potential Food Truck Locations**~~

2.4.1 Infrastructure Components

Roadways, Vehicular Access, Circulation and Parking

Access will be provided through a combined driveway onto the properties from Kamehameha Highway, with planned closure of the Foodland driveways currently along Kamehameha Highway. The existing driveway connection to Pūpūkea Road will be retained, with nominal improvements to the Foodland parking area. The main circulation driveway extends from the highway to the large parking area in the mauka portion of the property. There will be no access to or from the privately owned Pāhoe Road.

Customers to the rural center will be guided to the main entrance via clear signage. The shoulder of Kamehameha Highway will be narrowed by installation of a pedestrian pathway and curb ~~and sidewalk~~ along the property edge, thus eliminating parking along the highway fronting the parcels. Access for pedestrians and cyclists will be incorporated. The new parking areas will include a continuous canopy of photovoltaic panels, providing shade for parked cars and generating solar energy for on-site usage. The number of parking stalls created for the rural center fulfill the requirements of the City LUO~~.~~, and are calculated based on gross floor area. One space per 400 square feet of retail, business, and restaurant space is applicable to this center. With approximately 34,500 gross square feet, 87 parking spaces are required. The mobile food truck parking requirement for Haleiwa of six spaces per food truck has also been applied to the center to accommodate up to six food trucks (an additional 36 spaces). The total parking provided on site will be for 126 vehicles.

Highway Restriping for Turning Lane

The project will involve restriping of Kamehameha Highway to create a left turn storage lane and shelter lane at the entrance. The restriped center lane will extend from Pūpūkea Road to Pāhoe Road. The right-of-way for Kamehameha Highway has adequate width to accommodate the restriping, with any need for additional ~~paving~~ width provided by paving the ~~from the~~ mauka side along the project frontage. The traffic flow associated with the project will not affect traffic flow at the Pūpūkea Road intersection. The traffic impact assessment is addressed in *Section 3.13 Roadways and Circulation* and *Appendix F*.

Pedestrian and Bicycle Circulation

A central theme to the Rural Community Commercial Center is to create a gathering place for the community utilizing principles of sustainability and environmental sensitivity. The property is connected to the community via the Ke Ala Pūpūkea bike path, a linear pedestrian and bicycle route along the makai side of Kamehameha Highway. People come to the Foodland site every day on foot, skateboard, bicycle as well as vehicles. A series of new walkways will be created at the rural center to create a lively bicycle and pedestrian environment, allowing the community gathering place to naturally move between the Foodland property and the offsite bike and pedestrian pathway that winds through the Pūpūkea Beach Park across the highway.

To aid connectivity and improve pedestrian and bicycle safety in the community, a new crosswalk is proposed at Kamehameha Highway at the northern end of the property, near the corner of Pāhoe Road. This crossing will provide additional capacity for pedestrian traffic, which is currently limited to the existing highway crosswalk at the intersection of Pūpūkea Road.

Water Supply and Distribution

The project will be served with potable water through the Honolulu Board of Water Supply distribution system and meter at the subject property. An existing 8-inch water main on Kamehameha Highway currently provides water service via an existing 1-inch water meter.

Based on BWS system standards, average daily water consumption for a commercial center the size proposed is approximately 8,160 gallons per day (gpd), which includes irrigation. Possible maximum daily water demand is calculated as a factor of 1.5; BWS has indicated the existing water system is adequate for the proposed development (*Section 3.16 Infrastructure and Utilities*, and *Appendix H*).

The project has no requirement for off-site improvements to the BWS system. Plans of the on-site water system improvements are shown in *Chapter 3*. The water system will be designed and constructed to code requirements. The BWS requirements for standard on-site improvements for the water meter, on-site distribution, fire suppression and back flow prevention will be satisfied in coordination with the Honolulu BWS and the Honolulu Fire Department.

Wastewater Collection, Treatment and Disposal

Only one local municipal wastewater collection system exists on the North Shore and serves a subdivision in Waialua. Residential and commercial properties on the North Shore collect and treat wastewater using on-site wastewater and disposal systems, which are regulated through the State of Hawaiʻi Department of Health. Wastewater management is addressed in *Section 3.5 Groundwater*, *Section 3.16 Infrastructure and Utilities,* and *Appendix B*.

The project will generate wastewater through the planned commercial tenant uses of retail, office and restaurant operations. The total anticipated net increase in wastewater flow is estimated to be 6,920 gpd. As a comparison, this wastewater flow equates to the wastewater flows generated by 11 to 15 single-family homes (approximately 450 to 600 gpd per home with four occupants). There will be no industrial wastewater generated or discharged by tenants.

Wastewater will be treated on-site through a wastewater treatment works consisting of pre-treatment, an aerobic treatment unit and absorption beds. The overall system operation, including wastewater flow monitoring, treatment system and effluent characteristics, and subsurface disposal system must meet or exceed the requirements of the DOH Wastewater Branch (WWB). DOH WWB requires regular monitoring and reporting to demonstrate system performance. The specifications for the planned wastewater treatment and disposal system are included in *Appendix H*.

Storm Water Management and Drainage System

Swales constructed of stone and gravel will be installed in key areas of the property to intercept and slow sheet flow, and to direct storm water to rain gardens and prompt infiltration to soils. There is no sub-surface drainage system serving the project site. The future on-site drainage system will collect and manage storm water generated by the impervious surfaces on the property such as building roofs, paved parking lots with photovoltaic-panel canopies. The collection system will consist of bio-swales, pervious pavement, landscaping, gutters and curbs to direct flows to drain inlets, catch basins and trench drains that will allow for infiltration to soils and to detain runoff on site. The collection systems will be based on the ~~Rules Relating to~~ Storm Drainage Standards (~~January 2000~~ August 2017, Department of Planning and Permitting, City and County of Honolulu).

Vegetated swales, rain gardens, and storm drain filtration devices are among the types of treatment that will be utilized to remove car oils, surface debris, and sediment from storm water runoff. Drainage and storm water management at the Foodland property will be improved through consolidation of driveways to the rural center, which will allow the two existing driveways to be transformed to landscaped storm water detention areas. Storm water runoff will no longer flow uncontrolled through the previous driveways onto Kamehameha Highway. Instead, the surface flow runoff will be settled and filtered

through landscaped areas. Drainage and storm water management, and Best Management Practices are addressed in *Section 3.6 Surface Water and Drainage* and *Appendix H*.

Electrical Power and Communications

The project site is currently served with electrical power by overhead 12kV distribution lines from HECO. The facilities operations planned at the rural center will have an estimated electrical power demand of 4,000 kilowatt hours per day. Underground electrical conduit will be installed for onsite connections to the buildings, wastewater system and parking lot lighting. Electrical power demand and system elements are addressed in *Section 3.16 Infrastructure* and *Appendix H*.

Outdoor Lighting

Outdoor lighting established for the project will comply with County standards for downlighting achieved through utilization of full-cutoff light fixtures, which blocks light dispersion and glare horizontally to reduce light pollution. Lighting design will minimize light and glare to both neighboring residential areas and migratory seabirds. There is the potential for migratory seabirds to become disoriented and injured when attracted to lights in populated areas where they can possibly collide with power lines or structures. Measures to minimize the potential impacts to seabirds are described in *Section 3.4 Terrestrial Flora and Fauna* and *Appendix A*.

Solid Waste Management

Calculations were made to estimate the quantity of solid waste generated by the rural center. The project uses are anticipated to generate 2 to 3 tons per day of municipal solid waste. A private carting service will collect solid waste from the dumpsters in the trash collection area on a regular schedule, with pick up service estimated at three to four times per week. Solid waste will be transferred to the City waste recycling and disposal facilities, managed by the Department of Environmental Services.

2.5 PROJECT SCHEDULE AND COSTS

Implementation of the project improvements will commence upon issuance of the required City and County of Honolulu and State of Hawaii permits and approvals. The following presents a high-level development timetable reflecting the major phases of permitting and construction.

Permitting and Development Phase	Anticipated Completion
Environmental Impact Statement	~~Winter 2017~~ Summer 2018
Special Management Area Use Permit - Major	~~Spring~~ Fall 2018
Design, Construction Plans, Permit Applications	~~Summer~~ 2018
Approvals of Site Development & Building Permits	~~Spring~~ 2019
Construction Start	~~Summer 2019~~ 2020
Construction Completion	~~Spring~~ 2021
Occupancy	~~Summer 2021~~ 2022

Projected Construction Costs

Construction costs for this project are estimated at a value of $18 million. The estimate includes all sitework, utility installation and landscaping, as well as the vertical construction costs such as foundation work, tenant improvements, signage, bonding and insurance. Off-site costs and contingencies are also included in the overall construction cost estimate.

3.0

ENVIRONMENTAL SETTING, PROBABLE IMPACTS, AND RECOMMENDED MITIGATION

3.0 ENVIRONMENTAL SETTING, PROBABLE IMPACTS, AND RECOMMENDED MITIGATION

3.1	Climate and Rainfall	3-2
3.2	Geology, Topography, and Soils	3-2
3.3	Natural Hazards	3-5
3.4	Terrestrial Flora and Fauna	3-8
3.5	Groundwater	3-11
3.6	Surface Water and Drainage	3-17
3.7	Marine Environment	3-21
3.8	Cultural Resources	3-26
3.9	Archaeological and Historic Resources	3-29
3.10	Land Use	3-30
3.11	Demographic and Economic Conditions	3-31
3.12	Public Services	3-33
3.13	Traffic	3-35
3.14	Air Quality	3-41
3.15	Noise	3-42
3.16	Infrastructure and Utilities	3-43
3.17	Visual Environment	3-49
3.18	Summary of Probable Impacts	3-55
3.19	Unresolved Issues	3-59

This chapter describes the existing environmental conditions and identifies probable impacts of the proposed project. “Environmental conditions” include human and economic conditions as well as natural resources. Strategies to minimize impacts and to mitigate any significant impacts are identified.

3.1 CLIMATE AND RAINFALL

3.1.1 Existing Conditions

Climate in the Pūpūkea area is dictated by predominant trade winds from the east-northeast. Wind speeds average 5 miles per hour (mph) based, on the annual average range from less than 1 mph, to approximately 16 mph. The prevailing trade winds come from the northeast and usually vary between 10 to 20 mph. Trade winds usually occur about 50 percent of the time between January and March, and 90 percent of the time during June and through August. In the winter, strong Kona winds associated with extra-tropical storms that track predominantly eastward from origins in the northwest Pacific.

The average annual rainfall is 45.5 inches, with June typically the driest month with approximately 2.4 inches of rainfall, and January typically the wettest month with 5.8 inches average rainfall.

The average annual temperature at the project site is 74.3°F. Daily temperatures range from a low average daily temperature of 70.8°F in January, to a high average daily temperature of 77.6°F in August (Giambelluca et al., 2014).

3.1.2 Probable Impacts and Mitigation Measures

The rural center will have no short-term or long-term impact on climate conditions. The rural center's buildings have been designed for the climate in Hawaiʻi and will utilize solar energy to produce electricity to be used on site (see *Section 3.16, Infrastructure and Utilities*).

No minimization or mitigation measures are required.

3.2 GEOLOGY, TOPOGRAPHY, AND SOILS

3.2.1 Existing Conditions

Geology

The geological formation of the Hawaiian archipelago is the result of volcanism. Each island protrusion from the ocean is the summit of a volcanic mountain rising from the ocean floor. The geologic creation results from the Earth's crust, comprised of irregular rigid segments known as plates, moving over a hot spot of upwelling lava. The plate that lies under Oʻahu is known as the Pacific plate, which has slowly moved over this span of time towards the northwest. Oʻahu was created through several stages of activity emanating from two volcanic domes. Through various stages of eruptions, erosion and land movement, the volcanic forms became what are known today as the Waiʻanae and Koʻolau mountain ranges.

The rural center site is located on the Koʻolau mountain range, once a massive shield volcano that shaped the windward coast. Below the Koʻolau range the sandy coastal plain formed during times of higher sea levels. The soils historically supported sugarcane, pasture lands, orchards and truck crops.

Topography
The subject properties have a relatively moderate slope from the mauka side of the property towards Kamehameha Highway, at an average slope of 5 percent. A topographic survey indicates elevation of the site ranges from 29 to 51 feet above Mean Sea Level.

Soils
The subject properties consist of a single soil type, Waialua silty clay (WkB), 3-8 percent slopes (*Figure 3-1*). WkB soils typically occur on alluvial fans. The soil properties are described as moderately well drained with low runoff and low permeability. A geotechnical engineering exploration study conducted in April 2017 identified silty clays and clays extending from the ground surface to depths of 13 to 22 feet below the existing ground surface.

Installation of two water quality monitoring wells on the project site (see *Section 3.5, Groundwater*) provided soil cores that reveal the subsurface soil profile. At the monitoring well site located on the inland side of the site, the upper 18 feet of soil is comprised of silty clay followed by layers of slightly weathered to unweathered basalt lava flow and clinker to the bottom of the 100-foot well. At the monitoring well site constructed nearer the makai side of the parcel, silty clay comprises the upper 16 feet. Between the 16-foot depth to 31-foot depth is coral and coralline sand and gravel, with slightly weathered to unweathered layers of basalt found to the well bottom at 100 feet depth (*Appendix B)*.

Several soil erosion controls are currently being implemented to minimize erosion and dust stemming from existing commercial use of the site (see *Section 3.6 Surface Water and Drainage*). Hydro-mulch seeding to vegetate previously cleared areas has been undertaken, and temporary sediment control measures such as filter socks have been installed to protect soils from erosion.

3.2.2 Probable Impacts and Mitigation Measures

Construction of the rural center will involve land disturbing activities that will result in minor soil erosion during removal of vegetation (clearing and grubbing), grading, excavation, and infilling of soil. As the project will disturb more than one acre, both County and State permits are required, which will be obtained following review of detailed construction plans by the relevant agencies.

Project construction will require onsite grading and fill. A grading permit, approved by City and County Department of Planning and Permitting (DPP) and the Hawai‘i State Department of Land and Natural Resources, Historic Preservation Division, will be obtained as required for grading activities. Soil will be removed and replaced in key areas to achieve desired site conditions.

Grading is required to provide level building foundations. The central two-story building will be set into the slope to maintain a low profile and to allow access at grade from both the ground and second floor. The access drive will guide vehicles from the highway directly mauka to parking spaces behind the building, in compliance with the guidelines of the North Shore SCP.

Construction activities will alter site topography where needed to establish site infrastructure and buildings for the rural community center. Construction and landscaping treatments will stabilize the finished grade; no significant impacts are anticipated.

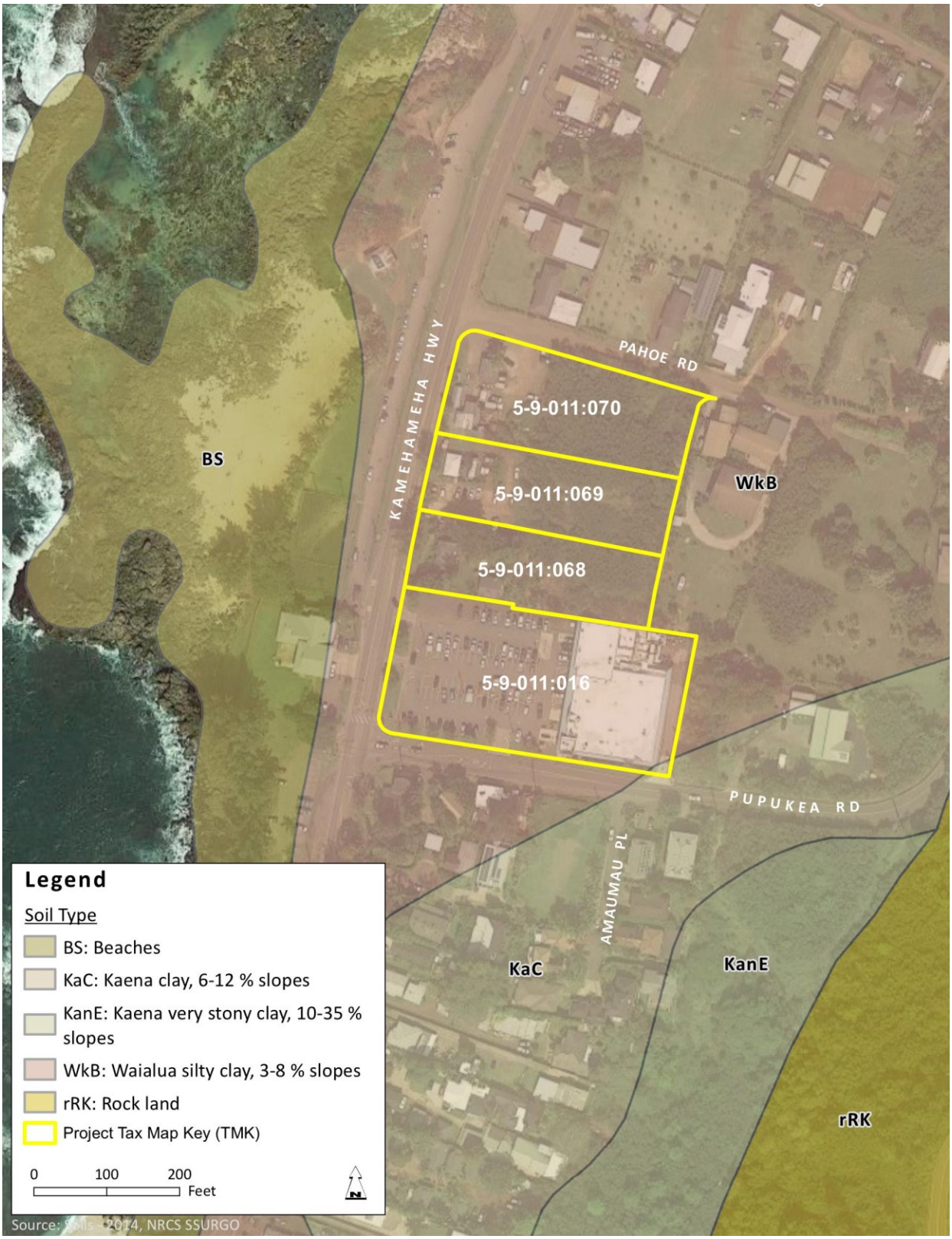


Figure 3-1 Soils Classification Map (U.S. Department of Agriculture Soil Conservation Service)

During construction, soil erosion will be minimized through compliance with the State, County, and Federal regulations. Implementation of Best Management Practices (BMPs) will be required, and will include erosion controls, sediment controls, and good housekeeping practices to prevent and minimize off site discharges (see *Section 3.6 Surface Water and Drainage*). Maintenance of erosion and sediment controls is required during construction activities to ensure BMPs remain effective.

BMPs to reduce and control soil erosion will include use of geotextile fabric to cover temporarily bare soil where appropriate, and to apply hydraulic mulch to cover areas until permanent soil cover and landscaping is established. Another method that could be used to prevent and control runoff is directing storm water that may flow onto or through the project area into an earth dike or stabilized watercourse. Minimum design standards for materials to be used are specified in State Department of Health (DOH) Hawai‘i Administrative Rules §20-3 Relating to Water Quality.

Additional BMPs will be used to intercept, slow or detain storm water, ~~which~~ to trap~~s~~ sediment and allow~~s~~ settling and filtering of runoff. Such methods include use of filter socks to protect storm drain inlets, or creating sediment barriers made of gravel bags, sandbags, fiber rolls or compost filter socks. The entrance to the rural center will be stabilized with gravel to reduce transfer of mud and sediment from construction vehicles to adjacent paved and public roads, or a tire wash system may be employed. Any materials dropped or tracked to off-site streets or paved areas will be cleaned using dry methods such as sweeping or vacuuming.

Under Hawai‘i air pollution rules, visible dust (“fugitive dust”) created by construction must be controlled to such an extent that no visible emissions occur beyond the property line (see *Section 3.14 Air Quality*). Impacts from soil disturbance will be minimized through application of the methods described and will be of short-term duration during construction. Foodland’s operations at the Foodland parcel will not be affected by construction of the project.

With the rural center in place there will be drainage controls, site improvements and landscape plantings which will stabilize the soils on the property. No long-term significant adverse impacts to geology, topography or soils will occur from the rural center. With mitigation, long-term improvements to surface runoff water quality are anticipated (refer to *Section 3.6*).

3.3 NATURAL HAZARDS

3.3.1 Existing Conditions

Hurricanes and Tropical Storms

Hurricanes and tropical storms are giant whirlwinds in which air moves around a center of low pressure, reaching maximum velocity in a circular band. Tropical storms are categorized as an organized system of strong thunderstorms with defined circulation and maximum sustained winds of 39-73 mph. Hurricanes are intense tropical weather systems with well-defined circulation and maximum sustained winds of 74 mph.

In the Northern Hemisphere, a hurricane's circulation includes low pressure and counter-clockwise inflow at the surface, and high pressure and clockwise outflow at upper levels. The overall diameter of the hurricane circulation is typically between 300 and 600 miles. A hurricane or tropical storm may create hazardous conditions from high winds, torrential rainfall, coastal and inland flooding and

erosion, high surf, and storm surge, which may damage or destroy property and/or threaten lives. The general season for these storms is between the months of June to December.

Hurricanes are considered relatively rare events in the Hawaiian Islands. Records show that strong wind storms have struck all major Hawaiian Islands. The first officially recognized hurricane in Hawaiian waters was Hurricane Hiki in August 1950. Since that time, five hurricanes have caused serious damage in Hawaiʻi: Nina (1957), Dot (1959), Iwa (1982), Estelle (1986), and Iniki (1992). Most recently in 2014, Hurricane Iselle made landfall in the southeastern part of Hawaiʻi Island, damaging homes, roadways, and utility lines affecting thousands of people.

Earthquakes

The majority of earthquakes in Hawaiʻi are directly related to volcanic activity on the Island of Hawaiʻi. Per the 2006 International Building Code (IBC) Seismic Design Map, the project area could experience seismic activity between .60 and .70 of the earth's gravitational acceleration (g-force). The project area generally is at a low risk from potential earthquake damage.

The last significant earthquake to hit Hawai'i occurred in 2006, when a magnitude 6.7 struck Hawaiʻi Island. The earthquake was felt by and affected neighboring islands, including Oʻahu, leaving many regions of the island without running water and power for the entire day.

Flooding

The project area lies within Flood Zone X as designated on the National Flood Insurance Rate Maps. Per FEMA documentation, this zone represents an area outside of the 0.2 percent annual chance floodplain (*Figure 3-2)*. There is minimal to no threat of serious riverine or coastal flooding for the project. The lowest ground elevation associated with the project area is approximately 29 feet above MSL which is well above the predicted base flood elevation of 12 feet above MSL.

Tsunami Inundation

Tsunamis are caused by a sudden and typically violent movement of the sea floor that generates a wave or a series of great waves which travel across the ocean until they reach a coast. Sea floor movements may include earthquake faulting, submarine land sliding, or submarine volcanic eruptions. Submarine faulting, often consisting of the vertical movement of a block of oceanic crust, may cause earthquakes.

Tsunamis are characterized by great speeds (up to 590 mph), long wave length (up to 120 miles), long periods between successive crests (ranging from minutes to a few hours), and low height in the open sea. Upon reaching a coastline, a tsunami can become a wall of water reaching heights of 30 feet or more and capable of moving inland several hundred feet.

In Hawaiʻi, tsunamis have accounted for more lost lives than the total of all other local natural disasters. In the 20th century, an estimated 221 people were killed in Hawaiʻi by tsunami events. Historically, the south shore of Oʻahu, including Waikīkī, has been affected only minimally by tsunamis. Known major tsunami events in Hawaiʻi per the Pacific Disaster Center include the areas of Hilo (1946), North Shore Oʻahu (1952), Lāʻie Point (1957), Hilo (1960), and Halapē Beach Park, Hawaiʻi Island (1975).

According to existing City and County of Honolulu tsunami evacuation maps, the entire area of the rural center is located outside of the Tsunami Evacuation Zone (*Figure 3-2*).

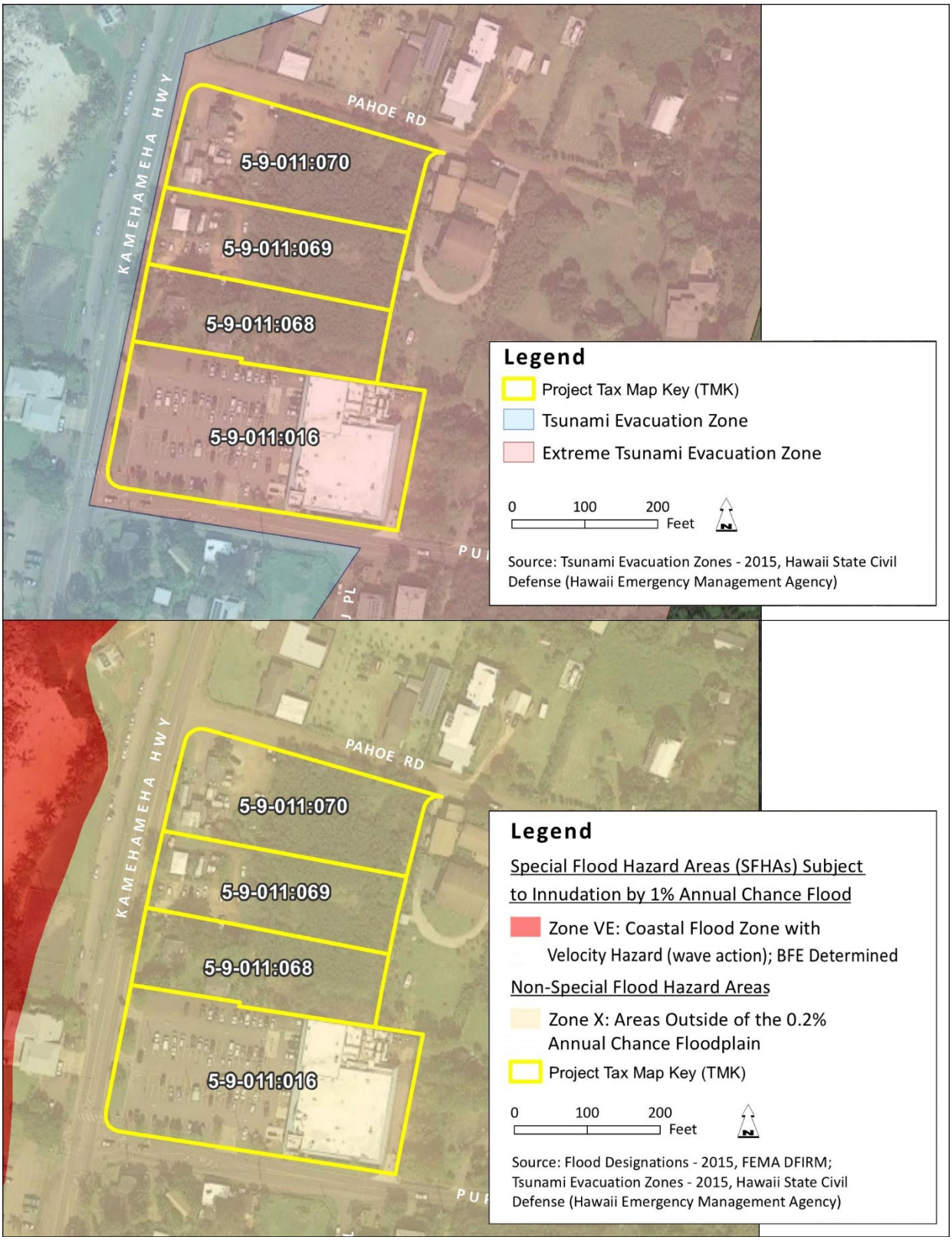


Figure 3-2 Flood and Tsunami Inundation Zones

The City and County of Honolulu has developed an additional tsunami evacuation zone in the extreme event of a very large earthquake and tsunami (Magnitude 9+). The boundaries are based on new seismic and inundation models developed by UH Researchers and the operational needs of First Responders and the Emergency Management Community. The rural center is located within the extreme tsunami evacuation zone (*Figure 3-2*).

3.3.2 Probable Impacts and Mitigation Measures

Hurricanes and Tropical Storms
Similar to other natural hazard events, the City and County of Honolulu has an emergency operations plan for evacuating potentially affected areas. The closest shelter to the rural center is located at Waialua Intermediate and High School.

Earthquakes
The project will cause no short-term or long-term impacts to the frequency or intensity of earthquakes in the vicinity or on the island of Oʻahu.

Flooding
With drainage controls, there will be no long-term effect to drainage or flooding conditions, as discussed in *Section 3.16*.

Tsunami Inundation
In general, all coastal areas of Oʻahu are vulnerable to impacts resulting from a tsunami. The rural center does not fall within the designated tsunami evacuation zone, but does lie within the extreme tsunami evacuation zone (*Figure 3-2*). Evacuation for the extreme tsunami evacuation zone would be announced via traditional emergency communication means including radio, television, email, text messages, etc.

The project will not change the existing tsunami inundation zone. The buildings will be a mix of one- to two-stories in height and will be set back from the lot line, which is shoreline, across the two-lane highway.

3.4 TERRESTRIAL FLORA AND FAUNA

3.4.1 Existing Conditions

The native environment of Hawaiʻi has been transformed by centuries of human habitation, beginning with the arrival of the Polynesian voyagers. The first human inhabitants brought subsistence plants aboard sailing canoes ("canoe plants") to provide food, cordage, fiber and medicines. The lowland, occupied areas were altered with the purposeful and accidental introduction of additional plants, rodents, and insects brought aboard ships of European explorers and traders. Landscape altering agriculture in the Pūpūkea area included ʻuala (sweet potato) cultivation by Hawaiians, followed by post-European contact era crops including avocado and pineapple, and transformation following the demise of large-scale agriculture throughout the North Shore region.

Two surveys were conducted to document current site conditions, one in September 2017 and a second in March 2018. The second survey was supplemental and conducted to ascertain whether any potential nesting habitat for seabirds occurred on or near the project area.

Flora

Biological surveys were conducted by AECOS, Inc. (April 2017) and entailed a pedestrian survey of plants on the property as well as review of previous botanical surveys in the region. Plant species were identified and recorded as encountered. Numerous plants have been introduced to the site over time for landscaping; no attempt was made to quantify abundances for these ornamental plants. The full report is included in *Appendix A*.

The undeveloped portion of the property is a secondary scrub forest dominated by koa haole (*Leucaena leucocephala*) or Guinea grass (*Megathyrus maximus*). Flora of the project site is comprised of a mix of alien, native, and ornamental species of trees, shrubs, grasses, and forbs, comprising 135 taxa in 56 families. Only nine of the 135 taxa are considered native, common, widely distributed species. The project site contains two species of early Polynesian introductions, ʻiliʻai (*Oxalis corniculata*) and kalo (*Calocasia esculenta*). A full species list in included in *Appendix A*. There are no rare or endangered plant species on the site, nor does the site provide any native habitat.

Mammals

The property provides typical urban habitat occupied by mammal species introduced to Oʻahu: cats, rodents, and mongoose. During the course of the surveys, three ~~A single pet~~ cats (*Felis catus*) ~~was~~ were observed on site. While no rodents were recorded during the survey, it is likely that some, if not all, of the four alien Muridae established in Hawaiʻi (roof rat, brown rat, black rat, and European house mouse), as well as the Small Indian Mongoose (*Herpestes a. auropunctatus*), inhabit the project vicinity. Each of these introduced mammals are deleterious to native ecosystems and native species.

The only native terrestrial mammal in Hawaiʻi is the endangered Hawaiian hoary bat, or opeʻapeʻa (*Lasiurus cinereus semotus*). While the ʻopeʻapeʻa had been considered extirpated on Molokaʻi and Oʻahu with breeding limited to the islands of Kauaʻi and Hawaiʻi, within the last 15 years this presumption was determined to be incorrect (Bonaccorso et al. 2015 in David 2018). ~~has been seen on Hawaiʻi, Maui, Molokaʻi, Oʻahu and Kauaʻi, it may only live on Hawaiʻi, Maui, and Kauaʻi. A large population might have lived on Oʻahu before the early 19th century, but it is based on a single observation of an unknown number of bats (USFWS 2017).~~ This species was not detected during the survey. Research by U.S. Geological Survey biologists and others reveals that the bat occurs and breeds on all of the main Hawaiian Islands with the exception of Niʻihau and Kahoʻolawe. The species roosts primarily in woody vegetation exceeding 15 feet in height. Methods to avoid impacts to bats are described in the following section. Given the low likelihood that these solitary, widely dispersed animals are in the area and the significant effort required to perform an adequate survey, none was conducted for this project.

Other fauna observed at the site included the Sonoran Carpenter Bee (*Zylocopa sonorina*), the Brown Anole (*Anolis sagrei*), and Green Anole (*Anolis carolinensis*). The current caretaker also reported that Jackson's Chameleons (*Chamaeleo jacksonii xantholophus*) are also present in the area. The Brown Anole, Green Anole, and Jackson's Chameleon are listed as injurious species in the State of Hawai'i.

The limited visual and auditory detection methods used to survey the area for terrestrial vertebrate and mammalian species, and survey results, are contained in *Appendix A*. No mammalian species currently protected or proposed for protection under the federal or State of Hawai'i endangered species programs were detected during the survey.

Avifauna

The birds observed in the project area are non-native, naturalized, urban dwelling birds, which is consistent with what would be expected in a highly disturbed area at this elevation on Oʻahu. Of ten

species observed on-site during the April 2017 survey, six species are considered injurious species—animals known to be harmful to agriculture, aquaculture, indigenous wildlife or plants, or to constitute a nuisance or health hazard. These birds include: Cattle Egret, Red-vented Bulbul, Red-whiskered Bulbul, Common Myna, Spotted Dove, and Japanese White-eye.

The supplemental avian and terrestrial mammal survey conducted in March 2018 specifically scouted the project area and the closest shoreline area for evidence of any previous seabird burrows or nesting. No such activity was detected at the project site or along the shoreline banks fronting Shark Cove Beach Park or the vicinity of the public restrooms and Fire Station #11-Sunset Beach. The shoreline area surveyed overlooks the ocean and is nearly 300 feet from the project site and separated by Kamehameha Highway to the west.

Survey methods and results of the avian count stations are contained in *Appendix A*.

3.4.2 Probable Impacts and Mitigation Measures

Flora

The rural center is not anticipated to result in a significant adverse impact on the site's plant resources, as the site does not contain native plant ecosystems or rare native plants. No plants on the federal Endangered Species list are present on the site, and none have been documented historically. Ornamental trees and shrubs on the property will be relocated off-site during construction, and some of these will be re-planted on site and incorporated into the landscaping.

Landscaping will include new plantings of native and non-native, non-invasive tropical species around the buildings and within the parking area. The plants include, but are not limited to, naupaka kahakai (*Scaevola taccada*), ti (*Cordylline fruticosa*), ʻilima papa (*Sida fallax)*, ʻakia (*Wikstroemia uva-ursi*), and monstera (*Monstera deliciosa*).

No mitigation measures are proposed for flora on the site. The rural center landscaping will include substantial new plantings of trees, shrubs and ground cover, including native plant species.

Fauna and Avifauna

The project is not anticipated to result in significant adverse impact on the site's fauna. Animals likely to inhabit the site are non-native introduced mammals that are known to be deleterious to native ecosystems and native species and are adaptable to a range of urban environments.

The following steps will be taken to minimize potential adverse effects to two species that could potentially overfly or utilize the area.

While it is within the realm of possibility that bats may forage above the project site on a seasonal basis, given the level of disturbance, activity, and the highly manicured trees on site, in the opinion of the avian biologist it is unlikely that a bat would roost within the project site (David 2018). Nonetheless, ~~S~~special care will be taken during construction and when trimming or clearing woody plants taller than 15 feet to minimize any potential adverse effects to the Hawaiian hoary bat (*Lasiurus cinereus semotus*). Between June 1 to September 15, woody vegetation and trees taller than 15 feet will not be disturbed.

No seabirds were detected during the survey, though it is possible that the endemic sub-species of Newell's Shearwater (*Puffinus auricularis newelli*), or ʻaʻo, over-fly the project site annually between April and the middle of December. ~~ʻAʻo are not known to breed on Oʻahu, though low numbers of birds through to possibly be ʻaʻo have been recorded flying over parts of Oʻahu by ornithological~~

~~radar.~~ The US Fish and Wildlife Service provided a comment on the Draft EIS that recent research utilizing audio recording technology has revealed that both Newell's Shearwater and the Hawaiian petrel may be nesting on Oʻahu (Chapter 6).

As noted in *Section 3.4.1 Existing Conditions*, a survey of the coastline in the general project area did not record any seabirds, or more importantly any evidence of previous seabird nesting in the area. The coastline between Shark Cove, south past the Sunset Beach Fire Station is an extremely busy area, with very little suitable ground cover for seabird nesting and no evidence that it has been used for burrowing in the recent past (David 2018). Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. The birds may collide with man-made structures and either killed outright or be injured, thus becoming easy prey for feral mammals.

The rural center will include shielded outdoor lights and fixtures in compliance with the State of Hawaiʻi Department of Land and Natural Resources Division of Forestry and Wildlife outdoor lighting guidelines. Illumination from artificial light will be limited to within the property boundary and be directed down to prevent uplighting and glare. On-site managers will be made aware of the need to watch for seabird fallout and to cooperate with relevant agencies to transfer injured birds to Sea Life Park.

There are no avian or mammalian species listed as state or federally endangered or threatened present on the site. The project is not expected to adversely impact fauna extant in the project vicinity. No federal Critical Habitat exists for any species on or adjacent to the project area. Thus, modification of the site will not affect federally designated species or impact any Critical Habitat.

3.5 GROUNDWATER

Groundwater is vital to the people and culture of Hawaiʻi, as well as to nearshore marine life and the economy. Groundwater eventually reaches the ocean, and a popular ocean access point, the City and County Pūpūkea Beach Park, is located across Kamehameha Highway from the rural center site. This recreational area is heavily utilized and is one of the premier snorkeling and shore-based SCUBA diving areas in the State of Hawaiʻi. This section documents existing groundwater conditions, potential water quality effects, and planned measures to minimize adverse effects.

Surface water quality is addressed in *Section 3.6 Surface Water and Drainage*. The marine environment and ocean water quality is discussed in *Section 3.7*. Water demand and the drainage system for the rural center is discussed under *Section 3.16 Infrastructure and Utilities*.

3.5.1 Existing Conditions

The Commission on Water Resource Management (CWRM) within the State Department of Land and Natural Resources is the primary steward of State water resources. CWRM has broad powers and responsibilities to protect and manage Hawaiʻi's water resources and administers the State Water Code (Hawaiʻi Revised Statutes Chapter 174C, 2008 amendment) and administrative rules. Other State agencies maintain responsibilities for water quality (Department of Health) and coastal zone management (Department of Business, Economic Development and Tourism).

A study of surface and groundwater resources was conducted by Tom Nance Water Resource Engineering (September 2017), and is included in *Appendix B*. The study examined the groundwater conditions directly beneath the project site, which reflect~~s~~ inputs by human activities ~~use throughout the upslope watershed~~ in the directly upgradient area. The study estimates groundwater inputs to

marine waters as a result of the project ~~in the vicinity of the project area, and documents existing groundwater quality~~. The groundwater quality results can serve as a benchmark against which potential changes can be compared. Simultaneous sampling of marine water was conducted by Marine Research Consultants, Inc. (MRCI) examines the interaction of groundwater and surface water within the nearshore marine waters (*Section 3.7 Marine Environment*).

Groundwater in the immediate project site area occurs as a thin basal lens for at least 1.5 miles inland from the coast. Water levels are on the order of two feet above mean sea level extending to approximately 2,000 feet inland, rising to approximately 3.7 feet above sea level at 6,500 to 7,000 feet from the shoreline. The groundwater is slightly brackish within several thousand feet from the shoreline (*Appendix B*). The most recent groundwater recharge calculation for the aquifer is 50 MGD, equivalent to 5.5 MGD per coastal mile (Engott et al. 2015 in *Appendix B*).

Regulatory and Regional Context

Groundwater units have been established by CWRM to manage groundwater resources. Primarily determined by subsurface conditions, each island is divided into regions that reflect hydrogeological similarities within hydrographic, topographic and historical boundaries. The 4.5-acre Rural Communities Commercial Center site lies within the CWRM-delineated Kawailoa Aquifer Unit, which encompasses 37.7 square miles including the 9-mile coastal segment from Waialua Bay to Kawela Bay (*Figure 3-3*). The Kawailoa Aquifer Unit is bounded on the south/southwest by the Anahulu River, on the east/northeast by the ridgeline of the Koʻolau mountains, and on the east/southeast by what is thought to be the makai limit of the Wahiawa high level aquifer inland (*Appendix B*).

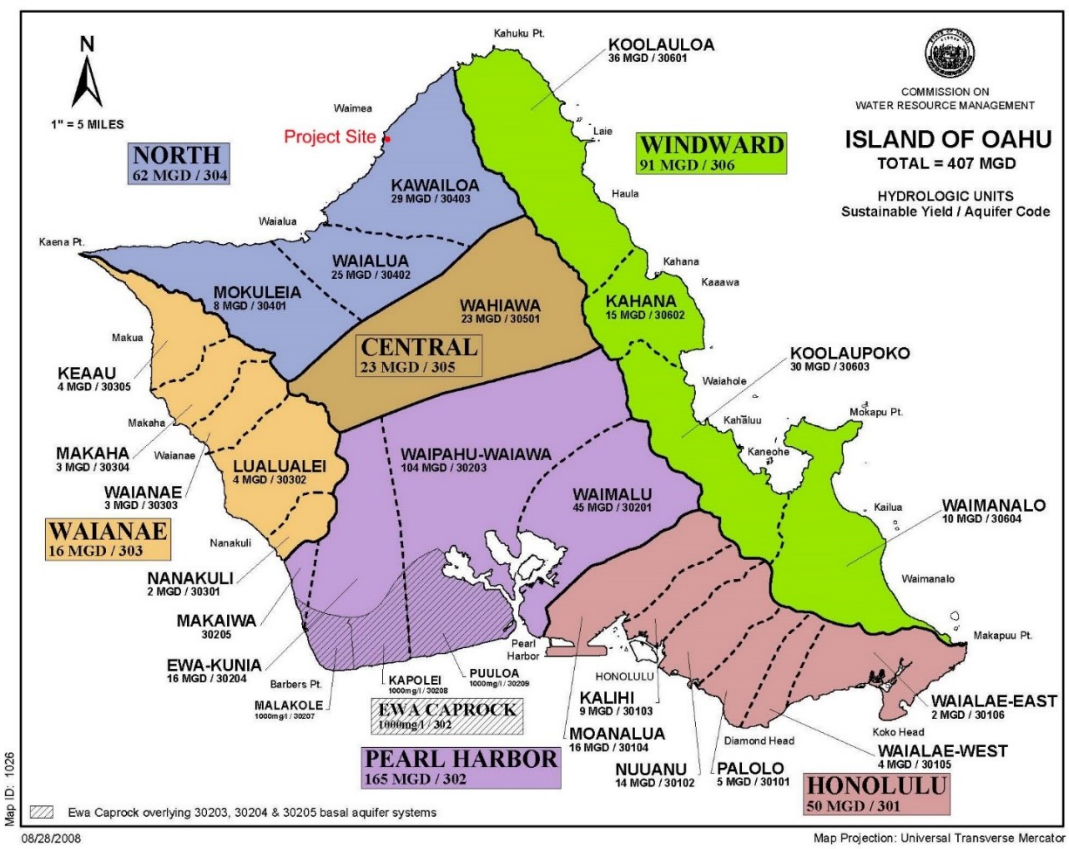


Figure 3-3 O'ahu Groundwater Hydrologic Units

CWRM has adopted 29 million gallons per day (MGD) as the sustainable yield of the Kawailoa Aquifer, based on rainfall-recharge on the order of 56 MGD. Sugar cane cultivation in previous decades was the largest user of groundwater from the Kawailoa Aquifer (CWRM 2008). The recorded 12-month moving average for the last decade of use (1986 to 1995) by Waialua Sugar Company was 5.7 MGD. Permits for current groundwater use through all active wells in the area now total 1.541 MGD, though the actual quantity pumped has been far less (*Appendix B*).

Drinking Water

Protection of groundwater is promulgated through Federal and State regulations. The mission of the DOH Safe Drinking Water Branch (SDWB) is to safeguard public health by protecting drinking water sources (surface water and groundwater) from contamination and assure owners and operators of public water systems provide safe drinking water to the community. SDWB administers three major programs: public water systems; underground injection control; and groundwater protection.

Section 3.16, Infrastructure and Utilities, briefly describes the water system to be designed for the rural center, and the required permits and associated regulation. Average water use at the site is estimated at 2,200 gallons per day with the current commercial uses (*Appendix B*).

Groundwater Conditions Beneath the Project Site

Two 100-foot deep monitoring wells were installed on site to sample groundwater conditions directly beneath the project site. Water quality samples both document existing conditions and provide a baseline for future monitoring. Well site B-1 is located toward the inland end of the site at about 45-foot elevation; well site B-7 is located closer to the makai end at about 37-foot elevation (*Appendix B*).

The subsurface soil profile described in *Section 3.2, Geology, Topography and Soils* identified the approximate groundwater depth, as groundwater resides entirely within the basalt material that underlies surface and subsurface soils. The inland monitoring well site, B-1, revealed slightly weathered to unweathered basalt lava flow and clinker from approximately 18 feet below surface to the bottom of the 100-foot well. At the B-7 site, below silty clay and coral and coralline sand and gravel, slightly weathered to unweathered layers of basalt are found from approximately 31-foot depth to the well bottom at 100 feet depth (*Appendix B*).

Connectivity of groundwater to ocean water examined through measurement of salinity, and of changes in water level compared to predicted ocean tide. Salinity profiles through the water columns within the monitoring wells were recorded on three different dates. For the first 30 feet into groundwater, salinity of both monitoring well sites are slightly brackish and essentially identical. Below that depth, the salinities increase with a very sharp salinity increase in B-7 at about 52 feet into groundwater. Results indicate that ocean saltwater underlies the site at depth (*Appendix B*).

Water levels were recorded in the monitoring wells in January 2017 and were compared to the predicted tide for Waialua Bay. Results show a strong tidal response at both well sites, with amplitudes on the order of one third to one half of the ocean's tidal amplitude. Further, the water level in the mauka (B-1) well is consistently 0.115 ± 0.032 feet higher than the makai (B-7) well. This shows a relatively steep gradient toward the shoreline of 0.00055 feet/feet (about 2.9 feet per mile), which is consistent with a rapid thinning of the basal lens as it nears its shoreline discharge.

Water quality samples were collected from each monitoring well in April and May 2017. Samples were analyzed for nitrogen, phosphorus, silica, and salinity levels to provide a benchmark of existing groundwater quality. Somewhat higher nitrogen levels in the downgradient well (B-7) may reflect

input from present use of the site (*Appendix B*). Marine water quality samples were taken on the same day to allow analysis of possible groundwater influence in the nearshore marine environment (discussed in *Section 3.7 Marine Environment*).

On-Site Disposal Systems

Wastewater effluent released to the environment can pose risks to human health and the environment. City sewer systems are limited to a small subdivision in the Waialua area, so nearly all North Shore businesses and residents utilize on-site disposal systems (OSDS). According to a 2009 study of OSDS, Pūpūkea, Sunset Beach has the second highest density of OSDS in Oʻahu communities with 123.3 units per square mile (Makiki/Lower Punchbowl/Tantalus has a higher density) and is ranked third on the island for total number of OSDS (following the adjacent region of Koʻolauloa, and the leeward community of ʻEwa).

OSDS range from cesspools, essentially a hole in the ground, to more sophisticated treatment that include aerobic treatment systems. Soil properties can filter pathogens and utilize or bind nutrients thus minimizing wastewater impacts, but the effectiveness varies with the soil type and condition. Hydrogeologic factors that influence the risk to the environment posed by OSDS include depth to the water table, groundwater recharge, and the volume of groundwater flow. The impact of OSDS impact on the water table is reduced by dilution due to recharge and mixing with un-impacted groundwater (Whittier and El Kadi 2009).

The site lies outside of the Honolulu Board of Water Supply No Pass zone, where installation of waste treatment facilities is allowed. Underground injection of wastewater is also permissible at the site, as it lies within the exempted area under HAR §11-23-05 (c) (*Section 3.16, Infrastructure and Utilities*). There are no existing injection wells on the parcels or on the adjacent Foodland parcel.

An on-site individual wastewater system (IWS) permitted under IWS 54311 is an aerobic treatment unit, one that aerobically decomposes organic matter over time. Aerobic treatment systems provide secondary or higher quality levels of treatment than a cesspool or septic tank. Wastewater effluent from the IWS is discharged into a DOH-approved disposal system. The wastewater flow from the existing on-site aerobic treatment system is estimated at 400 gpd (*Appendix B*).

The existing groundwater quality conditions at the site reflect the inputs from individual wastewater disposal systems serving the Pūpūkea and Sunset Beach community directly upgradient and by natural processes. *Figure 3-4* identifies the existing properties served by individual wastewater systems registered by DOH Wastewater Branch (WWB), located within a 3,000-foot wide mauka-makai corridor extending to the upper reach of the Pūpūkea Highlands subdivision. Over 500 wastewater systems are upgradient of the project site including 279 cesspools, plus 159 aerobic, septic, and soil treatment systems. Using a conservative estimate of 250 gpd of wastewater production per residence, the total wastewater volume being disposed daily through this 3,000-foot wide corridor is more than 100,000 gpd.

Using the average groundwater concentrations of nitrogen and phosphorus identified in the B-7 monitor well (1.24 mg/l for nitrogen and 0.111 mg/l phosphorus; *Appendix B*), the current discharge of nitrogen and phosphorus into the marine environment is estimated to be 8.16 pounds per day and 0.73 pounds per day, respectively. This assumes the groundwater flow from the watershed along the 560-feet of shoreline makai of the project area is 790,000 gpd, applying the Engott discharge rate of 5.5 MGD per coastal mile (*Appendix B*).

Nutrient levels in the groundwater ~~below Pūpūkea and Sunset Beach~~ beneath the project site also reflect contributions from other sources of nutrients released in the watershed, including fertilizer applied for agricultural and landscaping, along with agricultural and domestic animal waste. These nutrient inputs are not readily quantified yet add significantly to the overall groundwater nutrient loading. The ~~shallow~~ ground-water eventually discharges into the nearshore waters.

3.5.2 Probable Impacts and Mitigation Measures

The project is not anticipated to affect groundwater quantity or quality during the construction phase. Controls and best management practices (BMPs) will be used to comply with all State, County and Federal regulations related to potential erosion or storm water impacts, as described in the following *Section 3.6 Surface Water and Drainage*.

Planning guidance for water use from BWS (see *Section 3.16.2 Infrastructure: Probable Impacts and Mitigation Measures*) identifies an average daily water demand increase of 6,000 gpd, which includes water for landscape irrigation. Use of the water for the appropriately zoned, appropriately scaled business district would qualify as "reasonably beneficial" under the State Water Code, and the relatively small increase is well within the hydraulic capacity of the BWS system (*Appendix B*). Over the long-term, the water demand from the rural center is not anticipated to result in an adverse effect to the region's groundwater resources. No new supply source will be required for the project.

The existing on-site IWS aerobic treatment system will be removed. The new wastewater treatment system design will be approved by DOH WWB. No injection wells are proposed for the project wastewater disposal. The wastewater treatment system selected for the project will utilize secondary treatment processes including aerobic treatment to achieve the desired effluent quality and minimize potential impacts to groundwater. The project wastewater system is described in *Section 3.16 Infrastructure and Utilities*.

Estimated wastewater production at the site is estimated to increase by approximately 6,920 gpd (*Appendix B*). The existing wastewater system servicing the site will be removed and replaced with another aerobic treatment system sized for the increased demand. Nutrient removal projected from the new aerobic treatment system and subsequent percolation through the absorption beds and underlying soil vadose zone are conservatively estimated at 80 percent for nitrogen and 90 percent for phosphorus. This results in a residual concentration of 6.0 mg/l for nitrogen, and 0.90 mg/l for phosphorus from the treatment system.

The potential effect to shallow groundwater would be from added nutrients from the projected increase of 6,920 gpd wastewater from the rural center. The estimated increase in nitrogen could be 0.35 pounds per day, and the estimated increase in phosphorus could be 0.051 pounds per day, in addition to the existing nutrient to the marine environment from the entire watershed. The existing nutrient load from the watershed that discharges along the ~~560~~ 760-feet of shoreline makai of the project area is estimated as 8.16 pounds per day of nitrogen and 0.73 pounds per day of phosphorus. The incremental increase in nutrient contributions is calculated at 4 percent (nitrogen) and 7 percent (phosphorus) (*Appendix B*).

Figure 3-4 On-Site Wastewater Disposal Systems in Pūpūkea and Sunset Beach Communities

3.6 SURFACE WATER AND DRAINAGE

The Hawai'i State Water Code defines surface water as consisting of both contained surface water and diffused surface water. Contained surface water exists upon the surface of the earth in naturally or artificially created water bodies such as streams, man-made watercourses, lakes, reservoirs, and coastal waters. Surface water occurs in areas that, due to topographic slope, contribute to surface water drainage systems that typically manifest as streams or rivers. These drainage areas are confined by topographic divides and are generally referred to as watersheds.

This section presents the existing conditions and probable project impacts related to surface runoff and drainage system design to manage storm water for the rural community commercial center. Characterization of the nearshore marine environment and possible impacts from the project is discussed further in *Section 3.7, Marine Environment*.

Surface Water
The proposed project lies more than 200 feet across Kamehameha Highway from Pūpūkea Beach Park and Sharks Cove. There are no streams or wetlands on the site itself or adjacent areas, and the AECOS flora/fauna survey confirmed there are no federal jurisdictional waters located on the subject property. For this project site, the surface water is synonymous with storm water runoff, and discussed under Drainage.

Drainage
Storm water runoff is part of the natural hydrologic process. Human activities on land, such as urbanization and agriculture, can alter natural drainage patterns. Runoff from urban and agricultural areas can introduce sediments, nutrients, pathogens, and toxic chemicals to storm water runoff. Federal, State and County regulations require that receiving waters be protected from pollutants associated with land disturbance, surface hardening and land use activities using implementation and maintenance of BMPs. Pollutants of concern include sediment, nutrients, trash, pathogens, pesticides, oil, grease, hazardous and toxic waste, metals and organic compounds.

3.6.1 Existing Conditions

The parcel elevation descends slightly from 51 to 29 feet above mean sea level (mauka to makai) at approximately 5 percent slope. Storm water on the uppermost section of the parcels will collect across either vegetated or unvegetated areas and travel downslope across asphalt concrete pavement and a variety of vegetated and unvegetated area. Swales constructed of stone and gravel ~~have been~~ are being installed in key areas to intercept and slow sheet flow, and to direct storm water to rain gardens and prompt infiltration to soils. Storm water not captured travels offsite to the nearest drain inlet south of the project along Kamehameha Highway. The storm drain system is owned and maintained by the State of Hawai'i Department of Transportation (HDOT), Highways Division ~~(DOT-HI).~~

Storm water runoff from the parking lot enters the drain inlet and passes under Kamehameha Highway in a 24-inch pipe and outlets to the Pacific Ocean. Offsite and to the south, additional catch basins collect storm water runoff from Pūpūkea Road and the Pūpūkea Gardens subdivision. This County-owned system conveys storm water under and along Kamehameha Highway, where it ultimately discharges to the ocean.

State Water Pollution Control rules (HAR §11-55) require a National Pollutant Discharge Elimination System (NPDES) permit for storm water discharge for construction. For discharge of storm water that ultimately could reach sensitive water bodies e.g. designated Class AA marine or Class 1 inland State waters, or those restricted under the State's "No Discharge" policies, an individual NPDES permit is required. Erosion control measures, as described in *Section 3.2, Geology, Topography and Soils*, and a site-specific construction best management practices (BMP) plan, required by DOH Clean Water Branch (CWB), are initial steps to reduce possible impacts.

Recently enacted Water Quality Rules to reduce the pollution associated with storm water runoff (HAR §20-3) specify new development and redevelopment projects include low impact development (LID) site design strategies, source control BMPs, and post-construction treatment control BMPs. For projects including restaurants and parking lots with 20 or more stalls, and 5,000 square feet or more impervious area (defined as "Priority B1" projects), the rules require: retain as much of the storm water volume on-site by infiltration, evapotranspiration or harvest/reuse as feasible using appropriate LID retention post-construction treatment control BMPs, and biofilter the remaining portion that is not retained on-site with appropriate post-construction treatment controls as much as feasible.

3.6.2 Probable Impacts and Mitigation Measures

The project will increase impermeable surfaces on the site through the addition of rooftops, photovoltaic canopies and impermeable pavement. The system for collection and routing of storm water runoff for the project is described in *Section 3.16 Infrastructure and Utilities*, and consist of drains, gutters, and subsurface detention chambers. The planning and design process for the project has focused on eliminating or reducing the amount of storm water runoff that may require treatment prior to leaving the site ("source control"), as well as identifying options to treat remaining storm water before discharge to off-site storm drain system ("treatment control").

Short-term construction impacts will be managed and minimized using BMPs and will meet or exceed the NPDES construction storm water permit requirements and building permit conditions. BMPs to minimize soil erosion are described in *Section 3.2.2, Probable Impacts: Geology, Topography and Soils*. Additional protections for surface water runoff during the construction phase include material management, waste management, vehicle and equipment management, general site practices, and good housekeeping practices. Specific methods to be used for the rural community commercial center site will be detailed in a Storm Water Pollution Protection Plan (SWPPP) or Site-Specific BMP Plan and reviewed as part of the construction permit process by DOH and the City and County of Honolulu DPP.

Materials management during construction will apply to both delivery and storage of materials on site. Areas will be designated for different materials, with earth berms or containment measures used as needed to prevent storm water run-on. Use and storage of materials that may be hazardous (e.g. solvents, paints, binders) will be according to label directions, regulations, and best practices. Stockpiled construction materials (e.g. soil, aggregate) will be covered to protect material from rain; bagged materials will be on pallets and covered. Silt fence, fiber filtration tubes or other appropriate protection will be used as needed. Construction waste and debris will be separated to allow reuse or recycled offsite where possible, and any potentially hazardous materials will be disposed of properly. Portable toilets on site during construction will be maintained in good working order by a licensed service provider, and regular waste collection scheduled by a licensed transporter.

Spill prevention and control plans and cleanup materials will be readily available during the construction phase. Dust control will be conducted as described in *Section 3.2.2 Probable Impacts: Geology, Topography and Soils* and *Section 3.14.2, Probable Impacts: Air Quality*.

No significant adverse short-term impacts to surface waters are anticipated during the construction phase. Potential impacts will be minimized and mitigated to the maximum extent practicable by implementation and management of BMPs. Site conditions will be monitored as required by the NPDES permit. Controls and checks will be in place to ensure compliance with permit requirements.

Long-term management of storm water will comply with the recently enacted City and County Water Quality Rules. Methods include installation of LID post-construction treatment controls to retain as much storm water on the site through infiltration as feasible, and to filter and treat storm water released off site to the maximum extent practicable, as further described in the following section. A Storm Water Quality Report for the project will be submitted with the construction plans to be approved by the City. The report must be prepared by a Certified Water Pollution Plan Preparer licensed in the State of Hawai'i and will clearly set forth the means and methods for permanent BMPs to be installed for long-term storm water quality protection and include a maintenance plan. Maintenance records for permanent BMPs must be maintained for a minimum of five years and are to be made available to the City's Department of Facility Maintenance (DFM) upon request. Additionally, BMPs are subject to inspection by DFM annually.

The Water Quality Rules (HAR §20-3) require source controls for a variety of areas within a development; controls applicable to the rural community commercial center apply to landscaped areas, automatic irrigation systems, storm drain inlets, outdoor trash storage and parking areas. Automatic irrigation will be programed to deliver a calibrated amount of water to ensure minimal runoff. The trash storage area will be paved with impervious materials and located away from storm drains; the storage area will be designed to prevent storm water run-on to the area. Trash containers will be covered to prevent rainfall from entering. The parking area will be paved to direct runoff towards rain gardens, vegetated and landscaped areas. Landscaped areas provide for biofiltration of storm water runoff (see following).

Permanent BMP controls are those LID features to be installed on the site and include bioswales, rain gardens, planter boxes, sand filters, and permeable paving material. Collectively referred to as biofilters, vegetated swales, filter strips, and engineered biofiltration devices such as planter boxes are used to both slow and spread the runoff to direct it over vegetation where sediments and particulates can be filtered and degraded through biological activities within soil. Biofiltration also allows storm water to infiltrate, that is to soak into the ground, thus reducing the quantity. Permeable pavement will be used for the transient use/parking area mauka of the central green, which will reduce and dissipate sheet flow and allow infiltration of storm water (*Figure 3-5*).

Swales to be incorporated into the site include tiered, vegetated areas on sloped areas, and grassed areas, including the central green and landscaping along the makai edge of the parcels. Sand filters will take the form of decorative rock areas makai of the ocean sports building and will speed infiltration of storm water into the ground and detention chambers.

Subsurface detention chambers at the makai edge of the property will retain storm water on site and allow sediment to settle before discharge to the existing drainage system along Kamehameha Highway (*Figure 3.5*). The existing storm drain system along Kamehameha Highway will continue to accommodate the storm water discharge from the site, as the discharge from the rural center's

system will be at a quantity and flow rate equal to or less than the existing flow (see *Section 3.16.2 Probable Impacts and Mitigation Measures: Infrastructure; Post-Construction Drainage)*.

The enhancements and additions to the drainage system will reduce surface water volume from the subject parcels. The installation of LID BMPs, including subsurface storm water detention on the three parcels will substantially reduce the suspended and bedload sediment that is currently carried into the marine environments by surface runoff. The detention storage will also reduce both the volume and flow rate of storm water from the parcels. For more frequent, small storm events with rainfall amounts of up to four inches, all of the runoff would be retained in the detention storage system and eventually percolate back to groundwater (see *Section 3.16.2 Probable Impacts and Mitigation Measures: Infrastructure; Post-Construction Drainage)*. This process of percolation and the subsequent lateral transport to ultimate discharge will significantly reduce nitrogen and phosphorus concentrations by denitrification and absorption processes. Overall, the rural center's drainage system will have a significant environmental benefit in comparison the present use of the subject parcels (*Appendix B*).

No significant long-term adverse impacts to surface waters are anticipated from the project. New stringent regulations by the City and County of Honolulu will be adhered to, and sediments and pollutants from storm water will be removed through the on-site permanent BMPs.

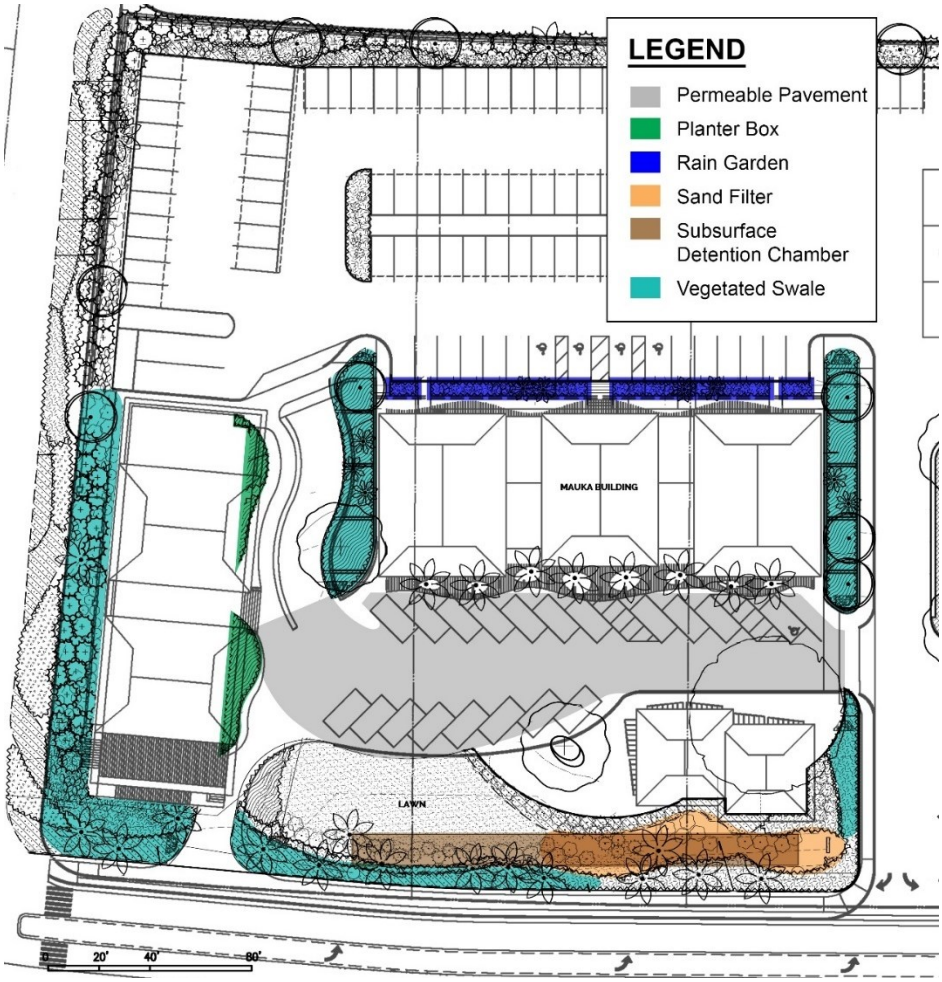


Figure 3-5 Low Impact Development Features for Storm Water Control (*Revised graphic*)

3.7 MARINE ENVIRONMENT

3.7.1 Existing Conditions

Water Quality

The DOH Clean Water Branch is the primary State agency that enforces the federal Clean Water Act (CWA), which was enacted to ensure the nation's waters are "fishable and swimmable." Among its duties, the CWB monitors inland and marine waters for bacteria, nutrients, and biogeochemical parameters (including chlorophyll *a*, total suspended solids (TSS), and turbidity) for comparison to numeric water quality criteria established for various water bodies within the State (e.g. inland fresh waters, marine coastal, embayment). Hawai'i Administrative Rules (HAR) Chapter §11-54 Water Quality Standards documents numeric criteria for different waterbodies dependent on designated use.

In compliance with the federal BEACH Act, CWB monitors marine waters used for recreation. The water quality criteria for all recreational waters in the State is based on the indicator bacteria *Enterococcus* and is expressed in colony forming units (CFU) or as a most probably number (MPN) per 100 milliliters (mL) dependent on the analytical method used. The *Enterococcus* threshold as defined in the 2014 revision of HAR §11-54-8 shall not exceed a geometric mean of 35 CFU per 100 mL over any 30-day period. In addition, a Statistical Threshold Value (STV) of 130 CFU or MPN per 100 mL may not be exceeded by more than ten percent of samples taken within the same 30-day period (DOH CWB 2017a). This level is consistent with the federal threshold and is determined to protect the public from exposure to harmful levels of pathogens while participating in water-contact activities. If there is an exceedance in the level of enterococci above the specified threshold, the CWB notifies the public of these exceedances and provides specific actions that they should take to protect their health.

Due to limited resources, CWB is unable to monitor all beaches in the state. Beaches are ranked by priority level, or "tiers" based on the frequency of use, accessibility, available facilities such as showers and restrooms, and sources such as lifeguards to determine daily beach user counts. Tier 1 beaches are considered "core" beaches and are ranked as such because of their economic and social importance to the state. Tier 1 beaches are heavily used and may be threatened by some type of pollution. These beaches are given the highest monitoring priority. Tier 2 beaches are less heavily used than Tier 1 beaches. Tier 2 beaches are not currently monitored on a routine basis due to resource constraints, though infrequent monitoring may occur as resources permit (DOH CWB 2017a).

Pūpūkea Sharks Cove is not identified as a Tier 1 or Tier 2 beach by CWB and is not routinely monitored. However, a total of twelve samples are recorded in the CWB Water Quality Data between March 2006 and May 2009. The collection point is south of Pūpūkea Beach Park near Kalua-Māua (Three Tables) and shows no exceedance of enterococci. Data on water chemistry (nutrients) has not been recorded at the site by CWB, though some biogeochemical factors are documented with the bacteriological data.

To provide a comprehensive and accurate depiction of the marine conditions down-gradient of the project site at Pūpūkea Beach Park/Sharks Cove, a marine survey was conducted for this EIS. Water quality constituents evaluated focused on the specific nutrient and biogeochemical elements in HAR §11-54-6 Water Quality Standards for open coastal waters: total nitrogen (TN); nitrate + nitrite

nitrogen (NO_{3-} + NO_{2-}, hereafter referred to as NO_3^-); ammonium nitrogen (NH_4^+); total phosphorus (TP); Chlorophyll a (Chl *a*); and turbidity, temperature, pH and salinity. Orthophosphate phosphorus (PO_4^{-3}) and silica (Si) were also reported as these parameters are sensitive indicators of biological activity and the degree of groundwater mixing. The five sampling transects are shown in *Figure 3-6*. Transect 5, located to the southern end of the area serves as a control that should be beyond the influence of the project area.

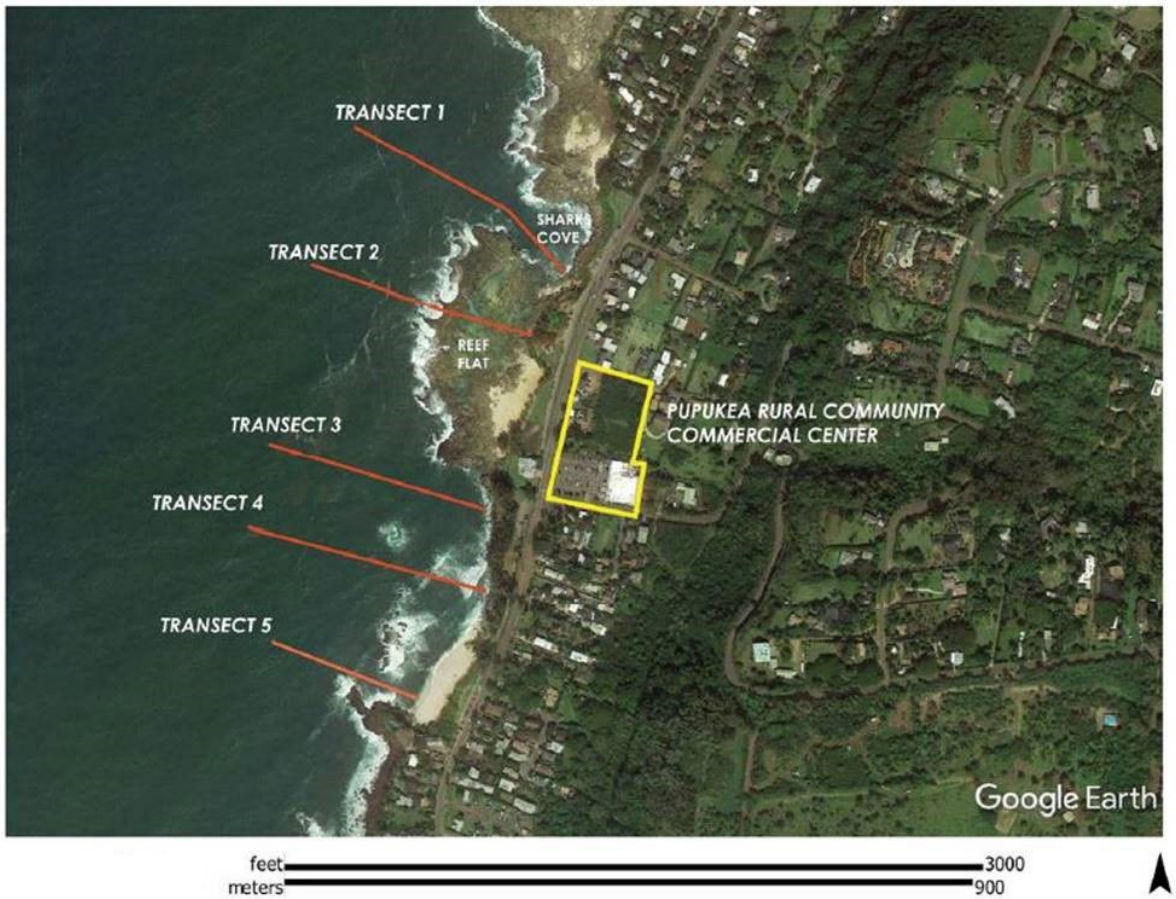


Figure 3-6 Marine Water Quality Sampling Transects

Results of the water chemistry samples collected along the transects indicate the greatest peak in nutrients and lowest salinity of shoreline samples occurred at Transects 1 and 2 located at Sharks Cove. The pattern of increasing salinity and decreasing nutrient concentrations with distance from shore result from concentrated input of groundwater to the ocean at or near the shoreline throughout the region across Kamehameha Highway from the proposed site. No rainfall or surface drainage was occurring during the sampling. Groundwater is lower in salinity, and typically contains high concentrations of silica (Si), nitrate + nitrite nitrogen (NO_3^-) and orthophosphate phosphorus (PO_4^3), which percolate to the ocean at the shoreline. This results in a nearshore mixing zone and can result in steep horizontal gradients of increasing salinity and decreasing nutrients with distance from shore.

As identified in *Section 3.5.1 Groundwater,* nitrogen and phosphorus discharges into the marine environment from the mauka watershed are estimated at 8.16 and 0.73 pounds daily, respectively.

The total groundwater flow along the 560-feet shoreline makai of the project area is estimated at 790,000 gpd (*Appendix B*). With dispersion, the flow potentially affects a 760-foot span of coastline.

The open coastal waters offshore of Pūpūkea Beach Park and in the Pūpūkea MLCD are categorized as Class AA under State Water Quality Standards under in HAR §11-54-6(b). The objective of Class AA waters is to remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alternation of water quality from any human-caused source or actions. The coastal waters beyond the MLCD are considered Class A marine waters, which are to be protected for recreational purposes and aesthetic enjoyment. Other uses are permitted as long as they are compatible with protection and propagation of marine biota and recreation.

The water chemistry results can provide a baseline against which future water quality can be measured. A summary of the initial sampling is shown in *Table 3-1* and the complete table is contained in *Appendix C*. It should be understood these samples represent a single monitoring event. Comparison of the results to the HAR criteria for the more stringent "wet" criteria within the open coastal water shows the existing water quality ~~exceedance~~ exceeds ~~of~~ the standards for NO_3^- and NH_4^+ along transects 1 and 2 within 100 meters from shore (*Figure 3-6*). It is important to note these samples were taken from waters confined by, or on, the Sharks Cove interior reef flat zone~~ in the vicinity~~, which ~~are~~ is not truly "open coastal waters," that is, beyond the influence of land. Total nitrogen within two feet of the shoreline along of Transect 2 ~~was~~ also exceeded the water quality standards; chlorophyll *a* within 1 foot of the shore also exceeded the HAR standard at ~~for~~ both Transect 1 and 2 ~~exceeded the HAR standard~~. For waters ~~B~~beyond the Sharks Cove interior reef flat zone, none of the constituents exceeded the more conservative "wet" criteria standard. Additional detail regarding water quality is included in *Appendix C*.

Marine Managed Areas

Established in 1983, the Pūpūkea Marine Life Conservation District (MLCD) was added to State of Hawai'i MLCD network. MLCDs are intended to conserve and replenish marine resources, and to allow fish and other aquatic life protected areas in which to grow and reproduce. MLCDs allow only limited fishing and gathering; some MLCDs restrict consumptive uses entirely. HAR §13-34, Pūpūkea Marine Life Conservation District, O'ahu, defines the prohibited and permitted activities for Pūpūkea MLCD. In Waimea Bay, limited fishing with hook and line, and capture of akule with legal nets during specific months, are allowed. Collection of a limited amount of specific types of seaweed (limu) by hand harvesting, leaving the holdfast and roots in place, is allowed throughout the MCLD. No hook and line fishing is allowed in the Pūpūkea (Sharks Cove) and Kalua-Māua (Three Tables) areas. Collection of sand, coral, sea shells, opihi or other marine life or eggs is prohibited.

Pūpūkea MLCD lies within the boundaries of the Hawaiian Islands Humpback Whale National Marine Sanctuary, which stretches from Pua'ena Point westward around the coast. The Sanctuary was created by Congress in 1992 to protect humpback whales and their habitat in Hawai'i and includes some of the shallow (less than 600 feet) waters surrounding the main Hawaiian Islands.

Nearshore Marine Environment

Biotic community structure of the marine environment was qualitatively assessed as part of the marine survey for this EIS. Reconnaissance swims were conducted along each of the survey from the shoreline to a water depth of approximately 40 feet (*Figure 3-6*). Notes were made regarding the physical structure and marine species abundance, and photographs were taken of typical features of all habitats to provide a descriptive representation of the area fronting the project site (*Appendix C*).

Table 3-1 Water Quality Results from Five Marine Transects as Sampled by MRCI in May 2017

Samples at the Shoreline

Transect No.	Forms of Nitrogen (µM)				Forms of Phosphorus (µM)			Silica (µM)	Salinity (PPT)
	NO_3	NH_4	TON	TN	PO_4	TOP	TP		
1	8.11	1.32	13.68	23.11	0.14	0.32	0.46	83.9	30.24
2	16.29	2.57	11.13	29.99	0.41	0.24	0.65	157	27.38
3	1.44	0.25	7.79	9.48	0.18	0.18	0.36	53.6	32.76
4	0.60	0.39	5.48	6.47	0.16	0.19	0.35	25.9	33.81
5	0.32	0.29	8.61	9.22	0.13	0.20	0.33	11.0	34.34

Samples Offshore (at the Surface)

Transect No.	Forms of Nitrogen (µM)				Forms of Phosphorus (µM)			Silica (µM)	Salinity (PPT)
	NO_3	NH_4	TON	TN	PO_4	TOP	TP		
1	0.55	0.53	7.36	8.44	0.14	0.19	0.33	13.9	34.59
2	0.28	0.33	7.56	8.17	0.12	0.18	0.30	5.55	34.67
3	0.10	0.43	5.87	6.40	0.12	0.23	0.35	8.00	34.67
4	BDL	0.24	5.26	5.50	0.10	0.23	0.33	3.69	34.74
5	0.09	0.53	5.81	6.43	0.13	0.23	0.36	5.67	34.68
Median	0.10	0.43	5.87	6.43	0.12	0.23	0.33	5.67	34.67

Notes: 1. Samples taken by Marine Research Consultants on May 17, 2107.
2. Water quality analysis by Marine Analytical Specialists.
3. Results in micro-molar (µM) can be converted to milligrams per liter (MG/L) by multiplying by the atomic weight and dividing by 1000.

As with all reef communities in Hawaii, biotic composition, particularly in terms of coral assemblages are primarily determined by physical forces (primarily wave energy) that impact the area. As the Pūpūkea area is mostly an open coastal area directly exposed to long-period north and northwest swells during the winter months, the response to these forces is clearly reflected in physical composition and coral community structure. As reef building corals are of primary interest, most of the following discussion focuses on the structure of reef coral communities.

The physical and biotic composition found along transects 1, 3, 4 and 5 are similar. Three distinct biotopes are found (areas of uniform environmental conditions that provide a living place for a specific assemblage of plants and animals). The inner region, extending from the inner shoreline of Sharks Cove to a distance of approximately 165 feet (50 m) offshore, is composed primarily of large boulders interspersed with rubble and sand channels. As this shallow area is regularly impacted by large waves during the winter, attached and unattached organisms are rare. The only stony coral observed on the nearshore boulders was *Pocillopora meandrina*, a "pioneering species" that can

colonize areas that are too physically harsh for most other species. The only other common benthic species seen was the soft octocoral *Sarcothelia edmondsoni*, which occurs as flat, purple patches on the upper surfaces of boulders.

A second zone identified along Transect 1 is the solid limestone (calcium carbonate) bench with erosional features that create a unique region of the highest rugosity (vertical relief) on the reef. Corals are relative scarce, with *Pocillopora meandrina* the primary occupant, along with small flat encrustations of *Porites* spp. and *Montipora* spp. The third zone occurs approximately 330 feet (100 m) from shore, where a sharp boundary in the form of a vertical scarp between the high rugosity zone and the outer reef platform occurs. The outer reef platform, which is also formed from an eroded fossil reef, consists of a relatively flat bench without the erosional features of the high rugosity zone. As with the inner biotope zones, coral colonization of the reef platform is restricted to hemispherical branching colonies of *Pocillopora meandrina*, and small colonies of corals that have flat encrusting or sturdy lobate growth forms (primarily *Porites*, *Montipora*, *Leptastrea* and *Pavona*). *Appendix C* contains photographs of all coral species observed during the marine survey conducted for this EIS.

Transect 2 differs in overall structure from the rest of the survey area in that it encompasses an area of shallow tidepools interspersed throughout a boulder covered raised platform. The raised platform is within the intertidal zone, so the size of the tide pools varies as a function of tide. Biotic colonization of the floor of the tidepools is limited with little coral cover, likely due to extreme temperature and exposure to the atmosphere at low tidal stands. At the seaward boundary of the tidepools, small encrusting corals occur on the vertical surface. The sea urchin *Echinometra matheai*, which bores into limestone surfaces, occurs abundantly on the walls of the tidepools. On the seaward side of the tidepools, the structure of the marine habitats is similar to the outer reef platform. No extensive benthic alga growth or seagrass were observed in any of the survey areas. Observations of reef fish revealed several large schools of *Kuhlia sandvicensis* (ʻāhole) and mixed *Acanthurids* in the nearshore zones. On the outer reef zones, reef fish were not overly abundant.

In summary, the benthic communities across the highway from the proposed Pūpūkea Rural Community Commercial Center have developed primarily in response to the physical forces associated with seasonal large surf. The exception is within the network of tidepools adjacent to Sharks Cove, where biotic composition is limited by high temperature from solar heating, and exposure to the atmosphere during low tides. Between these extreme physical stresses, all biotic communities within the area can be viewed as limited by physical control compared to other areas in the Hawaiian Islands (*Appendix C*).

3.7.2 Probable Impacts and Mitigation Measures

Water Quality

Table 3-1 and analyses contained in *Appendix C* indicate that the concentrations of total nitrogen (TN) in groundwater at the point of discharge along the shoreline range from a peak of 30 µM at Transect 2 to a low of 6.5 µM at Transect 4. The corresponding concentrations of total phosphorus (TP) are 0.66 µM at Transect 2 and 0.35 µM at Transects 4 and 5. Increasing the concentration of TN at the shoreline by 4.3 percent from existing conditions would result in a maximum value of about 31.3 µM and a minimum of 6.8 µM. Correspondingly, an increase in TP of 7.0 percent from the project would result in maximum and minimum values at the shoreline of 0.71 µM and 0.37 µM, respectively. These small changes peak at about 1.3 µM for TN and 0.05 µM for TP and are likely within the natural variability of the groundwater discharge at the shoreline, and do not represent a significant change in the composition of groundwater released along this shoreline ~~such discharge~~ (*Appendix C*).

Further, the concentrations of all nutrients drop from the peak values at the shoreline to essentially constant open coastal ocean values across the rest of the reef tract. These steep declines are the result of rapid mixing and dilution of the relatively small amount of groundwater discharging at the shoreline with large volumes of coastal ocean water. The small increases in groundwater nutrient concentrations attributable to the project would be mixed to background ocean levels in a narrow zone near the shoreline that is essentially devoid of benthic biota owing to other physical factors, primarily wave energy, which occurs regularly throughout the area.

No short-term or long-term impacts to marine water quality are anticipated from the project. The projected increase in nutrients from groundwater would likely be undetectable in the marine environment at distances from the shoreline where marine communities occur. As described in *Section 3.5, Groundwater*, nutrient input to the nearshore waters likely originate from the extensive network of existing on-site disposal systems upgradient from the project site. The minor inputs from the proposed project's wastewater treatment system will not be significant.

Nearshore Marine Environment

No short- or long-term impacts to the nearshore marine environment are anticipated from the project for the reasons described above. Strict on-site controls to reduce sediment and pollutants and protect surface waters and the downgradient marine waters are described in *Section 3.6, Surface Water and Drainage*.

3.8 CULTURAL RESOURCES

Consideration of a proposed project's effects on cultural practices and resources is part of the State environmental review and seeks to assess traditional cultural practices as well as resources of the project area within the ahupuaʻa. Keala Pono Archaeological Consulting conducted background research and an ethnographic survey consisting of interviews with three community members knowledgeable about the area. Consultation with community members provided information about cultural significance of the parcels and of Pūpūkea as a whole. Full transcripts of the interviews can be found in the June 2017 Cultural Impact Assessment (CIA) contained in Appendix D.

The island of Oʻahu is divided into six moku o loko (traditional land districts): Kona, Koʻolaupoko, Koʻolauloa, Waialua, Waiʻanae, and ʻEwa. These moku are subdivided into smaller traditional land tracts called ahupuaʻa, wherein the composition and qualitative yield of mauka (upland) and makai (coastal) resources vary. The ahupuaʻa of Pūpūkea is located in the moku of Koʻolauloa (*Figure 3-7*).

3.8.1 Existing Conditions

Place Names and Moʻolelo

The traditional place name for Pūpūkea translates to "white shell." However, Pūpūkea has taken on other nicknames for its beaches such as Sharks Cove. Several moʻolelo pertaining to Pūpūkea include accounts of the goddess Hiʻiaka and her encounter with a fisherman named Piliaʻama of Pūpūkea, reports of significant stones (one of which was what remained of a man enamored by an aliʻi woman, and the other which represents a woman who was a great fisher), and the history of Puʻu o Mahuka Heiau.

Figure 3-7 Historical Moku and Ahupuaʻa Boundary Map

Pre-Contact Land Use and Historic Period Development

Pūpūkea was most likely a historical fishing area, which supported coastal resources and dryland agriculture. The first Western account mentioning Pūpūkea was written by Captain Charles Clerke and James King, who sailed around the north shore of Oʻahu in 1779. Both accounts note the verdant qualities of expansive countryside with rivers running through the deep valleys. In 1792, George Vancouver's ship anchored off the coast of Waimea. When three men ventured inland in Waimea Valley, they were beaten to death by tattooed men and possibly taken to Puʻu o Mahuka Heiau.

Post European contact, the project area and the greater ahupuaʻa of Pūpūkea underwent rapid transformation with modern agriculture and residential development. With the introduction of the Organic Act in 1845, the traditional land tenure system underwent major transformations leading the Māhele system. This new system privatized lands in Hawaiʻi, and required Hawaiians, commoners, and royalty to submit claims to their lands.

In 1846, land titles known as Crown Lands were distributed to the crown (Hawaiian government) and the aliʻi. In 1850, a second Māhele allowed commoners and others who could prove their residency, to claim their lands. Historical maps and information indicate that there were no Land Commission Awards (LCAs) made within the project area or within the immediate vicinity of the project.

1900- the Mid 1900s

With the railroad as the main focus of economic activity on Oʻahu in the early 1900s, farming in Pūpūkea became profitable, with crops being transported on the rail to central markets across Oʻahu. Avocado crops were particularly lucrative, with approximately 400 acres of avocado trees in Pūpūkea planted and owned by Frederick Haley, Sr in the early 1900s. After the land was sold, pineapple became the next profitable crop of the area, with pineapple plantations in Pūpūkea being founded as early as 1919.

Community Consultation, Ethnographic Interviews

No existing cultural resources or practices were identified for the parcels themselves by the community member knowledgeable with the area. Salt collecting and limu gathering were mentioned for the coastal region across the highway from the project area. One of the themes in the ethnographic interviews includes the recent history of Pūpūkea with mention of Niimi Store, built in the project area in the early 1900s, and its role as a central store for the North Shore. Other themes included the natural environment and the previous existence of fresh water streams in Pūpūkea and the coral-algaenous structures of the coast.

Several potential concerns were expressed by the interviewees related to the rural center include these points: giving back to the community; properly caring for wastewater and solid waste streams to prevent pollution; traffic congestion and parking provisions at the site; informing the public about the details of the plan including square footage and the types of businesses; and informing the public about the road improvements for the area.

Some of the interviewees made recommendations of potential measures to mitigate potential effects of the rural center. The recommendation include: provide Hawaiian and local residents with first chance for jobs at the center; involve the community through dialogue before businesses are chosen for the rural center; improve the parking plan; foster a greater Hawaiian sense of place and presence; acknowledge the piko families of the area; and to be respectful of the native Hawaiian language, and encourage its use in a correct manner.

3.8.2 Probable Impacts and Mitigation Measures

Chapter 3 of this EIS describes the measures to be incorporated to minimize effects to the environment. The rural center will not impact cultural resources or traditional practices in the region. Design elements to be incorporated into the rural center include integration of native plants. A central green will become a community gathering place, and a venue for hula, music and "talk story."

3.9 ARCHAEOLOGICAL AND HISTORIC RESOURCES

The rural center is subject to a historic preservation review by the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD) under HRS Chapter 6E and HAR Chapter §13-284. Keala Pono Archaeological Consulting, LLC (Keala Pono) conducted an Archaeological Inventory Survey (May 2017), which is included as *Appendix E*.

3.9.1 Existing Conditions

Previous Archaeology
Several significant archaeological studies have been conducted in the Pūpūkea region. The closest archaeological findings of significance are located over a mile to the north of the project site. Details of the archaeological studies conducted over the past decades are contained in *Appendix E*.

Methods and Summary of Findings
To examine the project site, a pedestrian transect survey was conducted (October 2016) over 100 percent of the three parcels. Eleven test trenches approved by SHPD were also excavated at the project site. Profiles were drawn and photographed, and sediments were described using Munsell soil color charts and a sediment texture flowchart.

The pedestrian survey yielded no findings. The entire project area has been disturbed by previous activity, such as bulldozing and paving. Subsurface testing did not identify any subsurface cultural deposits or features. Stratigraphy consisted of colluvial deposit, sometimes with fill layers or modern pavements above.

No archaeological features were found in the survey. The "negative findings" the AIS resulted in an Archaeological Assessment (AA) report. SHPD issued a letter (August 2017) to acknowledge the AIS acceptance in accordance with HAR §13-276-5. SHPD further concurred that no further archaeological work was required.

3.9.2 Probable Impacts and Mitigation Measures

The development of the rural center is not anticipated to affect archaeological resources. There is the potential that cultural material or human remains may be inadvertently discovered during construction activities. If human burial remains are discovered during construction activities, all work in the vicinity of the remains will cease immediately and SHPD will be contacted.

3.10 LAND USE

3.10.1 Existing Conditions

The property consists of three adjacent parcels, designated as TMK (1) 5-9-011:068, 069, and 070, that adjoin the Foodland parcel, TMK (1) 5-9-011:016. The four commercially-zoned parcels total 4.56 acres zoned B-1 Neighborhood Business District. The North Shore SCP guidelines for a Rural Community Commercial Center limits the center to "existing zoned areas between Pūpūkea Road and Pāhoe Road that currently serve the commercial needs of residents and visitors." Additional land use policies and guidelines documented in the North Shore SCP for a rural center are shown in *Figure 2.2* (Chapter 2) and Chapter 4.

Three agreements related to property use have been recorded for the parcels: a 1978 Unilateral Agreement, a 1996 Development Agreement, and a 2017 Conditional Use Permit for Joint Development (for the three Hanapohaku parcels).

In 1978, a zone change (File number 77/Z-25) from R-6 Residential District to B-1 Neighborhood Business District was approved by the Honolulu City Council in Ordinance 78-76 and incorporated the Unilateral Agreement and conditions for development. Conditions include: 1) the design is "country-like" in style, emphasizing the wooden low-rise Haleʻiwa character; 2) installation of improvements on Pāhoe Road and the intersection of Pāhoe Road and Kamehameha Highway; and 3) the contribution of a pro-rata share of the cost of improving Kamehameha Highway.

Three structures on the property were constructed in the 1950s, prior to the establishment of the Shoreline Management ordinance. These structures are considered "legal conforming" structures, exempt from SMA ordinance. Two building of less than 575 SF each were constructed in 2001 and 2002, entitled under SMA-Minor permits (2001 SMA-14 and 2009/SMA-54).

The second agreement, recorded in 1996 at the Bureau of Conveyances (Document no. 96-170366, Dec. 2), is a Development Agreement between the owners of three parcels to document to cooperate with each other to achieve mutual benefits of an integrated neighborhood shopping center. While the agreement allows each party to make improvements to its land without obligation to the others, it documents cooperating among parties to provide adequate ingress and egress between the properties without obstructing wall or chain link fence at the time of development.

A third agreement is for issuance of a Conditional Use Permit in compliance with the provisions of City and County of Honolulu Land Use Ordinance (LUO) Section 21-5.380, relating to joint development of two or more adjacent lots. This section of the LUO provides for owners of adjacent lots to apply for a Conditional Use Permit (CUP) if joint development would result in more efficient use of land.

An expansion of site uses on the Hanapohaku parcels beginning in 2014 occurred in violation of building, grading and SMA requirements. The violations are being corrected, and existing operations on the Hanapohaku parcels are permitted under an Special Management Area (SMA) Use Permit – Minor (2017/SMA-21). Hanapohaku is to comply with specific terms and conditions to clear past use violations. Current compliance actions include settlement of fines and obtaining site development and building permits. The existing uses will be completely removed for development of the rural center.

Currently, access to the site does not utilize a Pāhoe Road entry or exit. The owners have committed to the Pāhoe Road residents that access to the site will continue to be limited to Kamehameha Highway. Therefore, the Unilateral Agreement highway improvements at Pāhoe Road does not apply to the property use.

3.10.2 Probable Impacts and Mitigation Measures

The City and County Land Use Ordinance (LUO) for B-1 Neighborhood Business District zoning allows for a maximum density floor area ration (FAR) of 1.0 and a maximum height of 40 feet for these parcels. Applying the FAR of 1.0 to the three Hanapohaku-owned parcels allows for development of a maximum floor area of 118,443 square feet. ~~Ordinance 11-3 incorporated~~ ~~t~~The North Shore SCP was amended to Ordinance Chapter 24, Article 8 as a vision for future development and to serve as a policy guide ~~for~~ with more detailed zoning maps and regulations. Section 24-8.4(b) of the ordinance states "Subdivision and zoning ordinances applicable to the North Shore Sustainable Communities Plan area enacted prior to the effective date of this ordinance shall continue to regulate the use of land within demarcated zones of the North Shore Sustainable Communities Plan area until such time as the subdivision and zoning ordinances may be amended to be consistent with the North Shore SCP." Zoning in the area has not been amended, so the current FAR applies. However, Hanapohaku LLC is committed to a lower density "country scale" development that fits with the North Shore community and its needs.

The rural center is in keeping with the North Shore SCP. The project will occupy the area designated in the North Shore SCP for a rural community commercial retail center and is consistent with the policy of "infill." The development plan is aligned with the goals of the North Shore SCP related to desired density, with a total floor area using only 25 percent of that allowed by the existing zoning ordinance.

3.11 DEMOGRAPHIC AND ECONOMIC CONDITIONS

Oʻahu is the third largest island of Hawaiʻi's main islands with a land area of 597 square miles. With a population of approximately 953,207, Oʻahu is the most populated island, accounting for about 70 percent of the State's population (U.S. Census Bureau, 2010).

3.11.1 Existing Conditions

Residential Demographic and Economic Conditions

The North Shore has steadily grown from a population of 9,200 in 1970, to 18,400 in 2000 (DPP 2011). Per the 2010 U.S. Census Data, the North Shore Census Tracts 99.02 (Haleʻiwa), 99.04 (Waialua/Mokuleia), and 101 (Waimea/Pūpūkea/Kahuku) reported a total population of 17,607. The North Shore SCP estimates 19,517 persons will be living in the region by the year 2035, as projected by the City and County of Honolulu DPP.

The 2010 population of the North Shore was slightly younger than Hawaiʻi's median age (38.6), with median ages of 37, 37.5, and 35.9, respectively. Approximately 55 percent of the population is younger than 40 years old. Ethnically, the population of the North Shore primarily consists of White (34.6 percent), Asian (27.4 percent), and Native Hawaiian and other Pacific Islander (10 percent).

According to 2014 American Community Survey (ACS) data, the median household incomes for each of the Census tracts 99.02, 99.04, and 101 were $25,518, $30,509, and $32,849, respectively. The North Shore tracts estimate from 2014 ACS data show an average of approximately 6.9 percent of all families living below the poverty level. Data from the US Environmental Protection Agency's Environmental Justice Screening Tool (EJSCREEN) indicates that the low-income population for Pūpūkea within the Hawai'i EPA Region is approximately 12 percent, as compared to the State average of 26 percent.

The State Department of Business, Economic Development and Tourism (DBEDT) evaluated movement of workers between areas on O'ahu on a typical workday in its *Commuter Adjusted Daytime Population on Oahu* Statistics Brief (DBEDT 2014). Results reflect the change between the number of jobs and the numbers of workers in an area. Areas with a high percentage of workers living and working in the same place would have less out-commuters. The study was adjusted to focus on people 16 years and over employed full- or part-time, so did not account for students, shoppers or tourists. The data account for the resident population, commuters driving into the North Shore for work, and commuters driving out of the North Shore for work in other regions of the island. *Table 3-2* shows the commuter flow and daytime population.

Table 3-2 North Shore Commuter Flow and Daytime Population

Daytime population change due to commuting (% of resident population)	Commuter Adjusted Daytime Population	Resident Population	Percent Workers living and working in the same place
Hale'iwa: (2.6%)	3,916	3,817	25%
Waialua: (-32.5%)	2,494	3,697	7.3%
Pūpūkea: (-34.4%)	3,425	5,224	21.9%
Kahuku: (-7.5%)	2,335	2,524	23.2%

Visitor Demographic and Economic Conditions

The *North Shore Sustainable Communities Plan* contains a synopsis of a survey conducted by the State of Hawai'i Department of Economic Development and Tourism related to visitors to the North Shore during two periods: the Winter of 2003 and Summer of 2005. The survey indicated 51 percent of all visitors to O'ahu visited the North Shore, which translates to an estimated average of 7,000 visitors per day, or 2.4 million tourists per year. The effect is economically positive, but the influx of tourists has stressed the community infrastructure, notably beach and park facilities and restroom, and increased traffic over the past decades.

Existing Commercial Businesses

The property has a long history of commercial use, as described in Chapter 2, *Section 2.1 History of Property*. The current tenants at the site are small, locally owned and operated by families that primarily reside on the North Shore.

3.11.2 Probable Impacts and Mitigation Measures

The rural center will lease space to local businesses from the North Shore and Hawai'i. The landowners recognize the community benefit from local entrepreneurship that is reflected in the current tenants. The surf shop owner has indicated an intent to remain at the center as are the

operators of popular food trucks. Waialua Federal Credit Union has committed to adding its second North Shore location at the rural community commercial center. The FCU members live, work, attend school or worship in the area from Kaʻena Point to Crawford's Home near Kahuku. Additional anticipated tenants include an urgent medical care clinic and pharmacy.

Development of the rural center will create financial benefits in terms of construction employment and spending, and County real property tax. Construction spending, including tenant improvements, is projected at $17.8 million. Construction employment is estimated at 45 full-time equivalent positions for site work, infrastructure, carpentry, and landscape. The annual City and County of Honolulu Real Property taxes currently paid are approximately $36,000. With completion and occupancy of the rural center, the County real property taxes will increase to approximately $148,600 per year.

Long-term employment is estimated at ~~86~~ 80 full time jobs. With stabilized revenues, the projected State Income Taxes are estimated at $2.2 million annually. The estimated State of Hawaiʻi General Excise Tax is approximately $103,664 per year.

The tenant businesses will provide goods and services to residents, which would otherwise require vehicle trips to commercial centers in Haleʻiwa or Central Oʻahu. The project will positively impact economic opportunities by adding business opportunity for Hawaiʻi entrepreneurs, and by adding jobs within the region. In turn, area residents that work at the center can avoid long commutes to job centers in urban areas of Oʻahu.

The project will not impact the region's residential demographic – that is, the population or mix of residents.

3.12 PUBLIC SERVICES

3.12.1 Existing Conditions

Police Protection

The Pūpūkea region is under the protection of the City and County of Honolulu Police Department (HPD). The area is part of HPD District 2, which extends from the North Shore (Sunset Beach) to Central Oʻahu (Mililani).

Fire Protection

First response for medical and fire emergencies at the project site and the surrounding area is provided by the City and County of Honolulu Fire Department (HFD).

The Pūpūkea region is in the 5th Battalion area designated by HFD. The region is served by two fire stations:

- The Sunset Beach Fire Station is located across the street from the project site, along Kamehameha Highway.
- The Waialua Fire Station is located 6.1 miles south on Haleʻiwa Road, between Paʻalaʻa Road and Kaiaka Street.

The Kahuku Fire Station, associated with the HFD 3rd Battilion, is located 9.4 miles north on Kamehameha Highway, between Puʻuluana Street and Enos Road.

HFD works with the City and County of Honolulu Emergency Medical Services and the City and County of Honolulu Emergency Medical Dispatch in providing first response to emergencies.

Medical and Hospital Services

The closest family physician office is located at Kaʻena Kai Clinic in Haleʻiwa, approximately 5.6 miles away. The clinic's hours of operation are limited to Monday through Friday between the hours of 9 a.m. and 5 p.m., with walk-in hour Saturdays 10 a.m. to 4 p.m.

The closest medical center with 24-hour availability is the emergency room of Kahuku Medical Center, located approximately 9.1 miles north east of the project site. The medical center offers comprehensive medical services including a primary care clinic, emergency services, lab and imaging services, a pharmacy, rehabilitation services, and inpatient care.

The next closest medical center is Wahiawa General Hospital, located approximately 14.7 miles from the project site. The hospital currently includes 53 beds for its acute facility and 107 beds in its long-term care facility.

Schools

The Pūpūkea community is part of the State Department of Education's Kahuku Complex Area. The public schools closest to the Pūpūkea Rural Community Commercial Center include: Sunset Beach Elementary (1.3 miles north), Waialua Elementary (7.8 miles south), Waialua High and Intermediate (8.7 miles south), Kahuku Elementary (9.2 miles north), Lāʻie Elementary (11.7 miles north), and Kahuku High and Intermediate (13.6 miles north).

Libraries

The state public libraries closest to the Pūpūkea Rural Community Commercial Center include the Waialua Public Library (8.2 miles south) and the Kahuku Public Library (13.7 miles north).

Public Parks and Shoreline

Public parks provide open space and a natural outdoor environment for both residents of Hawaiʻi and tourists to enjoy. The City's long-range plans for the North Shore are detailed in the North Shore SCP. The plan includes an Open Space Plan that highlights the rich open space and park areas which have been established to support the needs of residents and visitors along the North Shore. Across the highway from the project site is a string of City beach parks that extends several miles from Sunset Beach to Three Tables area. These include following City and County of Honolulu public beach ~~parks are located near the project area~~ Pūpūkea Beach Park, Waimea Bay Beach Park, and ʻEhukai Beach Park. Other recreational parks in the area include Sunset Beach Neighborhood Park, Pipeline Skatepark, ~~Sunset Beach Park,~~ Sunset Beach Recreation Center. Puʻu o Mahuka Heiau State Historic Site and the 1,129-acre Pūpūkea-Paumalu State Park are ~~is~~ the ~~only~~ State managed parks near the project. The nearby 1,875-acre Waimea Valley was acquired by the Office of Hawaiian Affairs and the US Army. The North Shore is rich in open space and park areas open to the public and provide for a variety of recreational opportunities.

3.12.2 Probable Impacts and Mitigation Measures

Police Protection

The rural center is not anticipated to impact police protection services for the area. No mitigation measures are proposed.

Fire Protection
The Pūpūkea Rural Community Commercial Center is not anticipated to impact fire protection services for the area. Coordination with the Board of Water Supply and the HFD will be ongoing to ensure the provision of a water supply that is capable of supply required fire flow for fire protection needs. No additional mitigation measures are proposed.

Medical and Hospital Services
The rural center will include leasing space for an urgent care facility. The nearest walk-in clinic in Haleʻiwa, approximately 5.6 miles away, provides limited walk-in hours. The closest 24/7 medical facility is 9.1 miles north in Kahuku, and 14.7 miles to the southeast in Wahiawa.

The rural center will help to improve overall medical access and health outcomes for North Shore residents and visitors with general family medicine and emergency medical needs.

Schools
No adverse impacts to local schools are anticipated from the rural center. No mitigation measures are proposed.

Libraries
The rural center is not anticipated to pose adverse impacts to local libraries. No mitigation measures are proposed.

Public Parks and Shoreline
As specified in the North Shore SCP, the project site and the Pūpūkea Foodland are identified as the site of the Rural Commercial Community Center for the area. There are no plans by the government or the community seeking to convert the existing lands which are zoned as B-1 Neighborhood Commercial into open space parks The proposed action is consistent with the long-range plan for the North Shore. The rural center is not anticipated to pose adverse impacts to nearby State parks or City and County of Honolulu parks.

3.13 TRAFFIC

3.13.1 Existing Conditions

Vehicle Circulation
The project area is served by two roadways, Kamehameha Highway (Highway 83) and Pūpūkea Road. Kamehameha Highway, located makai of the project area, is operated and maintained by the State of Hawaiʻi Department of Transportation (HDOT). It is a two-lane highway and extends across Oʻahu beginning at the Nimitz Highway junction near Daniel K. Inouye International Airport, circles the island, and terminates at the Pali/Kalanianaole intersection in Kāneʻohe. The posted speed limit is 35 miles per hour (mph) in the study area. The two existing driveways to the Foodland grocery store, adjacent to the project site, are closer in proximity to the Pūpūkea Road intersection than allowed under current DOT standards and traffic engineering practice.

Pūpūkea Road provides access between Kamehameha Highway and the mauka-residential neighborhoods, as well as direct access to the existing Foodland grocery store via an existing driveway. The posted speed limit on this street is 25 mph, and the intersection at Kamehameha Highway is controlled by a traffic signal with separate turn lanes.

Field Observations

Observations along Pūpūkea Road showed traffic to be generally free-flowing during all peak hours. Queues of fewer than five cars were observed makai-bound at the signalized Kamehameha Highway intersection. Deliveries via truck to Foodland are through the loading dock on the mauka side of the store. Approximately 40 to 60 deliveries are made daily Monday through Saturday, with the peak period occurring between 10 a.m. and 12 noon. Monday, Wednesday and Friday are the busiest delivery days. Both large trucks and smaller two-axle trucks made deliveries. Some trucks require multiple maneuvers in and out of the driveway, which can temporarily block Pūpūkea Road and cause intermittent delays.

Peak hour intersection capacity analysis was performed for the Kamehameha Highway/Pūpūkea Road intersection. Traffic analyses are typically conducted to describe the existing conditions (traffic volume, multi-modal users, whether controls exist at intersections e.g. traffic lights or stop signs). Traffic is also projected based on the future conditions without the project ("baseline conditions"), that is, considering regional growth and/or traffic anticipated from known pending developments near the project site. Finally, the anticipated number of vehicle trips resulting from the proposed project is analyzed.

Table 3-3 shows the results of the existing intersection operations analysis. Traffic counts were conducted during the weekday mid-day and evening peak periods in November 2016, during the Haleʻiwa surf competition and when local schools were in session. Saturday peak period traffic was collected during the busy winter surf and holiday season in early January.

Table 3-3 Existing Intersection Levels of Service

Intersection	Traffic Control	Peak Hour	Delay (sec/veh)[1]	Level of Service (LOS)[1]
Kamehameha Highway & Pūpūkea Road	Signal	MID	7.3	A[2]
		PM	6.9	A[2]
		SAT	8.4	A[2]

Source: Appendix F (Fehr & Peers, 2018)

[1] Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized and all-way stop-controlled intersections. The vehicular delay for the worst movement is reported for side-street stop-controlled intersections.
[2] During select peak times of the year, drivers do experience temporary delays approaching and traveling through this intersection. However, the overall operations during typical conditions meet or exceed the State of Hawaiʻi DOT and City & County of Honolulu's minimum desirable operating level of LOS D.

Intersection Levels of Service

Level of Service (LOS) is used to assign quality levels of traffic based on performance measures and describe the flow of traffic. Six levels are defined, ranging from LOS A representing the least congested operating conditions to LOS F representing the most congested operating conditions. LOS E is considered the "at capacity" operation. The City DPP and State DOT consider LOS D the minimum desired operating standard.

Observations along Pūpūkea Road showed traffic to be generally free-flowing during all peak hours. The Kamehameha Highway and Pupukea Road intersection currently operates at LOS A during most midday, PM, and Saturday peak hours. Drivers do experience temporary delays at the intersection during some periods of the peak summer and surf seasons. However, the typical operations at this

location during the traffic study periods include limited delays and meet or exceed the minimum desirable operating standard of LOS D.

Transit Facilities and Services

TheBus is the main public transportation service for the island of Oʻahu. Route 55 and Route 88A are the two regular service bus routes that pass by the project site along Kamehameha Highway. In the westbound direction, Route 55 starts in Ala Moana, and travels through Kāneʻohe and along Kamehameha Highway where it passes immediately adjacent to the project site and continues south to Haleʻiwa. Complementary eastbound service is also provided in the reverse direction. Route 88A (North Shore Express) starts in Aiea and travels northwest through the project site, and around the northern and eastern perimeter of Oʻahu terminating in downtown Honolulu. The northbound bus stop adjacent to the project is located immediately north of the outbound Foodland driveway. The southbound bus stop is located directly across the highway and includes a turnout lane which allows southbound vehicles to pass the bus while it is stopped to load and unload passengers.

Bicycle Facilities and Activity

There are no separate bicycle paths provided within the immediate vicinity of the project site. However, southbound bicyclists can use the parking lane located on the ~~mauka~~ makai side of the highway ~~located~~ north of the Sunset Beach Fire Station. This lane serves as a defacto extension of the Ke Ala Pūpūkea Bike Path that ends just north of Puula Road, and it allows cyclists to travel separately from vehicles on the highway.

Peak counts for bicyclists were conducted during the same time as traffic counts. The number of bicyclists at the Kamehameha Highway/Pūpūkea Road intersection ranged from two to 14 during weekday midday and evening peak hours, respectively. The Saturday midday count was 12 bicyclists.

Pedestrian Facilities and Activity

No existing pedestrian sidewalks are provided on Kamehameha Highway in the immediate vicinity of the project site. Crosswalks are provided across three of the four legs of the signalized Kamehameha Highway/Pūpūkea Road intersection, with no crosswalk provided across the south leg of the highway.

Pedestrian counts during peak periods showed that the highest volumes occurred during the Saturday midday peak hour with 48 people crossing at the Kamehameha Highway/Pūpūkea Road intersection. Weekday counts were lower with nine and 12 pedestrians crossing during the weekday mid-day and evening peak hours, respectively.

3.13.2 Probable Impacts and Mitigation Measures

Vehicle Circulation

Access to the rural center and Foodland will be through a combined driveway from Kamehameha Highway located approximately 210 feet north of Pūpūkea Road. The entry will be clearly marked with signage. Two additional changes are proposed to improve traffic flow along Kamehameha Highway in the access area: closure of the existing Foodland driveways on Kamehameha Highway to reduce the total number of access points; and creation of a center two-way left-turn lane to provide a refuge area for traffic turning left into and out of the rural center. The existing driveway connection to Pūpūkea Road will be retained, and only minimal improvements to the Foodland parking area are needed. To minimize delays caused by trucks accessing Foodland's loading dock, deliveries should be scheduled during off-peak times in the early afternoon.

The main circulation driveway will enter from the highway and allow entry to Foodland, or route rural center users to a parking area mauka of, and behind, the central building. There will be no pedestrian or vehicular access to or from the privately owned Pāhoe Road. A curb and ~~sidewalk~~ pedestrian pathway, separated low vegetation to deter crossing except at designated areas, will be installed along the project's makai edge to Pūpūkea Road (*Figure 3-8*). ~~and~~ The curb will narrow the existing shoulder width on Kamehameha Highway and eliminating space for illegal parking along the highway fronting the parcels.

The City and County Land Use Ordinance requires one off-street parking stall per 400 square feet of commerce and business space; applying this to the proposed ~~30,000~~ 34,500 square-foot center results in a requirement for 75 spaces. The project anticipates providing approximately 126 parking spaces; this allows 36 parking spaces for up to six mobile food truck vendors and patrons. No bus parking will be provided. ~~m~~Most stalls will be sited behind the rural center. Part of the parking area will be shaded by a canopy of photovoltaic panels installed to generate solar energy for on-site usage. An electric vehicle charging station for at least two electric vehicles will be installed. With the closure of the existing Foodland driveway entries, up to seven new spaces will be added to the lot fronting Foodland.

Transit Facilities

The northbound bus stop adjacent to the site will need to be relocated with construction of the proposed consolidated site driveway. There are two possible locations along Kamehameha Highway fronting the rural center for the northbound bus stop. One location is closer to the existing crosswalks at the intersection of Pūpūkea Road and the highway; the other is north of the proposed consolidated access driveway. The TIAR (*Appendix F*) recommends the location near Pūpūkea Road and Kamehameha Highway near the existing traffic signal, as the controlled crossing point would provide for gaps in traffic and would clearly delineate rights-of-way for all users. The final location will be determined in consultation with HDOT and the City Department of Transportation Services.

Bicycle and Pedestrian Facilities

Improvements to aid multimodal users (e.g. pedestrians, cyclists, wheel chairs) include an on-site, high visibility crosswalk between buildings, and provisions for bicycle parking (*Figure 3-8*). A crosswalk on Kamehameha Highway just south of Pāhoe Road is recommended. Installation of high visibility crosswalk markings, perhaps with rectangular rapid flashing beacons (RRFBs), will be decided in consultation with, and approval from, HDOT. Additionally, the City has requested installation of a new sidewalk along the Foodland frontage on Pūpūkea Road (see Chapter 6 comment letter from Department of Transportation Services). A final determination on the crosswalk and sidewalk along Pupukea Road will be made in conjunction with the State DOT and City DTS, respectively. These two items are included in Section *3.19 Unresolved Issues.*

Intersection Levels of Service with the Project

Estimates of increased vehicle trips include two calculations. One is a growth factor anticipated without the project ("near term baseline"), and the second is an estimate of vehicle trips to the rural center using rates published by the Institute of Transportation Engineers for specialty retail centers. The near-term baseline conditions were calculated using a conservative one-percent annual growth factor. The impact of one-percent increased traffic would not change the LOS, however, an additional potential delay traveling through the Kamehameha Highway / Pūpūkea Road intersection could be up to eight-tenths of a second (0.8) more (from Saturday peak hour delay of 8.4 seconds currently, to a possible delay per vehicle of 9.2 seconds). See *Tables 3.3* and *3.4*, and *Appendix F*.

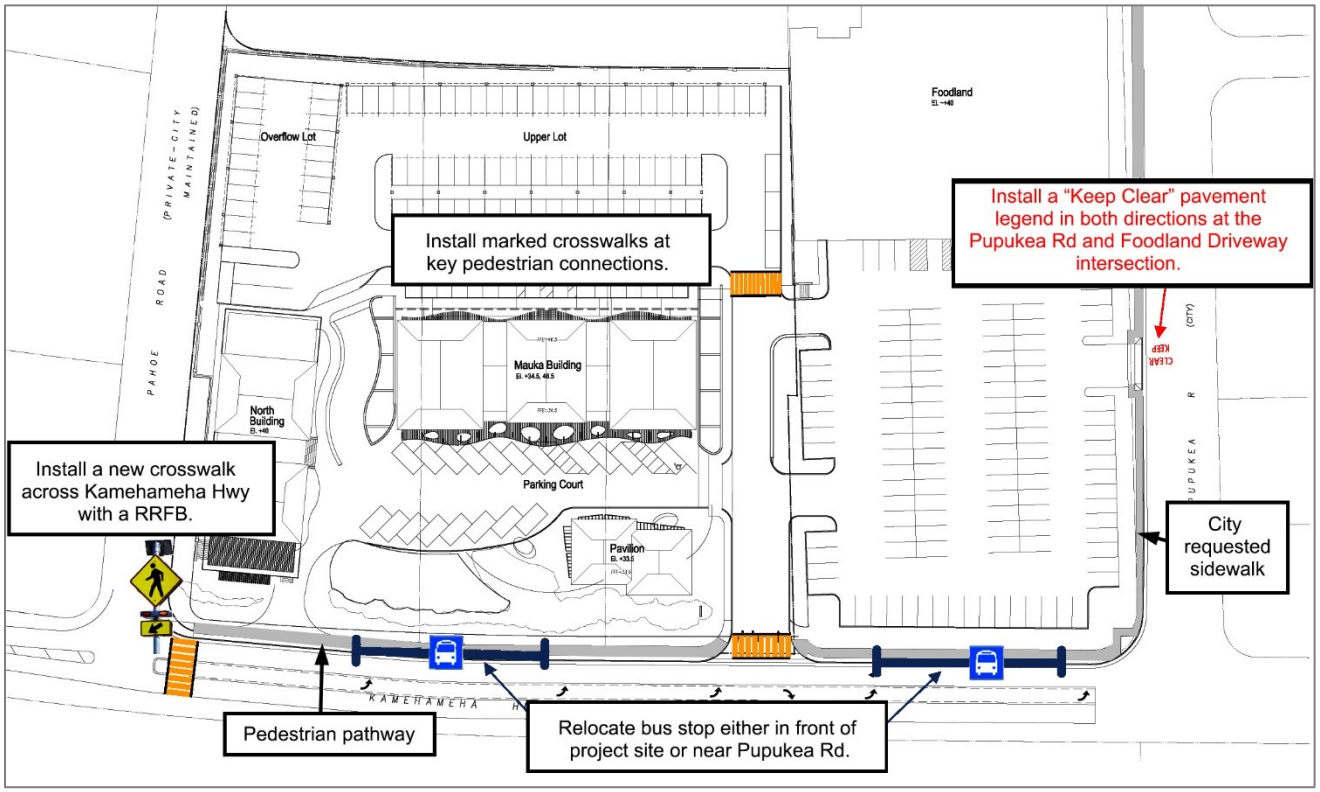


Figure 3-8 On- and Off-Site Multimodal Enhancements (*New graphic*)

Estimates for new vehicle trips on the highway and Pūpūkea Road with development of the project site total ~~1,322~~ 926 net new daily ~~vehicle~~ trips. The estimate represents vehicle movements in and out of the project driveway, not vehicles. During midday and evening peak hours, ~~a total of~~ 65 net new trips (29 inbound to the center and 36 outbound from the center) are anticipated; Saturday midday peak hours total 98 (51 inbound and 47 outbound). "Pass-by" trips are ~~than~~ added~~;~~, which ~~these~~ represent vehicles already on the highway that decide to turn into and out of the site. Daily trips at midday and evening peak hours, including new vehicles and pass-by trips~~,~~ then total 93, with 140 vehicle trips on Saturday midday peak hours (*Appendix F, Table 6*).

The impact of the increased traffic related to the project at the intersection of Kamehameha Highway and Pūpūkea Road would continue at LOS A during both peak hours of traffic, with LOS B during Saturday peak hour traffic. The potential delay for a vehicle under LOS B conditions would be an additional 1.7 seconds over the near-term baseline conditions (*Table 3-4*).

Traffic at the intersection of Kamehameha Highway / Project Driveway with the completed project is anticipated to operate at an acceptable LOS D or better under both peak hours of traffic.

Table 3-4 Near-Term (2021) Baseline Intersection Levels of Service

Intersection	Traffic Control	Peak Hour	Near Term Baseline		Near Term Plus Project		Delay Change
			Delay (sec/veh)	LOS	Delay (sec/veh)	LOS	
Kamehameha Hwy/ Pūpūkea Rd	Signal	MID	8.1	A	9.6	A	1.5
		PM	7.6	A	9.2	A	1.6
		SAT	9.2	A	10.9	B	1.7
Kamehameha Hwy/ Project Driveway/ Foodland Driveway	Side-street Stop control	MID	Driveway does not exist under this scenario		24.1	C	24.1
		PM			23.5	C	23.5
		SAT			30.1	D	30.1

DOT and the City's Traffic Review Branch define a significant intersection impact when operation of an intersection changes from LOS D or better to LOS E or F. The LOS for the signalized Kamehameha Highway/ Pūpūkea Road intersection could change from A to B under the peak Saturday hour scenario with the rural center. The existing roadway and the added roadway capacity from the center two-way left-turn lane will accommodate additional vehicle trips to the rural center without substantially increasing delays for existing users on Kamehameha Highway. The existing traffic signal will help to provide gaps in traffic on the highway for vehicles turning into and out of the new site driveway and will continue to provide a control for Pūpūkea Road neighborhood traffic. The rural center construction will not significantly impact traffic in the region.

During peak winter surf season and the active summer period on the North Shore, intermittent congestion is expected to continue to occur with or without the rural center.

Minor upgrades to public facilities likely to be assigned to the landowner by State and City transportation agencies for mitigation include the restriping of Kamehameha Highway, curb with gutter and drainage along, and recommended crosswalk across, Kamehameha Highway. A Traffic Management Plan (TMP) will be prepared for joint review by the City DPP and Department of Transportation Services (DTS) as part of minimization and mitigation of short-term roadway impacts related to project construction. Detailed measures will be agreed upon, including safety measures to be implemented during construction.

Relevant and approved Best Management Practices (BMPs) described in *Section 3.2* (Soils) and *Section 3.6* (Surface Water and Drainage) will be applied to meet or exceed the NPDES construction storm water permit requirements. BMPs applicable to roadways and include prevention of dirt and debris being trailed on City and State roadways as described in *Section 3.2.2*. In keeping with the City site development and building permit requirements, any damage to existing roadways, sidewalks/curbs would be repaired to current agency standards. All permit provisions and compliance with the approved TMP will be adhered to in order to minimize short-term impacts.

3.14 AIR QUALITY

3.14.1 Existing Conditions

The U.S. Environmental Protection Agency (EPA) established the National Ambient Air Quality Standards (NAAQS) per the requirements of the Clean Air Act (last amended in 1990) to protect public health and welfare and prevent the significant deterioration of air quality. These standards account for seven major air pollutants: carbon monoxide (CO), nitrogen oxides (NOX), ozone (O_3), particulate matter smaller than 10 microns (PM10), particulate matter smaller than 2.5 microns (PM2.5), sulfur oxides (SOX), and lead. The DOH Clean Air Branch (CAB) has also established State Ambient Air Quality Standards (SAAQS) for six of these air pollutants to regulate air quality statewide. The SAAQS for carbon monoxide and nitrogen dioxide are more stringent than the NAAQS. DOH CAB regularly samples ambient air quality at monitoring stations throughout the State and annually publishes this information.

The DOH CAB has 14 monitoring stations on the islands of Oʻahu, Kauaʻi, Maui, and Hawaiʻi, with six monitoring stations on Oʻahu. The Air Monitoring Station nearest the Pūpūkea Rural Community Commercial Center is located in Pearl City. Ambient air quality is very good at the rural community commercial center location. Present air quality in the project area is mostly affected by air pollutants from motor vehicles due to the proximity to Kamehameha Highway. Natural sources of air pollution emissions that could affect the project area at times but cannot be quantified very accurately include plants (aero-allergens), wind-blown dust, and potentially, distant volcanoes on ~~the~~ Hawaiʻi Island.

3.14.2 Probable Impacts and Mitigation Measures

Temporary impacts to air quality from construction will include fugitive dust, construction equipment exhaust and asphalt paving emissions. Construction activities such as excavation, grading, and transport of soil on and off-site is regulated under DOH Clean Air Branch (CAB) through HAR §11-60.1, Fugitive Dust. The Rules state, in part, that "no person shall cause or permit visible dust to become airborne without taking reasonable precautions;" and "no person shall cause or permit the discharge of visible fugitive dust beyond the property lot line . . ."

Short-term construction impacts to air quality will be temporary and not contribute to exceedance of any federal or state ambient air quality standards.

Reasonable precautions to control fugitive dust are determined on a case-by-case basis and will be documented in a dust control plan. Site topography, soil conditions, meteorological conditions, site activities and equipment used, and any materials processed are considered. The construction contractor assesses activities and conditions daily to make adjustments to prevent fugitive dust from becoming airborne and crossing the property line.

On-site mobile and stationary construction equipment emit air pollutants in engine exhaust. The largest emission sources are usually from diesel-powered equipment. Engine exhaust emissions from construction vehicles can be minimized through the proper operation and maintenance of equipment.

BMPs to minimize fugitive dust and minimize equipment emissions include dust screen or wind barriers around the construction site; use of water or dust suppressants on roads and material

stockpiles; cover moving, open-bodied trucks transporting dusty materials; and implementing the dust control plan approved for the project.

The rural center is not anticipated to generate significant or long-term emissions that would cause or contribute to an appreciable effect to local or regional air quality. Ambient air quality is very good at the site, and ~~T~~the rural center will not generate emissions of the seven major air pollutants regulated by the EPA or the State Clean Air Branch. No fugitive dust will be generated by operation or use of the retail center or its tenants. Delivery vehicles will be encouraged to turn off engines during delivery standing periods. No long-term impacts to air quality will occur from the rural center.

No mitigation is required, as no long-term impacts to air quality are anticipated.

3.15 NOISE

A study of current and projected noise conditions was conducted by Y. Ebisu & Associates in July 2017 and is included in *Appendix G*.

3.15.1 Existing Conditions

Traffic noise measurements were recorded at three locations around the project site: 50 feet from the centerline of Kamehameha Highway north of Pāhoe Road; 100 feet from the centerline of Kamehameha Highway north of Pāhoe Road; and 50 feet from the centerline of Pūpūkea Road behind Foodland market. Analyses was performed to provide the predicted noise levels using the U.S. Federal Highway Administration Traffic Noise Model, Version 2.5.

The Base Year and Future Year (2021) Average Hourly Sound Level (Leq(h)) of traffic noise levels for the project area were calculated at distances of 50, 75, and 100 feet from the centerline of Kamehameha Highway and Pūpūkea Road. Per the State DOT, Highways Division Highway Noise Policy and Abatement Guidelines, applicable noise mitigation thresholds for traffic noise are 66 Leq(h) and 71 Leq(h) for residential and commercial areas, respectively.

Distances to the 66 Leq(h) noise contour for unobstructed line-of sight conditions ranged from 36 to 44 feet from the centerline of Kamehameha Highway during the Base Year. Applicable distances to the 71 Leq(h) noise contour for unobstructed line-of sight conditions ranged from 20 to 24 feet from the centerline of Kamehameha Highway during the Base Year.

3.15.2 Probable Impacts and Mitigation Measures

In 2021, without the rural center, traffic noise levels are predicted to increase by 0.2 to 0.3 Leq(h) along Kamehameha Highway and by 0.3 to 0.4 Leq(h) along Pūpūkea Road. These increases will not be perceptible and are well within the accuracy limits of the noise level predictions. By 2021 with the rural center, a maximum additional increase in traffic noise levels along Kamehameha Highway of 0.2 Leq(h) is predicted to occur due to project traffic during Saturday peak hour. Along Pūpūkea Road, larger increases of 0.3 to 0.4 Leq(h) are anticipated from Non-Project traffic, and even larger increases of 0.9 to 1.1 Leq(h) are anticipated from project traffic. By 2021, with or without the rural center, the total number of existing residences along Kamehameha Highway within the 66 Leq(h) will increase from one to two. No existing residences along Pūpūkea Road should be within the 66 Leq(h) traffic noise contour by 2021, with or without the rural center.

During the construction phase, the rural center will adhere to State DOH property line noise limits of 60 dBA from fixed machinery (such as air conditioning and refrigeration equipment) during the daytime and nighttime periods, respectively as required by HAR §11-46, Community Noise Control. Adherence to these limits should minimize risks of adverse noise impacts at nearby residences. Construction will also adhere to the State DOH permit procedures and curfew periods to minimize risks of adverse noise impacts at nearby residences. Excessive noise from construction equipment is permitted during weekdays from 7:00 am to 6:00 pm (excluding holidays), and from 9:00 am to 6:00 pm on Saturdays.

Long-term operational noise will be minimized through design of the buildings and vegetation screening on the north and east sides of the project. To minimize noise from people transiting the parking lot to the rural center buildings, vegetation screening will be installed along the perimeter of the property line adjacent to Pāhoe Road. Noise generated from the restaurant will be minimized by the building design, which will utilize solid exterior walls with windows for natural light on the Pāhoe Road side and provide enclosed interior air-conditioned space. The exterior of the restaurant will be acoustically designed to reduce exterior noise levels to 45 dBA or less at the closest residence. Daytime and nighttime noise limits of the State DOH will be strictly enforced at the property.

To minimize potential noise from delivery trucks, such as that of back-up alarms, deliveries to the commercial establishments during nighttime or early morning hours will be avoided.

3.16 INFRASTRUCTURE AND UTILITIES

G70 prepared a Preliminary Engineering Report (PER) for the project in September 2017. The PER is included as *Appendix H*. The following summarizes the existing and proposed conditions contained in the PER.

3.16.1 Existing Conditions

Wastewater

Exception for one subdivision in Waialua, there is no municipal wastewater collection system serving the North Shore. The City and County of Honolulu has no plans to construct a new regional system for the North Shore within the near future. Wastewater treatment for residences, stores, schools and parks on the North Shore consist of on-site treatment and disposal systems.

The existing IWS located on the project site's southern parcel (TMK 5-9-011:068) was permitted by DOH WWB. In April of 2016, the owner voluntarily upgraded the existing IWS to an aerobic treatment unit which provides secondary treatment and services the real estate building, commissary II and the office. Current wastewater flow is conservatively estimated to be 400 gpd (*Appendix B*). *Figure 3-9* shows the location of the existing IWS, as well as the proposed wastewater treatment system.

Water

Potable water in the general region is provided by the Honolulu Board of Water Supply (BWS). Per record drawings there is an existing 8-inch water main located along Kamehameha Highway and another existing 8-inch water line located along Pāhoe Road. The existing water main and meter (#02403605) currently provides water service to Parcel 068 via an existing water lateral and a 1-inch water meter.

Drainage

The project site has a relatively moderate slope averaging 5 percent from the mauka side of the property towards Kamehameha Highway. Based on a topographic survey, elevations at the site range from 29 to 51 feet above Mean Sea Level.

Currently, there are no existing on-site drainage facilities and no defined natural drainageways. Due to the lack of a storm water collection system, storm runoff in the area generally flows across the properties and continues offsite. The nearest drain inlet is located south of the project site along Kamehameha Highway. The drain connects to a 24-inch pipe and outlets to the Pūpūkea Beach Park

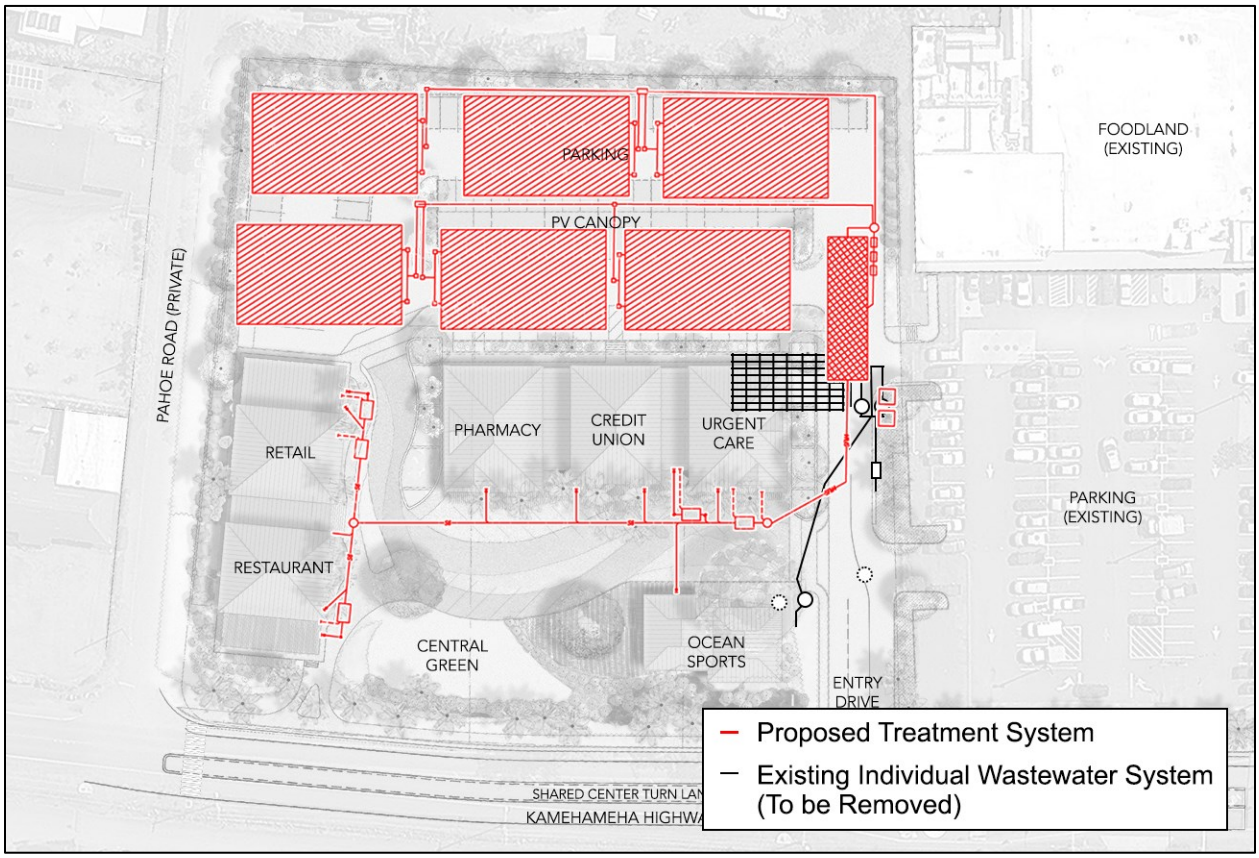


Figure 3-9 Location of Existing IWS and Proposed Wastewater System (*New graphic*)

makai of the fire station. The drainage system along Kamehameha Highway is owned and maintained by the State of Hawaiʻi, Department of Transportation, Highways Division. In addition, there are a series of catch basins at the intersection of Pūpūkea Road/Kamehameha Highway, which outlets to the Pūpūkea Beach Park further south near Three Tables Beach. The drainage facilities at the intersection are owned and maintained by the City and County of Honolulu.

Electrical Power

Existing overhead Hawaiian Electric Company power lines extend along the makai right-of-way along Kamehameha Highway. Current electrical demand for the existing buildings and mobile food establishments is estimated at 4,500 kilowatt hours (kWh) per month.

Solid Waste

Solid waste on Oʻahu is divided into two categories - municipal solid waste, and construction and demolition material. Municipal solid waste on Oʻahu goes to the waste-to-energy "H-POWER" plant in Campbell Industrial Park, whether collected by the City's refuse trucks or collected by private service providers. Mandatory recycling is enforced through a variety of City ordinances. The requirement varies by the type and size of the commercial entity.

Currently on the site, heavy-duty plastic lidded cans and separate rectangular containers for recyclables are provided on-site for trash collection from customers. Covered commercial dumpster bins for trash and recyclables are provided per zoning code for the commercial tenants and are managed on a regular schedule by a contracted, qualified service provider.

3.16.2 Probable Impacts and Mitigation Measures

Wastewater

As there is no municipal sewer collection system for the North Shore, the existing onsite wastewater system will be replaced with a treatment and disposal system suitable to the anticipated tenant mix and leasable area, per DOH regulation. The site lies outside of the Honolulu Board of Water Supply No Pass zone, and installation of waste treatment facilities is allowed.

Under the DOH Underground Injection Control (UIC) program, injection of wastewater is another method of disposal that could be permitted. HAR §11-23-05 (c) states "*In areas where the UIC line is defined by a roadway, a setback of one lot or one hundred fifty feet, whichever is less, from the mauka property line of that roadway may be considered to be within the exempted area.*" However, no injection of wastewater or other liquids is planned for the project.

Wastewater design flow for the rural center was based on guidance from the DOH Appendix D, HAR §11-62 (Wastewater Systems). System design includes accessible bathrooms for patrons and employees of the retail, office, and restaurant operations, as well as capacity for transient demand such as employees and customers of mobile food establishments. The design flow is estimated to be ~~10,533~~ 10,900 gpd based on projected uses (*Appendix H*). If DOH WWB requires disinfection, this step can be added to the treatment process. There will be no industrial wastewater generated or discharged by tenants. Note that the system design size is conservative to ensure adequate capacity; the estimated wastewater flow is anticipated to be less (*Section 3.6*).

The existing wastewater treatment system on site will be removed. The new on-site wastewater treatment system will consist of pre-treatment, an aerobic treatment unit (ATU) and absorption beds. Pre-treatment removes fats, oils and greases and consists of a grease interceptor that utilizes settling chambers and baffled pipe connections that will be installed at the restaurant. A septic tank will be used as a pre-loader to remove solids, reduce Biochemical Oxygen Demand (BOD) levels, and separate total suspended solids (TSS) from the waste stream prior to secondary treatment in the aerobic unit. Anaerobic bacteria will break down solids in the tank, though periodical removal by a septic pumper may be required. The aerobic treatment applied to the wastewater adds another level of treatment to improve effluent quality. ATUs use mechanical components to oxidize organic material, decrease TSS and reduce pathogens. The system can add an optional disinfection process, should additional treatment be required.

The absorption bed area will be sized at double the design flow, to provide for full redundancy of the effluent disposal capacity. Granular material will replace soil around the beds to provide the most effective final treatment. The beds will be located under the parking lot area to maintain accessibility by maintenance vehicles. Overall, the planned wastewater system will provide a high level of treatment, which will minimize the amounts of nutrients filtering through the subsurface soils profile. *Figure 3-9* shows the location of the proposed wastewater system.

DOH WWB requires regular monitoring and reporting to demonstrate system performance. In the case of infrequent special events with larger gatherings, the increased wastewater load would be supported with portable toilets and hand-washing stations. Mobile food trucks may be among the tenant mix periodically using the hardscaped area adjacent to the central gathering space. While in practice the number may be much lower, the wastewater ~~and parking~~ capacity ~~are~~ is sized to support ~~up to eight mobile food trucks,~~ the~~ir~~ patrons~~,~~ and employees of the center, including up to six mobile food trucks. The food trucks will be fully mobile and compliant with DOH and DPP regulations. The trucks will not be connected to, nor utilize, the on-site wastewater system. Per current DOH rules, food trucks are required to have liquid wastes removed at an approved waste servicing area or by a licensed commercial pumping contractor. A summary of the planned wastewater treatment and disposal system is included in *Appendix H*.

Water

The water system will serve 25 or more individuals at least 60 days per year and will therefore be considered a public water system under DOH regulations. The design and operation of the system will comply with Hawai‘i Administrative Rules Title 11, Chapter 20 *Rules Related to Public Water Systems*.

Based on high level planning guidelines for commercial zoning, the BWS Water System Standards (2002) utilize an average daily demand consumption of 3,000 gallons per acre for commercial developments, which includes water for landscape irrigation. A factor of 1.5 is applied to the average daily demand to obtain the maximum daily demand. The rural center is anticipated to have an average daily demand of 8,160 gallons, and a maximum daily demand of 12,240 gallons (*Appendix H*). BWS has confirmed that the existing water system is adequate to accommodate the currently proposed rural center design.

No new source of potable water will be required to service the rural center.

Drinking Water

The rural center will likely utilize the existing BWS water meter to provide domestic water service to the property. Based on the American Water Works Association (AWWA) standards, the existing 1-inch domestic water meter has a maximum capacity of 50 gallons per minute (gpm) and a continuous capacity of 25 gpm. There will be no impact to public drinking water availability or to drinking water quality from the rural center.

Fire Protection

BWS stated that offsite fire protection is adequate to accommodate the rural center. Improvements to offsite fire protection is therefore not proposed. A fire sprinkler system will be included in the new commercial buildings.

Landscape Irrigation
Irrigation for the rural center landscaping will be designed and operated to prevent the cross-connection of these systems and prevent the possibility of backflow of water from the irrigation system to the potable system. The two systems must be clearly labeled and physically separated by air gaps or reduced pressure principle backflow prevention devices to avoid contaminating the potable water supply.

Design of the water system will comply with HAR § 11-21 *Cross-Connection and Backflow Control* and will undergo design review by the BWS.

Drainage
Construction Drainage
Storm water runoff will be carefully managed during the construction phase. Erosion control BMPs will comply with the State, County, and Federal regulations during all phases of construction. Details of permits required and controls to be put into place are detailed in *Section 3.6.2 Probable Impacts: Surface Water and Drainage*.

Post-Construction Drainage
In compliance with the current City Water Quality Rules, Low Impact Development (LID) post-construction treatment controls will be installed to detain storm water on the site through infiltration, and to filter and treat storm water released off site to the maximum extent practicable. Storm water runoff from the project will be collected through gutters, drain inlets, catch basins, trench drains, and pervious pavement, with a goal of slowing and infiltrating water back into the ground while removing sediment and pollutants (*Section 3.6.2 Probable Impacts and Mitigation Measures: Surface Water and Drainage*). A sub-surface detention chamber will be installed along the makai section of the property along Kamehameha Highway. On-site improvements will both reduce the velocity and volume of runoff compared to existing conditions.

As described in *Section 3.6 Surface Water and Drainage*, the more frequent storm events totaling up to four inches will be 100 percent detained within the sub-surface chamber, and slowly percolate to groundwater. *Table 3-5* shows the reduction in volume over the 24-hour period for various recurrence interval storms. Note the more frequent, smaller storm event of less than four inches will be entirely contained within the detention chamber and infiltration of the storm water will result in no net release off-site.

Peak runoff calculations for the 10-year 1-hour recurrence interval under proposed site conditions project a total flow of 18.39 cubic feet per second (cfs). This is an increase of 8.97 cfs over existing conditions (*Table 6, Appendix H*). Based on the Rules Relating to Storm Drainage Standards dated January 2017 by the City and County DPP, sizing for the sub-surface infiltration chamber has been calculated to capture the 10-year, 1-hour recurrence storm with a maximum capacity of 26,600 cubic feet. Storm water that may leave the site will be slowed to the pre-project flow rate, with sediment and pollutants removed to the maximum extent practicable. Discharge to the off-site DOT drainage system will be at a flow rate equal to the pre-development condition (*Appendix H*).

Table 3-5 Comparative Runoff Volumes for Pre- and Post-Development of the Three Hanapohaku Parcels for 24-Hour Storms of Varying Recurrence Intervals

Recurrence Interval (Years)	24-Hour Rainfall (Inches)	Present Use		Proposed Development				Reduction of Runoff Volume (Cubic Feet)
		Amount of Runoff				Detained Onsite (Cubic Feet)	Net Release (Cubic Feet)	
		Inches	Cubic Feet	Inches	Cubic Feet			
1	3.46	1.750	17,279	2.232	22,038	22,038	0	17,279
2	4.81	2.910	28,732	3.489	34,449	26,600	7,849	20,883
5	6.65	4.586	45,310	5.254	51,876	26,600	25,276	20,034
10	8.07	5.926	58,511	6.637	65,531	26,600	38,931	19,580
25	10.0	7.776	76,777	8.531	84,232	26,600	57,632	19,145
50	11.5	9.229	91,123	10.011	98,845	26,600	72,245	18,878

Notes: 1. Storm rainfall amounts from NOAA Atlas 14.
2. The area of the three Hanapohaku parcels is 2.72 acres.
3. Runoff calculated by the SCS Curve Number (CN) method. CN value for the present land use is 82. CN for the proposed development is 88.
4. Storm water detention to be provided is 26,200 cubic feet.

Electrical Power

Electrical power lines will be placed underground at the rural center. Electrical demand for the restaurant and rural center is estimated at 4,000 ~~kilowatt hours~~ kWh per day. The project will offset its power request from Hawaiian Electric Company through generation of electricity for on-site use of photovoltaic (PV) panels. The panels will be installed both on rooftops and as a canopy to reduce solar radiation on the parking area and provide shade to cars parked below. The PV system will produce approximately 526,000 ~~kilowatt hours~~ kWh annually, approximately one-third of anticipated electrical demand, to offset demand from the electrical grid.

Solid Waste

For the short-term construction period, non-combustible construction and demolition (C&D) debris will be reduced to the extent practicable through re-use and recycling services. The remainder will be handled by the building contractor and deposited to the one privately-owned C&D landfill on Oʻahu. Materials management during construction is discussed in *Section 3.6 Surface Water and Drainage*.

Under long-term operations, solid waste will be generated by commercial tenant at the Pūpūkea Rural Community Center. Waste generation rates vary by the type of commercial use: commercial retail; office; restaurant; medical clinic; and fast food/mobile food trucks. Detailed solid waste generation statistics for Hawaiʻi commercial uses are unavailable. Therefore, waste generation rates developed by CalRecycle (www.CalRecycle.ca.gov) were applied to estimate solid waste production at the center to range from 296 to 345 pounds per day, without accounting for recycling. This is equivalent to 54 to 63 tons per year.

The Pūpūkea rural center will implement significant waste reduction measures through on-site recycling in compliance with City ordinances and as mandated by the landowner. Oʻahu recycling rates are above the national average of 35 percent. Applying this conservative recycling rate to the municipal solid waste estimate for the rural center would reduce the range to between 192 to 224 pounds per day. This is equivalent to 35 to 41 tons per year. Recycled materials collected at the site will be transferred to commercial recycling centers. Lease terms for mobile food trucks operating at the rural center will require take-away food containers to be non-polystyrene.

Commercial-grade trash receptacles will be provided at key locations throughout the site for use by the rural center's customers. Appropriate collection bins to allow tenants to meet recycling requirements will be provided in a consolidated location on site. As described in *Section 3.6 Surface Water and Drainage*, in keeping with the State Water Quality Rules, the consolidated storage area for collection bins will be paved and designed to prevent storm water run-on. Collection bins will be covered to prevent rainwater from entering.

3.17 VISUAL ENVIRONMENT

3.17.1 Existing Conditions

Views of the subject properties from the highway and surrounding area observes the three single-story commercial structures and five mobile food establishments and seating areas, with large iron wood trees along the highway. The view of the surrounding area consists of several single-family homes along Pāhoe Road and the Foodland grocery store and parking lot. For most, the site appears as a disorganized commercial setting, and offers significant opportunities for visual improvement.

Views at the existing project site, as of January 2017, are shown in *Figures 3-~~8~~10* and *3-~~9~~11A-F*.

Scenic Resources and Scenic Views

Within the objectives of the City and County of Honolulu's LUO, there is an emphasis placed upon maintaining and protecting scenic views as a part of open space preservation goals in the North Shore Sustainable Communities Plan. The following are listed Section 3.1.2.7 Scenic Resources and Scenic Views of the North Shore SCP, as significant scenic views in the area of the proposed rural center that should be protected and enhanced:

- Views toward the Waiʻanae Mountains from Farrington Highway, Kaukonahua Road, Kamehameha Highway, and Weed Junction
- Intermittent makai views from Kamehameha Highway between Kawailoa and Sunset Beach
- Stationary views from beach parks and access areas from Kawailoa to Waialeʻe Beach Park
- Mauka views of the Koʻolau Mountains and pali along Kamehameha Highway from Haleʻiwa to Waialeʻe
- Views from the road pullover above Waimea Bay . . . and from the coral formation at Pūpūkea Beach Park
- Lateral views from Pūpūkea Beach Park
- Panoramic view of the coast from Pūpūkea Heights
- Mauka views from nearshore waters

Figure 3-~~8~~10 View Study Photo Key

Figure 3-~~9~~11A View from Kamehameha Highway looking south with subject property to the east.

Figure 3-~~9~~ 11B View of Pāhoe Road looking makai towards Kamehameha Highway and Pūpūkea Beach Park.

Figure 3-~~9~~ 11C View from Pūpūkea Beach Park; looking mauka towards Kamehameha Highway and the subject properties.

Figure 3-~~9~~ 11D View from the Project Site looking makai towards Kamehameha Highway and Pūpūkea Beach Park.

Figure 3-~~9~~ 11E View from Kamehameha Highway looking mauka at the property entry.

Figure 3-~~9~~ 11F View from Kamehameha Highway looking north, with property to the east.

Guidelines pertaining to scenic resources and scenic views are as follows:

- Conduct planning with attention to preservation of natural open space, protecting coastal and mauka views from public roadways, and conserving important viewsheds.
- Evaluate the impact of land use proposals on the visual quality of the landscape, including viewplane and open space considerations.
- Discourage the use and installation of overhead utility lines and poles. Strong consideration should be given to placing replacement and new transmission lines underground. Undergrounding utility lines will enhance view planes and increase highway safety. Whenever possible, relocate or place underground overhead utilities that significantly obstruct public views. If unavoidable, locate any future overhead utilities on the mauka side of the public coastal highway.

Night Lighting
Exterior lighting is arranged in the seating areas adjacent to the mobile food establishments. Exterior lights are pointed down to the ground, and provide limited illumination of select areas within the existing site.

3.17.2 Probable Impacts and Mitigation Measures

Short-Term Construction Views
There will be views of construction activities at the rural center during the 12-month development period. A construction fence will be erected to contain dust and shield views of the site construction activities, such as excavation and vertical construction.

View Plane and Corridor
The rural center will present an aesthetic improvement to area. The architectural design will be consistent with the country character of the North Shore and reflect classic plantation-style architecture with wide, shaded lanai. One- and two-story buildings will be set back from the highway with an open, park-like space along Kamehameha Highway. The small-scale clustered buildings will be linked by meandering walkways with a central green landscaped area that will provide a community gathering place for residents and visitors. Views along Kamehameha Highway will be of native and tropical landscaping punctuated by the one-story ocean sports shop and the setback two-story building. Parking area will be located behind the buildings. Views from the beach park will be of the open central green landscaped area along the highway, with a gradation of landscaping up to and framing the buildings. See *Figure 2-4* for an elevation view of the rural center with the existing setting of the Foodland grocery store and coastal pali backdrop.

There will be no nighttime construction, with limited lighting for site security. Temporary lights for night will utilize 100 percent cutoff, fully shielded luminaires that are mounted high enough off the ground to be directed perpendicular to the ground.

Exterior lighting at the rural center will comply with Section 205A-71(b), which requires all outdoor lights to be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights and man-made structures. Wall-mounted lights will be downlights or otherwise shielded, and lights used in open or parking areas will full cutoff or fully shielded.

3.18 SUMMARY OF PROBABLE IMPACTS

The North Shore area in this EIS is synonymous with the planning region defined in the Revised Ordinances of the City and County of Honolulu Chapter 24, Development Plans: the North Shore extends from Kaʻena Point in the west to Waialeʻe Gulch near Kawela Bay in the east, with Oʻahu's shoreline defining the northern edge and Helemano and the slopes of the Waiʻanae and Koʻolau Mountain Ranges to the south. It is an area characterized by unspoiled natural beauty, world-famous surf, and open expanses of agricultural lands set against dramatic mountains. While residential development has replaced areas of former agricultural land, the *North Shore Sustainable Communities Plan* reflects the City's expectation that it will remain a rural area where physical growth and development are managed to prevent an "undesirable spread of development."

3.18.1 Interrelationships and Cumulative Environmental Impacts

Cumulative impacts refer to potential impacts from the rural center construction and operation in combination with other regional uses that may impact resources such as groundwater, marine resources, and/or traffic. This area of the North Shore is not slated for growth, according to the North Shore SCP. With little exception, other lands on the North Shore falls within the State urban or agricultural land use districts, and zoning allows residential or country uses. There are no currently proposed subdivisions, commercial or resort developments for the region. According to the Transportation Impact Analysis Report prepared for this EIS, no transportation infrastructure improvements are planned for the area around the rural center (*Appendix F*). The discussion of cumulative impacts in the following section identify relevant resource uses occurring in the project area to which the project may contribute to impacts.

The *Pūpūkea Beach Park Master Plan – Final* (January 2015) identifies near-term repair, maintenance actions and capital improvements for which the City Departments of Design and Construction (DDC) and Parks and Recreation (DPR) can request funding. Improvements to address issues at the beach park include renovating existing comfort stations, improving bike and pedestrian pathways away from the highway and parking lot, and resurfacing and marking parking areas. Creation of a viewing platform mauka of Sharks Cove and the "Tidepools" is also included in the Master Plan.

The City and County DPR projects will require a Special Management Area (Major) permit, which in turn requires an environmental assessment. The timeline and funding availability to implement the improvements proposed in the Pūpūkea Beach Master Plan is not known. To date, no capital improvement funds have been designated for the improvements, and it is not possible to include the DPR projects in the cumulative impacts discussion that follows. Assuming all park improvements are conducted according to current Water Quality Standards and permit guidance, in the long term they will improve nearshore water quality by reducing erosion and runoff.

Groundwater

Drinking Water

Foodland current water use has averaged about 2,200 gpd. This use may increase by 15 to 20 percent for proposed landscaping irrigation at the makai end of the parking lot (*Appendix B*).

Projected water use for the overall rural community commercial center site would therefore increase by approximately 6,440 gpd: an additional 6,000 gpd is projected for new uses on the three parcels

to be developed (S*ection 3.5.2 Groundwater – Probable Impacts and Mitigation Measures*), and up to a 20 percent increase for irrigation by Foodland would equal 440 gpd.

Wastewater

Wastewater flow rates for the rural center are estimated to increase by 6,920 gpd over existing conditions (*Section 3-5*). For perspective, this amount is roughly equivalent to the wastewater flow from 11 to 15 single-family homes (at 450 to 600 gpd). The wastewater flow rate from Foodland is assumed to be *status quo* at 2,000 gpd (*Appendix B*). Nutrient removal projected from the new aerobic treatment system and subsequent percolation through the absorption beds and underlying soil vadose zone are conservatively estimated at 80 percent for nitrogen and 90 percent for phosphorus. The wastewater system absorption bed area will be sized at double the design flow requirement to provide full effluent disposal capacity redundancy (*Section 3.16*). Cumulative impacts related to nutrients entering the marine environment are discussed below.

Surface Water / Drainage

The enhancements and additions to the drainage system will reduce surface water volume from the subject parcels and from a portion of the Foodland parcel. The installation of LID BMPs, including subsurface storm water detention on the three parcels, will substantially reduce the suspended and bedload sediment that is currently carried into the marine environment by surface runoff. Off-site discharges will be at a quantity and flow rate equal to or less than the existing flow.

The State of Hawai‘i HDOT ~~HI~~ system that receives flow from the rural center site also collects sheet flow from a 550-foot section of Kamehameha Highway and areas mauka, and routes it to a drain that discharges at a point north of the Sunset Beach Fire Station. Storm water runoff from the Foodland parking lot will be interrupted by the driveway closures; BMPs to reduce sheet flow and detain storm water from the Foodland parking lot will be designed. Flows above what will be captured by the rain gardens will be collected by the DOT drain. On the south side of the Foodland parking lot, runoff will continue to be collected by inlets to the City and County drainage system on Pūpūkea Road.

In addition to the Foodland parking lot, the City drainage system south of Pūpūkea Road collects sheetflow runoff from the road itself, from the Pūpūkea Gardens subdivision, and from approximately 130 acres mauka. This flow includes all of Hakuola Gulch; runoff is conveyed via pipes to a catch basin at the intersection of Pūpūkea Road and Kamehameha Highway. From the catch basin, the City system crosses under Kamehameha Highway and heads south, ultimately discharging near the City comfort station south of the Sunset Beach Fire Station. The project drainage, remaining at or below existing conditions, is a small portion of the existing drainage from the larger area mauka and south of the rural center.

Marine Environment

The nutrient loading projected to the nearshore marine environment has been approximated to increase total nitrogen (TN) by 4.3 percent, possibly bringing the total input at the shoreline from all upgradient sources to a range of 6.8 μM to a maximum of 31.3 μM TN. Correspondingly, the potential increases of total phosphorus (TP) from the project could result in maximum and minimum values at the shoreline of 0.71 μM and 0.37 μM, respectively. These small changes represent less than 1 μM for TN and 0.2 μM for TP and are likely within the natural variability of the groundwater ~~discharge at~~ released along the shoreline.

Traffic

The transportation impact analysis report (TIAR) conducted for the rural community commercial center includes traffic to and from the neighboring Foodland grocery store and documented existing traffic levels representative of summer (August 2016) and winter surf competition / school year traffic volumes (November 2016).

According to the TIAR, no transportation infrastructure improvements are planned in the immediate study area. Therefore, existing lane configuration and traffic controls are expected to remain the same. The TIAR included a conservative one-percent annual growth factor, in addition to providing projected increased vehicle trips anticipated from the construction of the rural center. Under traffic engineering standards, cumulative impacts are significant if the addition of a project exacerbates LOS E or F operations. *Section 3.13 Traffic* summarizes anticipated LOS change from A to B under the peak Saturday hour scenario with the rural center at the signalized Kamehameha Highway/ Pūpūkea Road intersection. This is not a significant long-term or cumulative impact.

3.18.2 Potential Secondary Effects

Secondary effects are defined as those caused by the action (project) later in time or farther removed in distance but are still reasonable foreseeable. These effects are also referred to as indirect effect or indirect impact. For the construction and operation of the rural community commercial center, community members have expressed concern that offsite impacts, including the nearshore environment across the highway from the site, may occur as a result of the project. This EIS has evaluated offsite impacts in the relevant resource section contained in Chapter 3; these impacts are again summarized here, where applicable.

Section 3.5 Groundwater provides an estimate for potential increased nutrients to groundwater and, ultimately, marine waters from the rural center's use of the site. The potential increase in nitrogen and phosphorus from the proposed wastewater treatment system is estimated to be .35 pounds per day (from the existing 8.16 pounds per day flowing through the watershed), and 0.051 pounds per day of Phosphorus (from the existing 0.73 pounds per day flowing through the watershed). This is an increase of 4.3 and 7.0 percent of nitrogen and phosphorus, respectively. Groundwater discharge from the watershed and the rural center site affects approximately 760-feet of shoreline across Kamehameha Highway from the rural center. The impact of the nutrient increase is described under *Marine Environment*, below.

Section 3.5 Surface Water and Drainage describes the new City and County of Honolulu storm water runoff rules, enacted for the protection of O'ahu's surface and marine waters. The drainage system to be installed for the rural center will reduce surface water volume and slow flow of any storm water discharged to the State HDOT~~-HI~~ drainage system, resulting in a positive impact.

Section 3.7 Marine Environment discussed potential impacts to marine water quality and the marine environment from the increased nutrient loading (described above). Increasing the concentration of TN at the shoreline by 4.3 percent from existing conditions would result in a maximum value of about 31.3 μM and a minimum of 6.8 μM. Correspondingly, these increases in groundwater nutrients from the project would result in maximum and minimum values of TP at the shoreline of 0.71 μM and 0.37 μM, respectively. These small changes are less than 1 μM for TN and 0.2 μM for TP are likely within the natural variability of the groundwater discharge at the shoreline, and do not represent a significant change in the composition of groundwater released along this shoreline ~~such discharge~~. The impact is negligable.

Section 3.13 Traffic evaluates the project's impact on the primary controlled intersection in the area (Kamehameha Highway/ Pūpūkea Road). Results of the evaluation show no significant long-term or cumulative impact to traffic related to the project.

3.18.3 Relationship Between Local Short-term Uses of the Environment and the Maintenance and Enhancement of Long-term Productivity

Narrowing the range of beneficial uses of the environment

The project site is zoned B-1 Neighborhood Business District. The site is specifically and uniquely identified in the North Shore SCP as the designated location for a small cluster of commercial and service businesses to meet the needs of the surrounding residential communities. Moreover, the project proposes modest development of approximately 25 percent of the floor area ratio (FAR) allowed under City ordinance for this property. This development proposal reflects sensitivity to scale and context in keeping with the SCP definition of a Rural Community Commercial Center; associated infrastructure is likewise reduced as it supports a smaller development.

Long-term risks to health and safety

The rural community commercial center is not anticipated to pose risks to health or safety. The potential increased nutrient output to groundwater will be minimal and pose no significant impact to the down-gradient marine environment. The Urgent Care clinic will provide a new location for medical care in the Pūpūkea-Sunset Beach communities, adding to medical and urgent care choices on the North Shore.

Foreclosure of Future Options

The project promotes reasonable use of the property and will not foreclose future options.

Trade-offs among short-term and long-term gains and losses

Impacts from construction will occur over the short-term (during the construction period). Potential negative impacts include some increase in noise and dust, and traffic due to construction vehicles. Positive short-term economic impacts from construction jobs are anticipated. Long-term gains include an estimated ~~86~~ 80 full-time jobs, and access to goods and services residents currently travel outside of the region to obtain. The long-term benefits outweigh the relatively short-term impacts during the construction period.

3.18.4 Irreversible and Irretrievable Commitments of Resources

The project proposes a small-scale retail center of ~~30,000~~ 34,500 square feet adjacent to an existing grocery store. Construction materials and labor during construction are the primary irreversible and irretrievable resources. The demand for drinking water and electricity are within the capacities of existing utilities and will be offset by use of efficient fixtures and on-site generation of ~~560,000 kv/yr~~ 526,000 kWh/year photovoltaic electricity. Impacts to groundwater and subsequently to the nearby marine environment are disclosed in this EIS and are determined to not be significant (*Section 3.7*). The irreversible and irretrievable commitment of resources should be weighed against the greater access to goods and services including medical care, and additional job opportunities in the Pūpūkea-Sunset Beach communities that may reduce vehicle trips for some area residents.

3.18.5 Adverse Environmental Effects that Cannot be Avoided

As described in *Section 3.5 Groundwater*, disposal of treated wastewater effluent will slightly increase the groundwater concentrations of nitrogen and phosphorus. While this is an effect from the project that cannot be avoided, the probable impact on water quality and the downgradient marine environment from nutrients would likely be undetectable in the marine environment at distances from the shoreline where marine communities occur (*Section 3.7.1 Marine Environment: Probable Impacts and Mitigation Measures*).

3.19 UNRESOLVED ISSUES

This section provides a discussion of the potential unresolved issues associated with the Proposed Action for the Rural Community Commercial Center.

Kamehameha Highway Improvements and Regional Traffic Solutions. Although the rural center does not generate significant traffic impacts, there are traffic congestion problems on Kamehameha Highway along the North Shore. The State DOT is currently conducting a study of establishing a bypass road for the section of highway near Laniākea Beach, about three miles from the site toward Haleʻiwa. Traffic is particularly bad along this stretch of highway, as well as Waimea Bay, the Foodland Pūpūkea area, and along the popular surfing beaches of ʻEhukai Beach and Sunset Beach. Traffic volumes continue to grow due to the ambient island-wide traffic growth and increasing visitor attention to the North Shore's towns, beaches and mountain trails. Regional traffic mitigation solutions have been posed, such as establishing beach shuttles with organized public parking at lands in Haleʻiwa and Turtle Bay. The timing for implementing such traffic management solutions is undetermined.

Crosswalk on Kamehameha Highway near Pāhoe Road. The rural community commercial center is supported by infrastructure components including improved pedestrian and bicycle connectivity to the bike and pedestrian routes in the community (*Section 2.4.1*). A crosswalk on Kamehameha Highway near Pāhoe Road came directly from a well-received suggestion offered by a community member at the May 2017 meeting of the Sunset Beach Community Association. The project team agreed to consider a crosswalk at the location and included the concept during a scoping meeting with the HDOT. Since presenting the concept in the Draft EIS, other members of the community expressed concerns about the crosswalk. The project team continues to refine the crosswalk safety concepts and will consult with HDOT to determine the suitability of a crosswalk at the Pāhoe Road location. Specific design plans for these improvements on-site and off-site would require sign-off on engineering design and review by the government transportation agencies.

Sidewalk along Foodland Frontage on Pūpūkea Road. The City and County of Honolulu's Department of Planning and Permitting provided a recommendation during the Draft EIS review process that the project install a new sidewalk along the Foodland frontage of Pūpūkea Road. Further discussion is needed to ensure the project can fulfill the requirements for improvements within the City's Right-of-Way.

4.0

RELATIONSHIP OF PROPOSED ACTION TO LAND USE PLANS, POLICIES AND CONTROLS FOR THE AFFECTED AREA

4.0 RELATIONSHIP OF PROPOSED ACTION TO LAND USE PLANS, POLICIES AND CONTROLS FOR THE AFFECTED AREA

4.1 Federal Controls 4-2
4.1.1 Coastal Zone Management Act 4-2
4.1.2 Title III of the Americans with Disability Act 4-2
4.2 State of Hawaiʻi Plans and Controls 4-3
4.2.1 Environmental Impact Statements, Hawaiʻi Revised Statutes Chapter 343 4-3
4.2.2 Hawaiʻi State Plan (HRS Chapter 226) 4-3
4.2.3 Hawaiʻi State Plan, Hawaiʻi Revised Statutes Chapter 226 4-4
4.2.4 Hawaiʻi 2050 Sustainability Plan 4-26
4.2.5 Hawaiʻi State Functional Plans 4-29
4.2.6 Coastal Zone Management, Hawaiʻi Revised Statutes Chapter 205A 4-29
4.2.7 Marine Life Conservation Districts – Pūpūkea (HAR Title 13 Chapter 34) 4-33
4.2.8 Electric Vehicle Parking and Charging 4-34
4.2.9 Complete Streets Policy 4-34
4.2.10 DLNR Makai Watch Program 4-34
4.3 City and County of Honolulu Plans, Policies and Controls 4-35
4.3.1 Revised Ordinances of Honolulu Chapter 25, Special Management Area 4-35
4.3.2 City and County of Honolulu General Plan 4-37
4.3.3 North Shore Sustainable Communities Plan 4-53
4.3.4 Coastal View Study 4-71

An important consideration in evaluating the potential impacts of a proposed action on the environment is how it may conform or conflict with approved or proposed Federal, State, and County land use plans, policies and controls for the affected area. The relationship of the Pūpūkea Rural Commercial Center to the following land use plans, policies and regulatory controls is assessed in this chapter.

4.1 FEDERAL CONTROLS

This section assesses the relationship of the project with primary and applicable Federal regulatory controls, which include the Coastal Zone Management Act and Title III of the Americans with Disabilities Act.

4.1.1 Coastal Zone Management Act

In 1972, the Federal government enacted the Coastal Zone Management Act (CZMA) to effectively manage, use, protect, and develop coastal areas in the U.S. Key goals of the National CZM program include protecting natural resources, managing development in high hazard areas, giving development priority to coastal dependent uses, providing public access for recreation, and coordinating State and Federal actions. Under the CZMA, States are authorized to work in a unified manner with Federal and local governments to develop programs, policies, evaluation criteria, development standards that lend to the effective protection and prudent use of coastal lands and waters. The enforcement authority for the Federal Coastal Management Program (Public Law 104-150, as amended in 1996) has been delegated to the State of Hawaiʻi under Hawaiʻi Revised Statutes (HRS) Chapter 205A, Coastal Zone Management (CZM) Program. The Project's consistency with the State CZM Program is described in *Section 4.2.6*.

In 1990, congress enacted the Coastal Zone Act Reauthorization Amendments (CZARA) by adding a new Section 6217 "Protecting Coastal Waters," which requires that each State with an approved coastal zone management program must develop a Coastal Nonpoint Pollution Control Program (CNPCP) to U.S. Environmental Protection Agency (EPA) and National Oceanic and Atmospheric Administration (NOAA) for approval. The purpose of the program "shall be to develop and implement management measures for nonpoint source pollution to restore and protect coastal waters, working in close conjunction with other State and local authorities". The Hawaiʻi CNPCP follows a watershed approach, and activities are coordinated through Hawaiʻi's Implementation Plan for Polluted Runoff Control with consideration for storm water management.

***Discussion*:** *The Pūpūkea Rural Commercial Community is located within the coastal zone, which is defined by the State of Hawaiʻi as encompassing the entire state. The project improvements are designed to conform to the goals, policies, and objectives of Hawaiʻi's CZM Program. A full discussion of the Project's compatibility with the guiding regulation for the State of Hawaiʻi, HRS 205A, is provided in* Section 4.2.6*. The Project area is within the Special Management Area (SMA) defined by the City and County of Honolulu and will require approval of an SMA permit (Major Use) by the Honolulu City Council as part of the entitlements necessary for the project to proceed. See* Chapter 1, Table 1-1, Required Reviews and Permits*.*

4.1.2 Title III of the American Disabilities Act

In 1991, the Federal government enacted the ADA to provide equal accessibility for persons with disabilities. The ADA Title III covers businesses and nonprofit service providers that are public accommodations, privately operated entities, privately operated transportation, and commercial facilities. Public accommodations include private entities that own, lease, lease to, or operate facilities such as restaurants and retail stores. Public accommodations must comply with basic nondiscrimination requirements that prohibit exclusion, segregation, and unequal treatment. Businesses must comply with specific requirements related to architectural standards for new and altered buildings; reasonable

modifications to policies, practices, and procedures; effective communication with people with hearing, vision, or speech disabilities; and other access requirements. Additionally, public accommodations must remove barriers in existing buildings where it is easy to do so without much difficulty or expense, given the public accommodation's resources.

***Discussion*:** *The Project improvements that qualify under Title III as public accommodations will adhere to architectural standards for new and altered buildings to be ADA-accessible.*

4.2 STATE OF HAWAIʻI PLANS AND CONTROLS

This section assesses the relationship of the proposed project to the State's environmental review process; State Land Use District designations; the Hawaiʻi State Plan; the Hawaiʻi 2050 Sustainability Plan; the Coastal Zone law HRS Chapter 205A; and State Functional Plans.

4.2.1 Environmental Impact Statements, Hawaiʻi Revised Statutes Chapter 343

Under HRS Chapter 343, the State legislature found that the quality of humanity's environment is critical to humanity's well being, that humanity's activities have broad and profound effects upon the interrelations of all components of the environment, and that an environmental review process is necessary to integrate the review of environmental concerns with existing planning processes of the State and counties. This process is to alert decision makers to significant environmental effects which may result from the implementation of certain actions. HRS Chapter 343 states that a process of reviewing environmental effects is desirable because environmental consciousness is enhanced, cooperation and coordination are encouraged, and public participation during the review process benefits all parties involved and society as a whole. As such, the State has established a system of environmental review to ensure that environmental concerns are given appropriate consideration in decision making along with economic and technical considerations.

***Discussion*:** *An EIS is required for this project since the project lies within the Special Management Area (SMA) as defined by the City and County of Honolulu; see Section 4.2.6. This EIS has been prepared in compliance with environmental requirements outlined in HRS Chapter 343 and the implementing Hawaiʻi Administrative Rules (HAR) Chapter 11-200. The EIS Preparation Notice (EISPN) was published by the Office of Environmental Quality Control in its* Environmental Notice *on April 23, 2017. Comment letters received during the EISPN review period and corresponding response letters are included in Chapter 6. The list of agencies and individual parties consulted during the preparation of the EIS is also contained in Chapter 6.*

Revised Ordinances of Honolulu (ROH), Section 25-3.3(c)(1) states that any proposed development within the special management area which requires a special management area use permit be subject to an assessment by the agency in accordance with the procedural steps set forth in HRS Chapter 343. See Section 4.3.1 for consistency with the ROH.

4.2.2 Land Use Commission, Hawaiʻi Revised Statutes Chapter 205

HRS Chapter 205, Land Use Commission, establishes the State Land Use Commission as well as defines the four major land use districts in which all lands in the State of Hawaiʻi are classified. These districts include the following: Urban, Rural, Agricultural, or Conservation. Standards for determining the boundaries for each district and the allowable uses and activities are defined in statute.

***Discussion*:** *The Pūpūkea Rural Community Commercial Center site is within the State Land Use Urban District. The Urban District generally includes lands characterized by "city-like" concentrations of people, structures and services, and also includes vacant areas for future development. Under HRS 205-2(4):* In establishing the boundaries of the districts in each county, the commission shall give consideration to the master plan or general plan of the county. *HRS 205-2(4)(b) states:* Urban districts shall include activities or uses as provided by ordinances or regulations of the county within which the urban district is situated. *The Project's compliance with the relevant County plans is discussed in Section 4.3. The proposed use of the site is consistent with the Urban District and corresponding State Land Use regulations.*

4.2.3 Hawai'i State Plan, Hawai'i Revised Statutes Chapter 226

In 1978, the Hawai'i State Legislature found a need to improve the planning process in the State, to increase the effectiveness of government and private actions, to improve the coordination among different agencies and levels of government, and to provide for the wise use of Hawai'i's resources to guide the future development of the State. HRS Chapter 226, Hawai'i State Planning Act, guides the future long-range development of the State and identifies the goals, objectives, policies, and priorities for the State; provides a basis for determining priorities and allocating limited resources, such as public funds, services, human resources, land, energy, water, and other resources; improves coordination of Federal, State, and County plans, policies, programs, projects, and regulatory activities; and establishes a system for plan formulation and program coordination to provide for an integration of all major State and County activities.

Table 4-1 assesses and evaluates how the Pūpūkea Rural Commercial Center supports the Hawai'i State Plan, as promulgated under HRS Chapter 226. State Plan goals beyond the scope of the project are noted as "N/A."

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Section 226-4: State Goals. In order to guarantee, for the present and future generations, those elements of choice and mobility that insure that individuals and groups may approach their desired levels of self-reliance and self-determination, it shall be the goal of the State to achieve:			
(1) A strong, viable economy, characterized by stability, diversity, and growth, that enables the fulfillment of the needs and expectations of Hawai'i's present and future generations	X		
(2) A desired physical environment, characterized by beauty, cleanliness, quiet, stable natural systems, and uniqueness, that enhances the mental and physical well-being of the people.	X		
(3) Physical, social and economic well-being, for individuals and families in Hawai'i, that nourishes a sense of community responsibility, of caring, and of participation in community life.	X		
***Discussion*:** *The project supports the goals of the State of Hawai'i to achieve a strong, viable economy, albeit at a small scale. The rural center will include a range of goods and services to serve the needs of residents and visitors in the Pūpūkea, Waimea, and Kawailoa communities.*			
Section 226-5: Objective and Policies for Population. (A) It shall be the objective in planning for the State's population to guide population growth to be consistent with the achievement of physical, economic, and social objectives contained in this chapter; (B) To achieve the population objective, it shall be the policy of this State to:			
(1) Manage population growth statewide in a manner that provides increased opportunities for Hawai'i's people to pursue their physical, social and economic aspirations while recognizing the unique needs of each county.			X

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
(2) Encourage an increase in economic activities and employment opportunities on the neighbor islands consistent with community needs and desires.			X
(3) Promote increased opportunities for Hawai'i's people to pursue their socioeconomic aspirations throughout the islands.	X		
(4) Encourage research activities and public awareness programs to foster an understanding of Hawai'i's limited capacity to accommodate population needs and to address concerns resulting from an increase in Hawai'i's population.			X
(5) Encourage federal actions and coordination among major governmental agencies to promote a more balanced distribution of immigrants among states, provided that such actions do not prevent the reunion of immediate family members.			X
(6) Pursue an increase in federal assistance for states with a greater proportion of foreign immigrants relative to their state's population.			X
(7) Plan the development and availability of land and water resources in a coordinated manner so as to provide for the desired levels of growth in each geographic area.			X
Discussion: *The project will not add to Hawai'i's residential population growth. The rural community commercial center will add localized employment opportunities for the Pūpūkea, Waimea, and Kawailoa communities. The State's research activities on population; federal coordination and assistance for immigrants; and development of land and water resources are not applicable to the project.*			
Section 226-6: Objectives and Policies for the Economy in General. (A) Planning for the State's economy in general shall be directed toward achievement of the following objectives:			
(1) Increased and diversified employment opportunities to achieve full employment, increased income and job choice, and improved living standards for Hawai'i's people, while at the same time stimulating the development and expansion of economic activities capitalizing on defense, dual-use, and science and technology assets, particularly on the neighbor islands where employment opportunities may be limited.	X		
(2) A steadily growing and diversified economic base that is not overly dependent on a few industries, and includes the development and expansion of industries on the neighbor islands.	X		
(B) To achieve the general economic objectives, it shall be the policy of this State to:			
(1) Promote and encourage entrepreneurship within Hawaii by residents and nonresidents of the State.	X		
(2) Expand Hawai'i's national and international marketing, communication, and organizational ties, to increase the State's capacity to adjust to and capitalize upon economic changes and opportunities occurring outside the State.			X
(3) Promote Hawai'i as an attractive market for environmentally and socially sound investment activities that benefit Hawai'i's people.	X		
(4) Transform and maintain Hawai'i as a place that welcomes and facilitates innovative activity that may lead to commercial opportunities.			X
(5) Promote innovative activity that may pose initial risks, but ultimately contribute to the economy of Hawai'i.			X
(6) Seek broader outlets for new or expanded Hawai'i business investments.			X
(7) Expand existing markets and penetrate new markets for Hawai'i's products and services.			X
(8) Assure that the basic economic needs of Hawai'i's people are maintained in the event of disruptions in overseas transportation.			X
(9) Strive to achieve a level of construction activity responsive to, and consistent with, state growth objectives.			X
(10) Encourage the formation of cooperatives and other favorable marketing arrangements at the local or regional level to assist Hawai'i's small scale producers, manufacturers, and distributors.	X		

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
(11) Encourage labor-intensive activities that are economically satisfying and which offer opportunities for upward mobility.			X
(12) Encourage innovative activities that may not be labor-intensive, but may otherwise contribute to the economy of Hawai'i.			X
(13) Foster greater cooperation and coordination between the government and private sectors in developing Hawai'i's employment and economic growth opportunities.			X
(14) Stimulate the development and expansion of economic activities which will benefit areas with substantial or expected employment problems.			X
(15) Maintain acceptable working conditions and standards for Hawai'i's workers.	X		
(16) Provide equal employment opportunities for all segments of Hawai'i's population through affirmative action and nondiscrimination measures.	X		
(17) Encourage businesses that have favorable financial multiplier effects within Hawai'i's economy.	X		
(18) Encourage businesses that have favorable financial multiplier effects within Hawai'i's economy, particularly with respect to emerging industries in science and technology.			X
(19) Promote and protect intangible resources in Hawai'i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.	X		
(20) Increase effective communication between the educational community and the private sector to develop relevant curricula and training programs to meet future employment needs in general, and requirements of new, potential growth industries in particular.			X
(21) Foster a business climate in Hawai'i - including attitudes, tax and regulatory policies, and financial and technical assistance programs--that is conducive to the expansion of existing enterprises and the creation and attraction of new business and industry.	X		
Discussion: *The project will create space for local businesses to serve the surrounding communities of Pūpūkea, Waimea, and Kawailoa, and its visitors. The businesses present in the rural center will also provide employment opportunities for residents. Further, Hawai'i's business climate will be served by granting permits to proceed with the project, which will comply with State and City plans and regulations for rural commercial-scale development on the appropriately zoned site.*			
Section 226-7 Objectives and Policies for the Economy – Agriculture. (A) Planning for the State's economy with regard to agriculture shall be directed towards achievement of the following objectives:			
(1) Viability of Hawai'i's sugar and pineapple industries.			X
(2) Growth and development of diversified agriculture throughout the State.			X
(3) An agriculture industry that continues to constitute a dynamic and essential component of Hawai'i's strategic, economic, and social well-being.			X
(B) To achieve the agriculture objectives, it shall be the policy of this State to:			
(1) Establish a clear direction for Hawai'i's agriculture through stakeholder commitment and advocacy.			X
(2) Encourage agriculture by making best use of natural resources.			X
(3) Provide the governor and the legislature with information and options needed for prudent decision making for the development of agriculture.			X
(4) Establish strong relationships between the agricultural and visitor industries for mutual marketing benefits.			X
(5) Foster increased public awareness and understanding of the contributions and benefits of agriculture as a major sector of Hawai'i's economy.			X
(6) Seek the enactment and retention of federal and state legislation that benefits Hawai'i's agricultural industries.			X
(7) Strengthen diversified agriculture by developing an effective promotion, marketing, and distribution system between Hawai'i's food producers and consumers in the State, nation, and world.			X

Table 4-1 Hawai‘i State Plan, Hawai‘i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(8) Support research and development activities that strengthen economic productivity in agriculture, stimulate greater efficiency, and enhance the development of new products and agricultural by-products.			X
(9) Enhance agricultural growth by providing public incentives and encouraging private initiatives.			X
(10) Assure the availability of agriculturally suitable lands with adequate water to accommodate present and future needs.			X
(11) Increase the attractiveness and opportunities for an agricultural education and livelihood.			X
(12) In addition to the State’s priority on food, expand Hawai‘i's agricultural base by promoting growth and development of flowers, tropical fruits and plants, livestock, feed grains, forestry, food crops, aquaculture, and other potential enterprises.			X
(13) Promote economically competitive activities that increase Hawai‘i's agricultural self-sufficiency, including the increased purchase and use of Hawaii-grown food and food products by residents, businesses, and governmental bodies as defined under section 103D104.			X
(14) Promote and assist in the establishment of sound financial programs for diversified agriculture.			X
(15) Institute and support programs and activities to assist the entry of displaced agricultural workers into alternative agricultural or other employment.			X
(16) Facilitate the transition of agricultural lands in economically non-feasible agricultural production to economically viable agricultural uses.			X
(17) Perpetuate, promote, and increase use of traditional Hawaiian farming systems, such as the use of loko i‘a, māi‘a, and irrigated lo‘i, and growth of traditional Hawaiian crops, such as kalo, ‘uala, and ‘ulu.			X
(18) Increase and develop small-scale farms.			X
Discussion: *State policies for the economy related to agriculture are not directly applicable to the project.*			
Section 226-8 Objective and Policies for the Economy - Visitor Industry. (A) Planning for the State's economy with regard to the visitor industry shall be directed towards the achievement of the objective of a visitor industry that constitutes a major component of steady growth for Hawai‘i's economy. (B) To achieve the visitor industry objective, it shall be the policy of this State to:			
(1) Support and assist in the promotion of Hawai‘i's visitor attractions and facilities.			X
(2) Ensure that visitor industry activities are in keeping with the social, economic, and physical needs and aspirations of Hawai‘i's people.			X
(3) Improve the quality of existing visitor destination areas by utilizing Hawai‘i’s strengths in science and technology.			X
(4) Encourage cooperation and coordination between the government and private sectors in developing and maintaining well-designed, adequately serviced visitor industry and related developments which are sensitive to neighboring communities and activities.			X
(5) Develop the industry in a manner that will continue to provide new job opportunities and steady employment for Hawai‘i's people.			X
(6) Provide opportunities for Hawai‘i's people to obtain job training and education that will allow for upward mobility within the visitor industry.			X
(7) Foster a recognition of the contribution of the visitor industry to Hawai‘i's economy and the need to perpetuate the aloha spirit.			X
(8) Foster an understanding by visitors of the aloha spirit and of the unique and sensitive character of Hawai‘i's cultures and values.	X		

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Discussion: *While the project will play a role in supporting residents and visitors to the famed North Shore by providing goods and services within the Pūpūkea-Waimea-Kawailoa communities, the project itself is not promoting growth in the visitor industry. The rural center will include services and shops that cater to the surrounding residential communities as well as visitors and residents from outside the immediate area, in keeping with the guidance of the North Shore Sustainable Communities Plan.*			
Section 226-9 Objective and Policies for the Economy - Federal Expenditures. (A) Planning for the State's economy with regard to federal expenditures shall be directed towards achievement of the objective of a stable federal investment base as an integral component of Hawai'i's economy. (B) To achieve the federal expenditures objective, it shall be the policy of this State to:			
(1) Encourage the sustained flow of federal expenditures in Hawai'i that generates long-term government civilian employment;			X
(2) Promote Hawai'i's supportive role in national defense, in a manner consistent with Hawaii's social, environmental, and cultural goals by building upon dual-use and defense applications to develop thriving ocean engineering, aerospace research and development, and related dual-use technology sectors in Hawaii's economy;			X
(3) Promote the development of federally supported activities in Hawai'i that respect state-wide economic concerns, are sensitive to community needs, and minimize adverse impacts on Hawai'i's environment;			X
(4) Increase opportunities for entry and advancement of Hawai'i's people into federal government service;			X
(5) Promote federal use of local commodities, services, and facilities available in Hawai'i;			X
(6) Strengthen federal-state-county communication and coordination in all federal activities that affect Hawai'i; and			X
(7) Pursue the return of federally controlled lands in Hawai'i that are not required for either the defense of the nation or for other purposes of national importance, and promote the mutually beneficial exchanges of land between federal agencies, the State, and the counties.			X
Discussion: *State policies related to Federal Expenditure are not directly applicable to the project.*			
Section 226-10 Objective and Policies for the Economy - Potential Growth Activities. (A) Planning for the State's economy with regard to potential growth activities shall be directed towards achievement of the objective of development and expansion of potential growth activities that serve to increase and diversify Hawai'i's economic base. (B) To achieve the potential growth activity objective, it shall be the policy of this State to:			
(1) Facilitate investment and employment in economic activities that have the potential to expand and diversify Hawaÿi's economy, including but not limited to diversified agriculture, aquaculture, renewable energy development, creative media, health care, and science and technology-based sectors;			X
(2) Facilitate investment in innovative activity that may pose risks or be less labor-intensive than other traditional business activity, but if successful, will generate revenue in Hawaii through the export of services or products or substitution of imported services or products;			X
(3) Encourage entrepreneurship in innovative activity by academic researchers and instructors who may not have the background, skill, or initial inclination to commercially exploit their discoveries or achievements;			X
(4) Recognize that innovative activity is not exclusively dependent upon individuals with advanced formal education, but that many self-taught, motivated individuals are able, willing, sufficiently knowledgeable, and equipped with the attitude necessary to undertake innovative activity;			X

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(5) Increase the opportunities for investors in innovative activity and talent engaged in innovative activity to personally meet and interact at cultural, art, entertainment, culinary, athletic, or visitor-oriented events without a business focus;			X
(6) Expand Hawai'i's capacity to attract and service international programs and activities that generate employment for Hawai'i's people;			X
(7) Enhance and promote Hawai'i's role as a center for international relations, trade, finance, services, technology, education, culture, and the arts;			X
(8) Accelerate research and development of new energy-related industries based on wind, solar, ocean, and underground resources and solid waste;			X
(9) Promote Hawai'i's geographic, environmental, social, and technological advantages to attract new economic activities into the State;			X
(10) Provide public incentives and encourage private initiative to attract new industries that best support Hawai'i's social, economic, physical, and environmental objectives;			X
(11) Increase research and the development of ocean-related economic activities such as mining, food production, and scientific research;			X
(12) Develop, promote, and support research and educational and training programs that will enhance Hawai'i's ability to attract and develop economic activities of benefit to Hawai'i;			X
(13) Foster a broader public recognition and understanding of the potential benefits of new, growth-oriented industry in Hawai'i;			X
(14) Encourage the development and implementation of joint federal and state initiatives to attract federal programs and projects that will support Hawai'i's social, economic, physical, and environmental objectives;			X
(15) Increase research and development of businesses and services in the telecommunications and information industries;			X
(16) Foster the research and development of nonfossil fuel and energy efficient modes of transportation; and			X
(17) Recognize and promote health care and health care information technology as growth industries.			X
Discussion: *The project will meet the demand for services rather than create new growth. The policies related to federal expenditures for growth activities are not directly applicable to the project.*			
Section 226-10.5 Objectives and Policies for the Economy - Information Industry. (A) Planning for the State's economy with regard to the telecommunications and information technology shall be directed toward recognizing that broadband and wireless communication capability and infrastructure are foundations for an innovative economy and positioning Hawaii as a leader in broadband and wireless communications and applications in the Pacific Region. (B) To achieve the information industry objective, it shall be the policy of this State to:			
(1) Promote efforts to attain the highest speeds of electronic and wireless communication within Hawaii and between Hawaii and the world, and make high speed communication available to all residents and businesses in Hawai'i;			X
(2) Encourage the continued development and expansion of the telecommunications infrastructure serving Hawai'i to accommodate future growth and innovation in Hawai'i's economy;			X
(3) Facilitate the development of new or innovative business and service ventures in the information industry which will provide employment opportunities for the people of Hawai'i;			X
(4) Encourage mainland- and foreign-based companies of all sizes, whether information technology-focused or not, to allow their principals, employees, or contractors to live in and work from Hawaii, using technology to communicate with their headquarters, offices, or customers located out-of-state;			X

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(5) Encourage greater cooperation between the public and private sectors in developing and maintaining a well- designed information industry;			X
(6) Ensure that the development of new businesses and services in the industry are in keeping with the social, economic, and physical needs and aspirations of Hawai'i's people;			X
(7) Provide opportunities for Hawai'i's people to obtain job training and education that will allow for upward mobility within the information industry;			X
(8) Foster a recognition of the contribution of the information industry to Hawai'i's economy; and			X
(9) Assist in the promotion of Hawai'i as a broker, creator, and processor of information in the Pacific.			X
Discussion: *State policies related to the economy's information industry are not directly applicable to the project.*			
Section 226-11 Objectives and Policies for the Physical Environment - Land-based, Shoreline, and Marine Resources. (A) Planning for the State's physical environment with regard to land-based, shoreline and marine resources shall be directed towards achievement of the following objectives:			
(1) Prudent use of Hawai'i's land-based, shoreline, and marine resources.	X		
(2) Effective protection of Hawai'i's unique and fragile environmental resources.	X		
(B) To achieve the land-based, shoreline, and marine resources objectives, it shall be the policy of this State to:			
(1) Exercise an overall conservation ethic in the use of Hawai'i's natural resources.	X		
(2) Ensure compatibility between land-based and water-based activities and natural resources and ecological systems.	X		
(3) Take into account the physical attributes of areas when planning and designing activities and facilities.	X		
(4) Manage natural resources and environs to encourage their beneficial and multiple uses without generating costly or irreparable environmental damage.	X		
(5) Consider multiple uses in watershed areas, provided such uses do not detrimentally affect water quality and recharge functions.			X
(6) Encourage the protection of rare or endangered plant and animal species and habitats native to Hawai'i.	X		
(7) Provide public incentives that encourage private actions to protect significant natural resources from degradation or unnecessary depletion.			X
(8) Pursue compatible relationships among activities, facilities and natural resources.	X		
(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational and scientific purposes.	X		
Discussion: *As discussed in Sections 3.5, 3.6, and 3.7 of this document, the project design and operations will support the objectives and policies for the protection of land-based, shoreline, and marine resources. The project is cognizant of the concerns for wastewater collection, treatment, and disposal. Finding of this EIS show increased storm water retention on the proposed project site, with reduced storm water runoff. Nutrient effects to shallow groundwater from the wastewater system are shown to be minimal, and likely to be within the range of natural variability of groundwater discharge to the nearshore marine waters.*			
Section 226-12 Objective and Policies for the Physical Environment - Scenic, Natural Beauty, and Historic Resources. (A) Planning for the State's physical environment shall be directed towards achievement of the objective of enhancement of Hawai'i's scenic assets, natural beauty, and multi-cultural/historical resources. (B) To achieve the scenic, natural beauty, and historic resources objective, it shall be the policy of this State to:			
(1) Promote the preservation and restoration of significant natural and historic resources.	X		
(2) Provide incentives to maintain and enhance historic, cultural, and scenic amenities.	X		

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
(3) Promote the preservation of views and vistas to enhance the visual and aesthetic enjoyment of mountains, ocean, scenic landscapes, and other natural features.	X		
(4) Protect those special areas, structures, and elements that are an integral and functional part of Hawai'i's ethnic and cultural heritage.	X		
(5) Encourage the design of developments and activities that complement the natural beauty of the islands.	X		
Discussion: *An Archaeological Assessment and a Cultural Impact Assessment were conducted for the project. No archaeological features were identified. The State Historic Preservation Division reviewed the Archaeological Assessment reprot and issued a letter acknowledging its acceptance of the report, in accordance with HAR §13-276-5.* *The design of the rural community commercial center will complement the North Shore character and the scenic view planes of the area. The project will meet the height and setback requirements for B-1 Neighborhood Business zoning designation, and will be landscaped with tropical and native plant species.*			
Section 226-13 Objectives and Policies for the Physical Environment - Land, Air, and Water Quality. (A) Planning for the State's physical environment with regard to land, air, and water quality shall be directed towards achievement of the following objectives:			
(1) Maintenance and pursuit of improved quality in Hawai'i's land, air, and water resources.	X		
(2) Greater public awareness and appreciation of Hawai'i's environmental resources.	X		
(B) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:			
(1) Foster educational activities that promote a better understanding of Hawai'i's limited environmental resources.	X		
(2) Promote the proper management of Hawai'i's land and water resources.	X		
(3) Promote effective measures to achieve desired quality in Hawai'i's surface, ground and coastal waters.	X		
(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai'i's people.	X		
(5) Reduce the threat to life and property from erosion, flooding, tsunamis, hurricanes, earthquakes, volcanic eruptions, and other natural or man-induced hazards and disasters.	X		
(6) Encourage design and construction practices that enhance the physical qualities of Hawai'i's communities.	X		
(7) Encourage urban developments in close proximity to existing services and facilities.	X		
(8) Foster recognition of the importance and value of the land, air, and water resources to Hawai'i's people, their cultures and visitors.	X		
Discussion: *A biological assessment, surface and groundwater resources study, and marine water quality assessment were conducted for the project site. No rare, endangered, or threatened species are present on the project site. The rural center will integrate native plant species into the landscape design.* *The EIS contains analyses of short-term and long-term affects on land, water and air resources; no significant impacts are anticipated to the areas natural resources.*			
Section 226-14 Objective and Policies for Facility Systems - In General. (A) Planning for the State's facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives. (B) To achieve the general facility systems objective, it shall be the policy of this State to:			
(1) Accommodate the needs of Hawai'i's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.	X		
(2) Encourage flexibility in the design and development of facility systems to promote prudent use of resources and accommodate changing public demands and priorities.			X
(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.			X

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(4) Pursue alternative methods of financing programs and projects and cost-saving techniques in the planning, construction, and maintenance of facility systems.	X		
Discussion: *The project supports the objectives and policies for facility systems. Off-site and on-site improvements to surrounding facility systems (water, wastewater, roadways, solid waste, power, and telecommunications) will be coordinated with the appropriate State and County agencies or private utility companies.*			
226-15 Objectives and Policies for Facility Systems - Solid and Liquid Wastes. (A) Planning for the State's facility systems with regard to solid and liquid wastes shall be directed towards the achievement of the following objectives:			
(1) Maintenance of basic public health and sanitation standards relating to treatment and disposal of solid and liquid wastes.	X		
(2) Provision of adequate sewerage facilities for physical and economic activities that alleviate problems in housing, employment, mobility, and other areas.	X		
(B) To achieve solid and liquid waste objectives, it shall be the policy of this State to:			
(1) Encourage the adequate development of sewerage facilities that complement planned growth.	X		
(2) Promote re-use and recycling to reduce solid and liquid wastes and employ a conservation ethic.	X		
(3) Promote research to develop more efficient and economical treatment and disposal of solid and liquid wastes.			X
Discussion: *The project's sensitivity to the waste stream from commercial and retail tenants is reflected in its solid waste management and design of its wastewater system. Solid waste and wastewater disposal systems will be efficiently designed to minimize impacts on existing solid and liquid waste facilities.*			
226-16 Objective and Policies for Facility Systems - Water. (A) Planning for the State's facility systems with regard to water shall be directed towards achievement of the objective of the provision of water to adequately accommodate domestic, agricultural, commercial, industrial, recreational, and other needs within resource capacities. (B) To achieve the facility systems water objective, it shall be the policy of this State to:			
(1) Coordinate development of land use activities with existing and potential water supply.	X		
(2) Support research and development of alternative methods to meet future water requirements well in advance of anticipated needs.			X
(3) Reclaim and encourage the productive use of runoff water and wastewater discharges.	X		
(4) Assist in improving the quality, efficiency, service, and storage capabilities of water systems for domestic and agricultural use.			X
(5) Support water supply services to areas experiencing critical water problems.			X
(6) Promote water conservation programs and practices in government, private industry, and the general public to help ensure adequate water to meet long-term needs.	X		
Discussion: *The Board of Water Supply has determined that its existing water system is adequate to accommodate and supply project demand. Low-flow plumbing fixtures will be utilized.*			
226-17 Objectives and Policies for Facility Systems - Transportation. (A) Planning for the State's facility systems with regard to transportation shall be directed towards the achievement of the following objectives:			
(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.	X		
(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.	X		
(B) To achieve the transportation objectives, it shall be the policy of this State to:			
(1) Design, program, and develop a multi-modal system in conformance with desired growth and physical development as stated in this chapter;			X
(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives;	X		

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties;	X		
(4) Provide for improved accessibility to shipping, docking, and storage facilities;	X		
(5) Promote a reasonable level and variety of mass transportation services that adequately meet statewide and community needs;	X		
(6) Encourage transportation systems that serve to accommodate present and future development needs of communities;	X		
(7) Encourage a variety of carriers to offer increased opportunities and advantages to inter-island movement of people and goods;			X
(8) Increase the capacities of airport and harbor systems and support facilities to effectively accommodate transshipment and storage needs;			X
(9) Encourage the development of transportation systems and programs which would assist statewide economic growth and diversification;	X		
(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawai'i's natural environment;	X		
(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation;	X		
(12) Coordinate intergovernmental land use and transportation planning activities to ensure the timely delivery of supporting transportation infrastructure in order to accommodate planned growth objectives; and	X		
(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.	X		
Discussion: *As discussed in Section 3.13 of this document, 2021 baseline traffic without the project compared with 2021 traffic with the project shows no significant impacts to traffic Based on significance criteria provided by HDOT, the project is not anticipated to result in significant impacts to the surrounding roadway network. While the project will add traffic to Kamehameha Highway and to Pūpūkea Road, the existing and new roadway capacity will allow the addition of vehicle trips to these roadways without substantially increasing travel times and delays for existing users of Kamehameha Highway.*			
226-18 Objectives and Policies for Facility Systems - Energy. (A) Planning for the State's facility systems with regard to energy shall be directed toward the achievement of the following objectives, giving due consideration to all:			
(1) Dependable, efficient, and economical statewide energy systems capable of supporting the needs of the people;			X
(2) Increased energy security and self-sufficiency through the reduction and ultimate elimination of Hawai'i's dependence on imported fuels for electrical generation and ground transportation;			X
(3) Greater diversification of energy generation in the face of threats to Hawai'i's energy supplies and systems;			X
(4) Reduction, avoidance, or sequestration of greenhouse gas emissions from energy supply and use, and	X		
(5) Utility models that make the social and financial interests of Hawaii's utility customers a priority.			X
(B) To achieve the energy objectives, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable energy services to accommodate demand. (C) To further achieve the energy objectives, it shall be the policy of this State to:			
(1) Support research and development as well as promote the use of renewable energy sources;			X
(2) Ensure that the combination of energy supplies and energy-saving systems is sufficient to support the demands of growth;	X		

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(3) Base decisions of least-cost supply-side and demand-side energy resource options on a comparison of their total costs and benefits when a least-cost is determined by a reasonably comprehensive, quantitative, and qualitative accounting of their long-term, direct and indirect economic, environmental, social, cultural, and public health costs and benefits;			X
(4) Promote all cost-effective conservation of power and fuel supplies through measures including: (A) Development of cost-effective demand-side management programs; (B) Education; and (C) Adoption of energy-efficient practices and technologies; (D) Increasing energy efficiency and decreasing energy use in public infrastructure;	X		
(5) Ensure to the extent that new supply-side resources are needed, that the development or expansion of energy systems utilizes the least-cost energy supply option and maximizes efficient technologies;			X
(6) Support research, development, and demonstration and use of energy efficiency, load management, and other demand-side management programs, practices, and technologies;	X		
(7) Promote alternate fuels and energy efficiency;	X		
(8) Support actions that reduce, avoid, or sequester greenhouse gases in utility, transportation, and industrial sector applications;	X		
(9) Support actions that reduce, avoid, or sequester Hawai'i's greenhouse gas emissions through agriculture and forestry initiatives;			X
(10) Provide priority handling and processing for all state and county permits required for renewable energy projects;			X
(11) Ensure that liquefied natural gas is used only as a cost-effective transitional, limited-term replacement of petroleum for electricity generation and does not impede the development and use of other cost-effective renewable energy source; and			X
(12) Promote the development of indigenous geothermal energy resources that are located on public trust land as an affordable and reliable source of firm power for Hawaii.			X
Discussion: *The rural center supports the State's objectives and policies for facility systems regarding energy. The rear parking area will include photovoltaic panels to generate renewable solar energy for the project.*			
226-18.5 Objectives and Policies for Facility Systems - Telecommunications. (A) Planning for the State's telecommunications facility systems shall be directed towards the achievement of dependable, efficient, and economical statewide telecommunications systems capable of supporting the needs of the people. (B) To achieve the telecommunications objective, it shall be the policy of this State to ensure the provision of adequate, reasonably priced, and dependable telecommunications services to accommodate demand. (C) To further achieve the telecommunications objective, it shall be the policy of this State to:			
(1) Facilitate research and development of telecommunications systems and resources;			X
(2) Encourage public and private sector efforts to develop means for adequate, ongoing telecommunications planning;			X
(3) Promote efficient management and use of existing telecommunications systems and services; and	X		
(4) Facilitate the development of education and training of telecommunications personnel.			X
Discussion: *These policies apply more directly to government and are beyond the influence of this small project. The objectives and policies for facility systems telecommunications are not applicable to the project.*			
226-19 Objectives and Policies for Socio-Cultural Advancement - Housing. (A) Planning for the State's socio-cultural advancement with regard to housing shall be directed toward the achievement of the following objectives:			
(1) Greater opportunities for Hawai'i's people to secure reasonably priced, safe, sanitary, and livable homes, located in suitable environments that satisfactorily accommodate the needs and desires of families and individuals, through collaboration and cooperation			X

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
between government and nonprofit and for-profit developers to ensure that more affordable housing is made available to very low-, low- and moderate-income segments of Hawai'i's population.			
(2) The orderly development of residential areas sensitive to community needs and other land uses.			X
(3) The development and provision of affordable rental housing by the State to meet the housing needs of Hawai'i's people.			X
(B) To achieve the housing objectives, it shall be the policy of this State to:			
(1) Effectively accommodate the housing needs of Hawai'i's people.			X
(2) Stimulate and promote feasible approaches that increase housing choices for low-income, moderate-income, and gap-group households.			X
(3) Increase homeownership and rental opportunities and choices in terms of quality, location, cost, densities, style, and size of housing.			X
(4) Promote appropriate improvement, rehabilitation, and maintenance of existing housing units and residential areas.			X
(5) Promote design and location of housing developments taking into account the physical setting, accessibility to public facilities and services, and other concerns of existing communities and surrounding areas.			X
(6) Facilitate the use of available vacant, developable, and underutilized urban lands for housing.			X
(7) Foster a variety of lifestyles traditional to Hawai'i through the design and maintenance of neighborhoods that reflect the culture and values of the community.			X
(8) Promote research and development of methods to reduce the cost of housing construction in Hawai'i.			X
Discussion: *Residential development, such as new condominiums or conversion, is not proposed in this rural community commercial project. As such, the objectives and policies for housing are not applicable to the project.*			
226-20 Objectives and Policies for Socio-Cultural Advancement - Health. (A) Planning for the State's socio-cultural advancement with regard to health shall be directed towards achievement of the following objectives:			
(1) Fulfillment of basic individual health needs of the general public.	X		
(2) Maintenance of sanitary and environmentally healthful conditions in Hawai'i's communities.	X		
(3) Elimination of health disparities by identifying and addressing social determinants of health.			X
(B) To achieve the health objectives, it shall be the policy of this State to:			
(1) Provide adequate and accessible services and facilities for prevention and treatment of physical and mental health problems, including substance abuse.			X
(2) Encourage improved cooperation among public and private sectors in the provision of health care to accommodate the total health needs of individuals throughout the State.			X
(3) Encourage public and private efforts to develop and promote statewide and local strategies to reduce health care and related insurance costs.			X
(4) Foster an awareness of the need for personal health maintenance and preventive health care through education and other measures.			X
(5) Provide programs, services, and activities that ensure environmentally healthful and sanitary conditions.	X		
(6) Improve the State's capabilities in preventing contamination by pesticides and other potentially hazardous substances through increased coordination, education, monitoring, and enforcement.			X
(7) Prioritize programs, services, interventions, and activities that address identified social determinants of health to improve native Hawaiian health and well-being consistent			X

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
with the United States Congress' declaration of policy as codified in title 42 United States Code section 11702, and to reduce health disparities of disproportionately affected demographics, including native Hawaiians, other Pacific Islanders, and Filipinos. The prioritization of affected demographic groups other than native Hawaiians may be reviewed every ten years and revised based on the best available epidemiological and public health data.			
Discussion: *The project is compliant with Department of Health requirements, though the project in and of itself does not have goals to advance the socio-cultural health referred to in this State policy. Among the tenant mix are plans fof an urgent care facility to serve the medical needs of the remote North Shore communities.*			
226-21 Objective and Policies for Socio-Cultural Advancement - Education. (A) Planning for the State's socio-cultural advancement with regard to education shall be directed towards achievement of the objective of the provision of a variety of educational opportunities to enable individuals to fulfill their needs, responsibilities, and aspirations. (B) To achieve the education objective, it shall be the policy of this State to:			
(1) Support educational programs and activities that enhance personal development, physical fitness, recreation, and cultural pursuits of all groups.			X
(2) Ensure the provision of adequate and accessible educational services and facilities that are designed to meet individual and community needs.			X
(3) Provide appropriate educational opportunities for groups with special needs.			X
(4) Promote educational programs which enhance understanding of Hawai'i's cultural heritage.	X		
(5) Provide higher educational opportunities that enable Hawai'i's people to adapt to changing employment demands.			X
(6) Assist individuals, especially those experiencing critical employment problems or barriers, or undergoing employment transitions, by providing appropriate employment training programs and other related educational opportunities.			X
(7) Promote programs and activities that facilitate the acquisition of basic skills, such as reading, writing, computing, listening, speaking, and reasoning.			X
(8) Emphasize quality educational programs in Hawai'i's institutions to promote academic excellence.			X
(9) Support research programs and activities that enhance the education programs of the State.			X
Discussion: *The project's objectives and policies do not focus on education as outlined in this State policy.*			
226-22 Objective and Policies for Socio-Cultural Advancement - Social Services. (A) Planning for the State's socio-cultural advancement with regard to social services shall be directed towards the achievement of the objective of improved public and private social services and activities that enable individuals, families, and groups to become more self-reliant and confident to improve their well-being. (B) To achieve the social service objective, it shall be the policy of the State to:			
(1) Assist individuals, especially those in need of attaining a minimally adequate standard of living and those confronted by social and economic hardship conditions, through social services and activities within the State's fiscal capacities.			X
(2) Promote coordination and integrative approaches among public and private agencies and programs to jointly address social problems that will enable individuals, families, and groups to deal effectively with social problems and to enhance their participation in society.			X
(3) Facilitate the adjustment of new residents, especially recently arrived immigrants, into Hawai'i's communities.			X
(4) Promote alternatives to institutional care in the provision of long-term care for elder and disabled populations.			X

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(5) Support public and private efforts to prevent domestic abuse and child molestation, and assist victims of abuse and neglect.			X
(6) Promote programs which assist people in need of family planning services to enable them to meet their needs.			X
Discussion: *State policies related to Social Services are not directly applicable to the project.*			
226-23 Objective and Policies for Socio-Cultural Advancement - Leisure. (A) Planning for the State's socio-cultural advancement with regard to leisure shall be directed towards the achievement of the objective of the adequate provision of resources to accommodate diverse cultural, artistic, and recreational needs for present and future generations. (B) To achieve the leisure objective, it shall be the policy of this State to:			
(1) Foster and preserve Hawai'i's multi-cultural heritage through supportive cultural, artistic, recreational, and humanities-oriented programs and activities.	X		
(2) Provide a wide range of activities and facilities to fulfill the cultural, artistic, and recreational needs of all diverse and special groups effectively and efficiently.	X		
(3) Enhance the enjoyment of recreational experiences through safety and security measures, educational opportunities, and improved facility design and maintenance.	X		
(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.	X		
(5) Ensure opportunities for everyone to use and enjoy Hawai'i's recreational resources.	X		
(6) Assure the availability of sufficient resources to provide for future cultural, artistic, and recreational needs.	X		
(7) Provide adequate and accessible physical fitness programs to promote the physical and mental well-being of Hawai'i's people.	X		
(8) Increase opportunities for appreciation and participation in the creative arts, including the literary, theatrical, visual, musical, folk, and traditional art forms.	X		
(9) Encourage the development of creative expression in the artistic disciplines to enable all segments of Hawai'i's population to participate in the creative arts.	X		
(10) Assure adequate access to significant natural and cultural resources in public ownership.			X
Discussion: *The rural community commercial center is located in the center of Pūpūkea, and will provide a range of leisure and surf related shops and services. The project also supports cultural and creative arts and plans to incorporate community gathering events into the open space fronting Kamehameha Highway.*			
226-24 Objective and Policies for Socio-Cultural Advancement - Individual Rights and Personal Well-Being (A) Planning for the State's socio-cultural advancement with regard to individual rights and personal well-being shall be directed towards achievement of the objective of increased opportunities and protection of individual rights to enable individuals to fulfill their socio-economic needs and aspirations. (B) To achieve the individual rights and personal well- being objective, it shall be the policy of this State to:			
(1) Provide effective services and activities that protect individuals from criminal acts and unfair practices and that alleviate the consequences of criminal acts in order to foster a safe and secure environment.			X
(2) Uphold and protect the national and state constitutional rights of every individual.	X		
(3) Assure access to, and availability of, legal assistance, consumer protection, and other public services which strive to attain social justice.			X
(4) Ensure equal opportunities for individual participation in society.	X		
Discussion: *The rural community commercial center supports the State's objectives and policies for socio-cultural advancement with regards to individual rights and personal well-being. The policies related to providing protection services from criminal acts and assuring access to legal assistance and consumer protection are primarily the State's responsibility, and as such is not applicable to the project.*			

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
226-25 Objective and Policies for Socio-Cultural Advancement - Culture. (A) Planning for the State's socio- cultural advancement with regard to culture shall be directed toward the achievement of the objective of enhancement of cultural identities, traditions, values, customs, and arts of Hawai'i's people. (B) To achieve the culture objective, it shall be the policy of this State to:			
(1) Foster increased knowledge and understanding of Hawai'i's ethnic and cultural heritages and the history of Hawai'i.	X		
(2) Support activities and conditions that promote cultural values, customs, and arts that enrich the lifestyles of Hawai'i's people and which are sensitive and responsive to family and community needs.	X		
(3) Encourage increased awareness of the effects of proposed public and private actions on the integrity and quality of cultural and community lifestyles in Hawai'i.	X		
(4) Encourage the essence of the aloha spirit in people's daily activities to promote harmonious relationships among Hawai'i's people and visitors.	X		
Discussion: *The project supports the State's objectives and policies for socio-cultural advancement with regards to culture. The ethnic and cultural heritage of the Pūpūkea, Waimea, and Kawailoa region was examined in the CIA for this project.*			
226-26 Objectives and Policies for Socio-Cultural Advancement - Public Safety. (A) Planning for the State's socio- cultural advancement with regard to public safety shall be directed towards the achievement of the following objectives:			
(1) Assurance of public safety and adequate protection of life and property for all people.	X		
(2) Optimum organizational readiness and capability in all phases of emergency management to maintain the strength, resources, and social and economic well-being of the community in the event of civil disruptions, wars, natural disasters, and other major disturbances.	X		
(3) Promotion of a sense of community responsibility for the welfare and safety of Hawai'i's people.	X		
(B) To achieve the public safety objectives, it shall be the policy of this State to:			
(1) Ensure that public safety programs are effective and responsive to community needs.			X
(2) Encourage increased community awareness and participation in public safety programs.			X
(C) To further achieve public safety objectives related to criminal justice, it shall be the policy of this State to:			
(1) Support criminal justice programs aimed at preventing and curtailing criminal activities.			X
(2) Develop a coordinated, systematic approach to criminal justice administration among all criminal justice agencies.			X
(3) Provide a range of correctional resources which may include facilities and alternatives to traditional incarceration in order to address the varied security needs of the community and successfully reintegrate offenders into the community.			X
(D) To further achieve public safety objectives related to emergency management, it shall be the policy of this State to:			
(1) Ensure that responsible organizations are in a proper state of readiness to respond to major war-related, natural, or technological disasters and civil disturbances at all times.			X
(2) Enhance the coordination between emergency management programs throughout the State.			X
Discussion: *The project will not adversely affect police, fire, or emergency services to the communities of Pūpūkea, Waimea, and Kawailoa. The policies related to ensuring the provision of public safety and criminal justice programs are the responsibility of the State and City and as such are not applicable to the project.*			
226-27 Objectives and Policies for Socio-Cultural Advancement - Government. (A) Planning the State's socio-cultural advancement with regard to government shall be directed towards the achievement of the following objectives:			
(1) Efficient, effective, and responsive government services at all levels in the State.			X

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(2) Fiscal integrity, responsibility, and efficiency in the state government and county governments.			X
(B) To achieve the government objectives, it shall be the policy of this State to:			
(1) Provide for necessary public goods and services not assumed by the private sector.			X
(2) Pursue an openness and responsiveness in government that permits the flow of public information, interaction, and response.			X
(3) Minimize the size of government to that necessary to be effective.			X
(4) Stimulate the responsibility in citizens to productively participate in government for a better Hawai'i.			X
(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.			X
(6) Provide for a balanced fiscal budget.			X
(7) Improve the fiscal budgeting and management system of the State.			X
(8) Promote the consolidation of state and county governmental functions to increase the effective and efficient delivery of government programs and services and to eliminate duplicative services wherever feasible.			X
Discussion: *Policies related to the operation of government are the responsibility of the State and are not directly applicable to the project.*			
Hawai'i State Plan - HRS Ch. 226 - Part III. Priority Guideline			
226-101 Purpose. The purpose of this part is to establish overall priority guidelines to address areas of statewide concern.			
226-102 Overall Direction. The State shall strive to improve the quality of life for Hawai'i's present and future population through the pursuit of desirable courses of action in seven ~~five~~ major areas of statewide concern which merit priority attention: economic development, population growth and land resource management, affordable housing, crime and criminal justice, ~~and~~ quality education, principles of sustainability, and climate change adaption.			
226-103 Economic Priority Guidelines. (A) Priority guidelines to stimulate economic growth and encourage business expansion and development to provide needed jobs for Hawai'i's people and achieve a stable and diversified economy:			
(1) Seek a variety of means to increase the availability of investment capital for new and expanding enterprises. (a) Encourage investments which:			
(i) Reflect long term commitments to the State;	X		
(ii) Rely on economic linkages within the local economy;	X		
(iii) Diversify the economy;	X		
(iv) Reinvest in the local economy;	X		
(v) Are sensitive to community needs and priorities; and	X		
(vi) Demonstrate a commitment to provide management opportunities to Hawai'i residents.	X		
(b) Encourage investments in innovative activities that have a nexus to the State, such as:			
(i) Present or former residents acting as entrepreneurs or principals;	X		
(ii) Academic support from an institution of higher education in Hawaii;			X
(iii) Investment interest from Hawaii residents;			X
(iv) Resources unique to Hawaii that are required for innovative activity; and			X
(v) Complementary or supportive industries or government programs or projects.			X
(2) Encourage the expansion of technological research to assist industry development and support the development and commercialization of technological advancements.			X
(3) Improve the quality, accessibility, and range of services provided by government to business, including data and reference services and assistance in complying with governmental regulations.			X

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(4) Seek to ensure that state business tax, labor laws, and administrative policies are equitable, rational, and predictable.			X
(5) Streamline the building and development permit and review process, and eliminate or consolidate other burdensome or duplicative governmental requirements imposed on business, where public health, safety and welfare would not be adversely affected.			X
(6) Encourage the formation of cooperatives and other favorable marketing or distribution arrangements at the regional or local level to assist Hawai'i's small-scale producers, manufacturers, and distributors.			X
(7) Continue to seek legislation to protect Hawai'i from transportation interruptions between Hawai'i and the continental United States.			X
(8) Provide public incentives and encourage private initiative to develop and attract industries which promise long-term growth potentials and which have the following characteristics:			
(a) An industry that can take advantage of Hawai'i's unique location and available physical and human resources.	X		
(b) A clean industry that would have minimal adverse effects on Hawai'i's environment.			X
(c) An industry that is willing to hire and train Hawai'i's people to meet the industry's labor needs at all levels of employment.	X		
(d) An industry that would provide reasonable income and steady employment.	X		
(9) Support and encourage, through educational and technical assistance programs and other means, expanded opportunities for employee ownership and participation in Hawai'i business.			X
(10) Enhance the quality of Hawai'i's labor force and develop and maintain career opportunities for Hawai'i's people through the following actions:			
(A) Expand vocational training in diversified agriculture, aquaculture, information industry, and other areas where growth is desired and feasible.			X
(B) Encourage more effective career counseling and guidance in high schools and post-secondary institutions to inform students of present and future career opportunities.			X
(C) Allocate educational resources to career areas where high employment is expected and where growth of new industries is desired.			X
(D) Promote career opportunities in all industries for Hawai'i's people by encouraging firms doing business in the State to hire residents.	X		
(E) Promote greater public and private sector cooperation in determining industrial training needs and in developing relevant curricula and on- the-job training opportunities.			X
(F) Provide retraining programs and other support services to assist entry of displaced workers into alternative employment.			X
(B) Priority guidelines to promote the economic health and quality of the visitor industry:			
(1) Promote visitor satisfaction by fostering an environment which enhances the Aloha Spirit and minimizes inconveniences to Hawai'i's residents and visitors.	X		
(2) Encourage the development and maintenance of well- designed, adequately serviced hotels and resort destination areas which are sensitive to neighboring communities and activities and which provide for adequate shoreline setbacks and beach access.			X
(3) Support appropriate capital improvements to enhance the quality of existing resort destination areas and provide incentives to encourage investment in upgrading, repair, and maintenance of visitor facilities.			X
(4) Encourage visitor industry practices and activities which respect, preserve, and enhance Hawai'i's significant natural, scenic, historic, and cultural resources.	X		
(5) Develop and maintain career opportunities in the visitor industry for Hawai'i's people, with emphasis on managerial positions.			X
(6) Support and coordinate tourism promotion abroad to enhance Hawai'i's share of existing and potential visitor markets.	X		

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(7) Maintain and encourage a more favorable resort investment climate consistent with the objectives of this chapter.			X
(8) Support law enforcement activities that provide a safer environment for both visitors and residents alike.	X		
(9) Coordinate visitor industry activities and promotions to business visitors through the state network of advanced data communication techniques.			X
(C) Priority guidelines to promote the continued viability of the sugar and pineapple industries:			
(1) Provide adequate agricultural lands to support the economic viability of the sugar and pineapple industries.			X
(2) Continue efforts to maintain federal support to provide stable sugar prices high enough to allow profitable operations in Hawai'i.			X
(3) Support research and development, as appropriate, to improve the quality and production of sugar and pineapple crops.			X
(D) Priority guidelines to promote the growth and development of diversified agriculture and aquaculture:			
(1) Identify, conserve, and protect agricultural and aquacultural lands of importance and initiate affirmative and comprehensive programs to promote economically productive agricultural and aquacultural uses of such lands.			X
(2) Assist in providing adequate, reasonably priced water for agricultural activities.			X
(3) Encourage public and private investment to increase water supply and to improve transmission, storage, and irrigation facilities in support of diversified agriculture and aquaculture.			X
(4) Assist in the formation and operation of production and marketing associations and cooperatives to reduce production and marketing costs.			X
(5) Encourage and assist with the development of a waterborne and airborne freight and cargo system capable of meeting the needs of Hawai'i's agricultural community.			X
(6) Seek favorable freight rates for Hawai'i's agricultural products from inter-island and overseas transportation operators.			X
(7) Encourage the development and expansion of agricultural and aquacultural activities which offer long-term economic growth potential and employment opportunities.			X
(8) Continue the development of agricultural parks and other programs to assist small independent farmers in securing agricultural lands and loans.			X
(9) Require agricultural uses in agricultural subdivisions and closely monitor the uses in these subdivisions.			X
(10) Support the continuation of land currently in use for diversified agriculture.			X
(11) Encourage residents and visitors to support Hawaii's farmers by purchasing locally grown food and food products.			X
(E) Priority guidelines for water use and development:			
(1) Maintain and improve water conservation programs to reduce the overall water consumption rate.	X		
(2) Encourage the improvement of irrigation technology and promote the use of non-potable water for agricultural and landscaping purposes.	X		
(3) Increase the support for research and development of economically feasible alternative water sources.			X
(4) Explore alternative funding sources and approaches to support future water development programs and water system improvements.			X
(F) Priority guidelines for energy use and development:			
(1) Encourage the development, demonstration, and commercialization of renewable energy sources.	X		
(2) Initiate, maintain, and improve energy conservation programs aimed at reducing energy waste and increasing public awareness of the need to conserve energy.	X		

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(3) Provide incentives to encourage the use of energy conserving technology in residential, industrial, and other buildings.			X
(4) Encourage the development and use of energy conserving and cost-efficient transportation systems.			X
(G) Priority guidelines to promote the development of the information industry:			
(1) Establish an information network that will serve as the catalyst for establishing a viable information industry in Hawai'i.			X
(2) Encourage the development of services such as financial data processing, products and services exchange, foreign language translations, telemarketing, teleconferencing, a twenty-four-hour international stock exchange, international banking, and a Pacific Rim management center.			X
(3) Encourage the development of small businesses in the information field such as software development, the development of new information systems and peripherals, data conversion and data entry services, and home or cottage services such as computer programming, secretarial, and accounting services.			X
(4) Encourage the development or expansion of educational and training opportunities for residents in the information and telecommunications fields.			X
(5) Encourage research activities, including legal research in the information and telecommunications fields.			X
(6) Support promotional activities to market Hawai'i's information industry services.			X
(7) Encourage the location or co-location of telecommunication or wireless information relay facilities in the community, including public areas, where scientific evidence indicates that the public health, safety, and welfare would not be adversely affected.			X
Discussion: *The project supports the State's economic priority guidelines as it relates to promoting locally owned and operated businesses. The project will also serve visitors to the island, and strongly supports the promotion of the Aloha spirit and law enforcement that will provide safe environments for residents and visitors alike. The design and operations of the rural community commercial center also support the priority guidelines for water and energy use. Photovoltaic panels will be installed in the rear parking lot to provide a renewable energy source for the shops, amounting to approximately 526,000 kWh per year.*			
226-104 Population Growth and Land Resources Priority Guidelines. (A) Priority guidelines to effect desired statewide growth and distribution:			
(1) Encourage planning and resource management to insure that population growth rates throughout the State are consistent with available and planned resource capacities and reflect the needs and desires of Hawai'i's people.			X
(2) Manage a growth rate for Hawai'i's economy that will parallel future employment needs for Hawai'i's people.			X
(3) Ensure that adequate support services and facilities are provided to accommodate the desired distribution of future growth throughout the State.			X
(4) Encourage major state and federal investments and services to promote economic development and private investment to the neighbor islands, as appropriate.			X
(5) Explore the possibility of making available urban land, low-interest loans, and housing subsidies to encourage the provision of housing to support selective economic and population growth on the neighbor islands.			X
(6) Seek federal funds and other funding sources outside the State for research, program development, and training to provide future employment opportunities on the neighbor islands.			X
(7) Support the development of high technology parks on the neighbor islands.			X
(B) Priority guidelines for regional growth distribution and land resource utilization:			
(1) Encourage urban growth primarily to existing urban areas where adequate public facilities are already available or can be provided with reasonable public expenditures, and away from areas where other important benefits are present, such as protection of important agricultural land or preservation of lifestyles.	X		

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
(2) Make available marginal or nonessential agricultural lands for appropriate urban uses while maintaining agricultural lands of importance in the agricultural district.			X
(3) Restrict development when drafting of water would result in exceeding the sustainable yield or in significantly diminishing the recharge capacity of any groundwater area.			X
(4) Encourage restriction of new urban development in areas where water is insufficient from any source for both agricultural and domestic use.			X
(5) In order to preserve green belts, give priority to state capital-improvement funds which encourage location of urban development within existing urban areas except where compelling public interest dictates development of a noncontiguous new urban core.			X
(6) Seek participation from the private sector for the cost of building infrastructure and utilities, and maintaining open spaces.	X		
(7) Pursue rehabilitation of appropriate urban areas.	X		
(8) Support the redevelopment of Kaka'ako into a viable residential, industrial, and commercial community.			X
(9) Direct future urban development away from critical environmental areas or impose mitigating measures so that negative impacts on the environment would be minimized.	X		
(10) Identify critical environmental areas in Hawai'i to include but not be limited to the following: watershed and recharge areas; wildlife habitats (on land and in the ocean); areas with endangered species of plants and wildlife; natural streams and water bodies; scenic and recreational shoreline resources; open space and natural areas; historic and cultural sites; areas particularly sensitive to reduction in water and air quality; and scenic resources.			X
(11) Identify all areas where priority should be given to preserving rural character and lifestyle.	X		
(12) Utilize Hawai'i's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.	X		
(13) Protect and enhance Hawai'i's shoreline, open spaces, and scenic resources.	X		
Discussion: *The project supports the State's population growth and land resources priority guidelines. The project site is designated as Urban in the State Land Use Ordinance, and is identified as Rural Community Commercial Center lands in the City's North Shore SCP. The rural community commercial center will develop the subject parcels to rehabilitate the existing rural commercial area for goods and services complementary to Foodland grocery store for the residents and visitors to the North Shore. The project design and scale strives to retain the rural characteristics of the North Shore, and is sensitive to preserving existing scenic views as outlined in the City's North Shore Sustainable Communities Plan (NSSCP). The owners of the project, Hanapohaku, are committed to sustaining the environmental health of the Pūpūkea watershed through appropriate LID Best Management Practices and wastewater minimization.*			
226-105 Crime and Criminal Justice Priority Guidelines. (A) Priority Guidelines in the Area of Crime and Criminal Justice:			
(1) Support law enforcement activities and other criminal justice efforts that are directed to provide a safer environment.			X
(2) Target state and local resources on efforts to reduce the incidence of violent crime and on programs relating to the apprehension and prosecution of repeat offenders.			X
(3) Support community and neighborhood program initiatives that enable residents to assist law enforcement agencies in preventing criminal activities.			X
(4) Reduce overcrowding or substandard conditions in correctional facilities through a comprehensive approach among all criminal justice agencies which may include sentencing law revisions and use of alternative sanctions other than incarceration for persons who pose no danger to their community.			X

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
(5) Provide a range of appropriate sanctions for juvenile offenders, including community-based programs and other alternative sanctions.			X
(6) Increase public and private efforts to assist witnesses and victims of crimes and to minimize the costs of victimization.			X
Discussion: *Policies related to public safety are primarily the responsibility of government agencies and are not directly applicable to the project.*			
226-106 Affordable Housing Priority Guidelines. (A) Priority guidelines for the provision of affordable housing:			
(1) Seek to use marginal or nonessential agricultural land and public land to meet housing needs of low- and moderate-income and gap-group households.			X
(2) Encourage the use of alternative construction and development methods as a means of reducing production costs.			X
(3) Improve information and analysis relative to land availability and suitability for housing.			X
(4) Create incentives for development which would increase home ownership and rental opportunities for Hawai'i's low- and moderate-income households, gap-group households, and residents with special needs.			X
(5) Encourage continued support for government or private housing programs that provide low interest mortgages to Hawai'i's people for the purchase of initial owner- occupied housing.			X
(6) Encourage public and private sector cooperation in the development of rental housing alternatives.			X
(7) Encourage improved coordination between various agencies and levels of government to deal with housing policies and regulations.			X
(8) Give higher priority to the provision of quality housing that is affordable for Hawai'i's residents and less priority to development of housing intended primarily for individuals outside of Hawai'i.			X
Discussion: *State policies related to affordable housing are primarily the responsibility of government agencies and are not directly applicable to the project.*			
226-107 Quality Education Priority Guidelines. (A) Priority guidelines to promote quality education:			
(1) Pursue effective programs which reflect the varied district, school, and student needs to strengthen basic skills achievement;			X
(2) Continue emphasis on general education "core" requirements to provide common background to students and essential support to other university programs;			X
(3) Initiate efforts to improve the quality of education by improving the capabilities of the education work force;			X
(4) Promote increased opportunities for greater autonomy and flexibility of educational institutions in their decision-making responsibilities;			X
(5) Increase and improve the use of information technology in education by the availability of telecommunications equipment for:			X
(a) The electronic exchange of information;			X
(b) Statewide electronic mail;			X
(c) Access to the Internet;			X
Encourage programs that increase the public's awareness and understanding of the impact of information technologies on our lives;			X
(6) Pursue the establishment of Hawaii's public and private universities and colleges as research and training centers of the Pacific;			X
(7) Develop resources and programs for early childhood education;			X
(8) Explore alternatives for funding and delivery of educational services to improve the overall quality of education; and			X
(9) Strengthen and expand educational programs and services for students with special needs.			X
Discussion: *State policies related to quality education are primarily the responsibility of State agencies and are not directly applicable to the project.*			

Table 4-1 Hawai'i State Plan, Hawai'i Revised Statutes, Chapter 226 S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
226-108 Sustainability. (A) Priority guidelines to promote sustainability shall include:			
(1) Encourage balanced economic, social, community, and environmental priorities;	X		
(2) Encourage planning that respects and promotes living within the natural resources and limits of the State;	X		
(3) Promote a diversified and dynamic economy;	X		
4) Encourage respect for the host culture;	X		
(5) Promote decisions based on meeting the needs of the present without compromising the needs of future generations;	X		
(6) Consider the principles of the ahupua'a system; and	X		
(7) Emphasize that everyone, including individuals, families, communities, businesses, and government, has the responsibility for achieving a sustainable Hawai'i.	X		
Discussion: *Due to project's guiding principles of community, environmental protection, local entrepreneurship, and sustainability and its proximity to Pūpūkea Beach Park, the project strongly supports the State's priority guidelines related to sustainability through a number of its planning and design elements.*			
226-109 Climate Change Adaptation Priority Guidelines. (A) Priority guidelines to prepare the State to address the impacts of climate change, including impacts to the areas of agriculture; conservation lands; coastal and nearshore marine areas; natural and cultural resources; education; energy; higher education; health; historic preservation; water resources; the built environment, such as housing, recreation, transportation; and the economy shall:			
(1) Ensure that Hawaii's people are educated, informed, and aware of the impacts climate change may have on their communities;	X		
(2) Encourage community stewardship groups and local stakeholders to participate in planning and implementation of climate change policies;	X		
(3) Invest in continued monitoring and research of Hawaii's climate and the impacts of climate change on the State;	X		
(4) Consider native Hawaiian traditional knowledge and practices in planning for the impacts of climate change;	X		
(5) Encourage the preservation and restoration of natural landscape features, such as coral reefs, beaches and dunes, forests, streams, floodplains, and wetlands, that have the inherent capacity to avoid, minimize, or mitigate the impacts of climate change;	X		
(6) Explore adaptation strategies that moderate harm or exploit beneficial opportunities in response to actual or expected climate change impacts to the natural and built environments;	X		
(7) Promote sector resilience in areas such as water, roads, airports, and public health, by encouraging the identification of climate change threats, assessment of potential consequences, and evaluation of adaptation options;	X		
(8) Foster cross-jurisdictional collaboration between county, state, and federal agencies and partnerships between government and private entities and other nongovernmental entities, including nonprofit entities;	X		
(9) Use management and implementation approaches that encourage the continual collection, evaluation, and integration of new information and strategies into new and existing practices, policies, and plans; and			
(10) Encourage planning and management of the natural and built environments that effectively integrate climate change policy.	X		
Discussion: *Climate change affects everything in the State of Hawai'i, including the environment and its inhabitants. The project supports the State's priority guidelines for Climate Change Adaptation.The project is utilizing photovoltaic panels to take advantage of the daylight hours to produce renewable energy for the project and reduce the project's demand on fossil fuels.*			

4.2.4 Hawai‘i 2050 Sustainability Plan

In 2005, the Hawai‘i State Legislature determined that the State of Hawai‘i should be responsible not only for resolving current public needs, but provide guidance to assure that the preferred vision and goals for Hawai‘i’s future are met. Recognizing that the present generation must address sustainability issues essential to maintaining Hawai‘i’s quality of life for future generations, the State Legislature enacted Act 8 (2005), which provided for the development of a Sustainability Plan to address the vital needs of Hawai‘i through the year 2050. Act 8 then established the Hawai‘i 2050 Sustainability Task Force to review the Hawai‘i State Plan and the State’s comprehensive planning system and promulgated the creation of the Hawai‘i 2050 Sustainability Plan (Hawai‘i 2050). Hawai‘i 2050 has as its main tenants a respect for culture, character, beauty, and history of the state’s island communities; balance among economic, community, and environmental priorities; and an effort to meet the needs of the present without compromising the ability of future generations to meet their own needs. Hawai‘i 2050 defines five goals intended to lead toward a sustainable future for Hawai‘i. These goals are accompanied by specific strategic actions for implementation and indicators to measure the success or failure of these actions over time. *Table 4-2* provides and evaluation and summary of the project’s compatibility with Hawai‘i 2050.

Table 4-2 Hawai‘i 2050 Sustainability Plan (SB2532 HD1, 2010 Legislative Session) **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
The State’s first definition of sustainability: A. Hawai‘i that achieves the following: • Respects the culture, character, beauty and history of our state’s island communities • Strikes a balance among economic, social and community, and environmental priorities • Meets the needs of the present without compromising the ability of future generations to meet their own needs			
GOAL 1: Living sustainably is part of our daily practice in Hawai‘i.			
Develop a sustainability ethic.	X		
Integrate sustainability principles and practices into public and private school curricula.			X
Develop a statewide marketing and public awareness campaign on sustainability principles and practices.			X
Conduct ongoing forums and cross-sector dialogue to promote collaboration and progress on achieving Hawai‘i’s sustainability goals.			X
Continually monitor trends and conditions in Hawai‘i’s economy, society and natural systems.			X
Discussion: *Providing additional services and goods in the Pūpūkea, Waimea, and Kawailoa communities will allow residents to walk or bike, or reduce drive time, and to “shop local.” A number of sustainable design elements are being incorporated into the project, including open space, landscape preservation, stormwater management, utilization of green building materials, recycling, water conservation, energy conservation, and renewable energy generation.*			
GOAL 2: Our diversified and globally competitive economy enables us to meaningfully live, work and play in Hawai‘i.			
Develop a more diverse and resilient economy.	X		
Provide incentives that foster sustainability-related industries, which include, but aren’t limited to renewable energy, innovation and science-based industries, and environmental technologies.			X
Increase production and consumption of local foods and products, particularly agricultural products.	X		
Increase commercialization and technology transfer between post-secondary institutions and the business sector.			X
Support the building blocks for economic stability and sustainability.	X		

Table 4-2 Hawai'i 2050 Sustainability Plan (SB2532 HD1, 2010 Legislative Session) **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Recognize and support established industries such as the visitor industry, military, construction and agriculture as strong components of the Hawai'i economy.	X		
Provide incentives for industries to operate in more sustainable ways.			X
Attract local and outside capital and investments in Hawai'i's economic activities.	X		
Reduce regulations and lower the cost of running a business.			X
Increase the competitiveness of Hawai'i's workforce.	X		
Invest in and improve our public education system to provide for a skilled workforce.			X
Create incentives and opportunities for workforce skills upgrade training programs, including the availability of remedial education programs.			X
Increase student enrollment in post-secondary educational programs.			X
Adopt living wage guidelines and measurements.			X
Identify, prioritize and fund infrastructure "crisis points" that need fixing.			X
Discussion: *The project supports the State's goal to diversify the local economy to enable residents to meaningfully live, work and play in Hawai'i. The project will provide a range of locally owned businesses that will expand employment opportunities for the region, while also develop a stronger and more sustainable economic base in the North Shore.*			
GOAL 3: Our natural resources are responsibly and respectfully used, replenished and preserved for future generations.			
Reduce reliance on fossil (carbon-based) fuels.	X		
Expand renewable energy opportunities.	X		
Increase energy efficiency in private and public buildings, including retrofitting existing buildings.	X		
Improve energy efficiencies and options in transportation.	X		
Encourage the production and use of locally produced bio-fuels.			X
Adopt building codes that encourage "green building" technology.			X
Encourage all government agencies to adopt sustainable practices, including purchasing hybrid cars, buying biodegradable products, and mandating recycling.			X
Conserve water and ensure adequate water supply.	X		
Reduce water consumption by means of education and incentives.	X		
Encourage greater production and use of recycled water.	X		
Continually review water-conserving technologies for possible incorporation in county building codes.			X
Encourage price structures for water use that furthers conservation.			X
Require water conservation plans from large private users.			X
Increase recycling, reuse and waste reduction strategies.	X		
Provide greater protection for air, and land-, fresh water- and ocean-based habitats.	X		
Strengthen enforcement of habitat management.			X
Fund public and private conservation education.			X
Improve management of protected watershed areas.			X
Incorporate the values and philosophy of the ahupua'a resource management system as appropriate.			X
Establish funding for invasive species control and native ecosystems protection.			X
Conserve agricultural, open space and conservation lands and resources.			X
Create compact patterns of urban development.	X		
Encourage "smart growth" concepts in land use and community planning.	X		
Research and strengthen management initiatives to respond to rising sea levels, coastal hazards, erosion and other natural hazards.			X
Develop a comprehensive environmental mapping and measurement system to evaluate the overall health and status of Hawai'i's natural ecosystems.			X

Table 4-2 Hawai'i 2050 Sustainability Plan (SB2532 HD1, 2010 Legislative Session) **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Discussion: *The project supports the State's goal to use natural resources respectfully and responsibly.* Section 3.4 through 3.7 *of the EIS evaluate potential project impacts on natural resources on and around the project site. As identified in* Section 3.16 Infrastructure, *the rural community commercial center integrates sustainable features in its design and will promote recycling and waste minimization in its operation. Power generation from renewable solar energy on-site will offset fossil fuel-powered electricity from the utility.*			
GOAL 4: Our community is strong, healthy, vibrant and nurturing, providing safety nets for those in need.			
Strengthen social safety nets.			X
Increase affordable housing opportunities for households up to 140% of median income.			X
Ensure access to affordable health care for all residents.			X
Reduce crime and violence.			X
Provide access to elderly housing, care-giving and other long-term care services.			X
Invest in greater prevention and treatment of those suffering from substance abuse and mental illness.			X
Increase awareness of and competency in financial literacy and asset building.			X
Strengthen the nonprofit sector, philanthropy and volunteerism.			X
Ensure that persons with disabilities are afforded equal opportunity to participate & excel in all aspects of community life.			X
Provide after-school and extra-curricular programs to enable Hawai'i's youth to broaden their life experiences.			X
Improve public transportation infrastructure and alternatives.			X
Reduce traffic congestion.			X
Encourage and provide incentives for telecommuting.			X
Increase and improve bicycle and pedestrian facilities, including multi-use pathways.			X
Strengthen public education.			X
Support parenting, educational and financial literacy initiatives that span early childhood through lifelong learning.			X
Increase high school graduation rates.			X
Strengthen career pathways for technical and trade schools that enhance Hawai'i's workforce.			X
Support post-secondary and distance learning programs that broaden personal and professional learning opportunities.			X
Provide access to diverse recreational facilities and opportunities.			X
Discussion: *The project supports the State's goals for a strong, healthy, vibrant and nurturing community. The center will meet all standards of the Americans with Disability Act and thus be accessible to persons with physical disabilities. The project will provide space for an urgent care facility to increase access to expedient health care for residents and visitors in this community. The rural community commercial center will be pedestrian- and bicycle-friendly and tie to existing multi-modal paths in the area, and the project proposes access improvements to the highway to minimize vehicular congestion around the existing and proposed commercial businesses.*			
GOAL 5: Our Kanaka Maoli and island cultures and values are thriving and perpetuated.			
Honor Kanaka Maoli culture and heritage.			X
Ensure the existence of and support for public and private entities that further the betterment of Kanaka Maoli.			X
Increase fluency in Kanaka Maoli language. It is one of the official languages of Hawai'i.			X
Sponsor cross-sector dialogue on Kanaka Maoli culture and island values.			X
Protect Kanaka Maoli intellectual property and related traditional knowledge.			X
Provide Kanaka Maoli cultural education for residents, visitors and the general public.			X
Celebrate our cultural diversity and island way of life.			
Identify and protect the places, features and sacred spaces that give Hawai'i its unique character and cultural significance.			X

Table 4-2 Hawai'i 2050 Sustainability Plan (SB2532 HD1, 2010 Legislative Session) **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Increase the number of educators who teach cultural and historic education.			X
Enable Kanaka Maoli and others to pursue traditional Kanaka Maoli lifestyles and practices.			X
Provide Kanaka Maoli mentors with opportunities to pass on Hawaiian culture and knowledge to the next generation of Kanaka Maoli and others. The power of wisdom comes from communication.			X
Perpetuate Kanaka Maoli food production associated with land and ocean traditions and practices.			X
Provide support for subsistence-based businesses and economies.			X
Discussion: *The project supports the State's goals related to Kanaka Maoli and island cultures, however, no specific element of the project will advance the goals on a State-wide scale. The EIS examined both cultural and archaeological history of Pūpūkea. Cultural interpretive signage will also be incorporated into the rural center.*			

4.2.5 Hawai'i State Functional Plans

Developed in the late 1980s and early 1990s as part of the Statewide Planning System, the State Functional Plans are the primary guidance tools for implementing the Hawai'i State Plan. While the Hawai'i State Plan establishes long-term objectives for Hawai'i, the purposes of the Functional Plans are to identify major statewide concerns; define current strategies for the functional area; identify major relationships among functional areas; and to provide strategies for departmental policies, programs, and priorities. The Functional Plans provide guidance as to State and County roles and the allocation of resources to fulfill identified activities in the areas of agriculture, conservation lands, education, employment, energy, health, higher education, historic preservation, housing, human services, recreation, tourism, transportation, and water resources.

The applicable Functional Plan for the project is the Human Services State Functional Plan. The plan places an emphasis on policies related to essential human services such as access to child care and access to health care. The rural community center will provide an urgent care facility, and potentially a child care center.

4.2.6 Coastal Zone Management, Hawai'i Revised Statutes Chapter 205A

HRS Chapter 205A, Coastal Zone Management, describes the State's objectives, policies, laws, standards, and procedures to guide and regulate public and private uses through its coastal zone management program. Ten over-arching resources are addressed through both objectives and policies: (1) recreational resources, (2) historic resources, (3) scenic and open space resources, (4) coastal ecosystems, (5) economic uses, (6) coastal hazards, (7) managing development, (8) public participation, (9) beach protection, and (10) marine resources.

The Hawai'i CZM law charges the counties with designating and administering a Special Management Area (SMA) within the State's coastal areas to provide for "*. . . special controls on developments within an area along the shoreline are necessary to avoid permanent losses of valuable resources and the foreclosure of management options, and to ensure that adequate access, by dedication or other means, to public owned or used beaches, recreation areas, and natural reserves is provided." (*HRS §205A Part 2). A "development" as defined by the CZM Law, which is located within the SMA, requires a Special Management Area Use Permit (SMP).

Discussion: *The project is located within the SMA, and subject to the Hawai'i Coastal Zone Management and City and County of Honolulu's SMA policies and controls. Table 4-3 outlines the objectives and policies of HRS Chapter 205A and discusses the applicability to the project.*

Table 4-3 Coastal Zone Management Program HRS Section 205 A - Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	**S**	**N/S**	**N/A**
OBJECTIVES & POLICIES			
(1) Recreational resources;			
Provide coastal recreational opportunities accessible to the public.			
(A) Improve coordination and funding of coastal recreational planning and management; and			X
(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:			
(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;	X		
(ii) Requiring replacement of coastal resources having significant recreational value including, but not limited to, surfing sites, fishponds, and sand beaches, when such resources will be unavoidably damaged by development; or requiring reasonable monetary compensation to the State for recreation when replacement is not feasible or desirable;	X		
(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;			X
(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;			X
(v) Ensuring public recreational uses of county, state and federally-owned or controlled shoreline lands having recreational value consistent with public safety standards and conservation of natural resources.			X
(vi) Adopting water quality standards and regulating point and non-point sources of pollution to protect	X		
(vii) Developing new shoreline recreational opportunities			X
(viii) Encouraging reasonable dedication of shoreline areas with recreational value for public use as part of discretionary approvals or permits by the land use commission, board of land and natural resources, and county authorities; and crediting such dedication against the requirements of section 46-6.			X
Discussion: *The project is separated from the shoreline by Kamehameha Highway. Pūpūkea Beach Park, located across the highway, is a recreational draw for both residents and visitors, and includes popular snorkel and scuba diving access points and the Pūpūkea Marine Life Conservation District (MLCD). The Project does not affect recreational access or use of the shoreline. The project plan incorporates numerous measures to address environmental protection, foremost being soil conservation, storm water runoff management, waste management and protection of water quality. Improvements to the site will meet or exceed water quality standards set by the State Department of Health for both point and non-point source pollution (EIS* Section 3.6.2 and 3.6.2).			
(2) Historic resources;			
Protect, preserve, and, where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture.			
(A) Identify and analyze significant archaeological resources;	X		
(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and	X		
(C) Support state goals for protection, restoration, interpretation, and display of historic resources.			X

Table 4-3 Coastal Zone Management Program HRS Section 205 A - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Discussion: *The project supports the CZM historic resources objective and policies to protect, preserve, and where desirable, restore those natural and manmade historic and prehistoric resources in the coastal zone management area that are significant in Hawaiian and American history and culture. A Cultural Inventory Survey and Archaeological Assessment were prepared for the EIS. Previous archaeological investigations within the immediate project area have not identified any historic properties within the project site or immediate vicinity of the project area (EIS* Appendices D *and* E*).*			
(3) Scenic and open space resources;			
Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.			
(A) Identify valued scenic resources in the coastal zone management area;	X		
(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;	X		
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and	X		
(D) Encourage those developments that are not coastal dependent to locate in inland areas.			X
Discussion: *The project supports the CZM objectives and policies to protect and preserve coastal scenic and open space resources. The center will be built to comply with B-1 Neighborhood Business height requirements and setback distances. Important viewsheds within the project vicinity are identified in the NSSCP; none are impacted by the project (EIS* Section 3.17*).*			
(4) Coastal ecosystems;			
Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.			
(A) Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;	X		
(B) Improve the technical basis for natural resource management;			X
(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;	X		
(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs; and	X		
(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and non-point source water pollution control measures.	X		
Discussion: *Hanapohaku LLC is cognizant of the project's close proximity to the Pūpūkea-Waimea MLCD and the importance of sustainable design strategies and best management practices to protect the valued coastal and marine resources of the area.* Sections 3.6 *and* 3.7 *of this EIS discuss the project's mitigation measures for maintaining marine water and groundwater quality in the vicinity of the project. No significant long-term adverse impacts are anticipated.*			
(5) Economic uses;			
Provide public or private facilities and improvements important to the State's economy in suitable locations.			
(A) Concentrate coastal dependent development in appropriate areas;			X
(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and			X

Table 4-3 Coastal Zone Management Program HRS Section 205 A - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when: (i) Use of presently designated locations is not feasible; (ii) Adverse environmental effects are minimized; and (iii) The development is important to the State's economy.			X
Discussion: *The center is appropriately located on Urban, B-1 Neighborhood Business zoned lands, and on parcels designated for rural community commerce in the City's NSSCP. The project will be in compliance with all CZM and SMA rules and regulations.*			
(6) Coastal hazards;			
Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.			
(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and non-point source pollution hazards;	X		
(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and non-point source pollution hazards;	X		
(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and	X		
(D) Prevent coastal flooding from inland projects.	X		
Discussion: *The project supports the State's objectives and policies related to coastal hazards. As discussed in* Section 3.3 *of the EIS, the rural community commercial center will be constructed on lands designated as Flood Zone X and outside of the tsunami evacuation zone. Construction of the buildings will comply with all requirements for the Federal Flood Insurance Program and will meet the standards for natural hazards.*			
(7) Managing development;			
Improve the development review process, communication, and public participation in the management of coastal resources and hazards.			
(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;	X		
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and	X		
(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.	X		
Discussion: *Development of the rural community commercial center is aligned with the CZM objective and policies related to permitting for coastal developments. In addition to this EIS, the rural center will file the required documents to obtain a Special Management Area-Major permit, National Pollutant Discharge Elimination System Construction Storm Water permit, building permits, Highway Use and Access permit, and other required City permits listed in* Table 1-1 *of the EIS.*			
(8) Public participation;			
Stimulate public awareness, education, and participation in coastal management.			
(A) Promote public involvement in coastal zone management processes;			X
(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and			X
(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.			X
Discussion: *The project will comply with the State's goal of public participation for the coastal zone through the SMA permit process.*			
(9) Beach protection;			
Protect beaches for public use and recreation.			

Table 4-3 Coastal Zone Management Program HRS Section 205 A - Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	**S**	**N/S**	**N/A**
(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;			X
(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and			X
(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.			X
Discussion: *Construction for the project is located mauka of Kamehameha Highway, which is inland from the shoreline setback. No structure related to the rural center will impact shoreline processes.*			
(10) Marine resources;			
Promote the protection, use, and development of marine and coastal resources to assure their sustainability.			
(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;	X		
(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;			X
(C) Assert and articulate the interests of the State as a partner with federal agencies in the sound management of ocean resources within the United States exclusive economic zone;			X
(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and	X		
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.			X
Discussion: *The rural community commercial center will include a variety of shops and resources, including surf and action sport shops that promote marine conservation ethics.*			

4.2.7 Marine Life Conservation Districts – Pūpūkea (HAR Title 13 Chapter 34)

Marine Life Conservation Districts (MLCD) were introduced to Hawai‘i in 1967, with the intent of conserving and replenishing marine resources. The protected areas designated under the MLCD generally prohibit consumptive uses, and are meant to allow fish and other aquatic life to grow and reproduce without human threats. The Pūpūkea Marine Life Conservation District was established in 1983 under HAR Title 13, Chapter 34.

Regulations for the Pūpūkea MLCD include limits to possessing limu kohu and limu lipe’epe’e; possession of knives for personal safety only; limits to fish catch by number of fishing poles per person and hooks per line; usage of legal nets; seasons for ‘opelu and akule; prohibitions on taking or injuring fish with non-allowable equipment; prohibitions on taking or altering corals and sands; and prohibitions on snagging akule.

Discussion: The Pūpūkea MLCD and the coastal and marine resources of Pūpūkea and Waimea are valuable assets of the North Shore. The project supports the continued protection of the marine sanctuary.

4.2.8 Electric Vehicle Parking and Charging

Hawaii Revised Statute §291-71 requires places of public accommodation, with at least 100 parking spaces available for use by the general public, to have at least one parking space exclusively for electric vehicles. The statute also requires the space be equipped with an electric vehicle charging system.

Discussion: *The rural center will have two parking spaces dedicated to electric vehicles with one charging station that can charge two cars simultaneously.*

4.2.9 Complete Streets Policy

Hawaii Revised Statute §264.20.5 was passed in 2009 as Act 54 and mandates that the Department of Transportation and the County transportation departments adopt a complete streets policy that seeks to reasonably accommodate convenient access and mobility for all users of the public highways within the county jurisdictions, including pedestrians, bicyclists, transit users, motorists, and persons of all ages and abilities. This State policy applies to new construction, reconstruction, and maintenance of highways, roads, streets, ways, and lanes in urban, suburban, and rural areas. The policy does not apply to roadways where bicyclists or pedestrians are prohibited by law such as interstate highway corridors.

4.2.10 DLNR Makai Watch Program

The State of Hawaiʻi Makai Watch Program was formed in the early 2000ʻs is a collaborative marine management program between the public and the Department of Land and Natural Resources to encourage compliance to resource rules, education, and monitoring. The key Makai Watch components include Awareness Raising and Outreach; Observation and Incident Reporting; and Human-use Monitoring and Biological Literacy Education. Through the Makai Watch Program and its standardized Observation and Incident Reporting component, community members volunteer their time to watch over designated Makai Watch sites to reduce inappropriate uses of marine resources by beachgoers and visitors.

The Pūpūkea-Waimea Marine Life Conservation District was designated as Oʻahuʻs first Makai Watch Program Site in 2006 through the collaborative efforts of Mālama Pūpūkea-Waimea, Hawaii Community Stewardship Network, and Hawaii DLNR. Over thirty volunteers were initially trained to steward the district, which includes Waimea Bay, Kaluea-Maua, and Pūpūkea. Makai Watch volunteers work to reduce the impacts of tourism, overuse, and poaching of marine resources on the MLCD; hold outreach and education sessions; monitor human use; conduct fish surveys; and give mini presentations on the culture, history, and ecology of the area.

Discussion: *The project supports the State DLNR Makai Watch Program and the ongoing efforts of Malama Pūpūkea Waimea to preserve and protect the Pūpūkea-Waimea MLCD.*

4.3 CITY AND COUNTY OF HONOLULU PLANS, POLICIES AND CONTROLS

4.3.1 Chapter 25, Revised Ordinances of Honolulu

The State Coastal Zone Management law charges the counties with designating and administering a Special Management Area (SMA) within the State's coastal areas to provide for "*. . . special controls on developments within an area along the shoreline are necessary to avoid permanent losses of valuable resources and the foreclosure of management options, and to ensure that adequate access, by dedication or other means, to public owned or used beaches, recreation areas, and natural reserves is provided." (*HRS §205A Part 2).

Chapter 25 of the Revised Ordinances of Honolulu (ROH) provides the SMA policies for the City and County of Honolulu to "preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawaii."

The objectives and policies of Chapter 25 are those contained in HRS Section 205A. Procedural guidelines for the SMA and the SMA Permit (SMP) are set forth in ROH 25-3.3 and include the following:

a) All development within the special management area shall be subject to review by the agency under the provisions of this chapter. Such review shall be pursuant to the objectives, policies and guidelines set forth herein.
b) Consultation. Any applicant contemplating development within the special management area is encouraged to contact the agency for information regarding procedures and general information which may have a direct influence on the applicant's proposed development.
c) Assessment Requirements for Special Management Area Use Permits.
    1) Any proposed development within the special management area requiring a special management area use permit shall be subject to an assessment by the agency in accordance with the procedural steps set forth in HRS Chapter 343. The director may allow the assessment to be conducted concurrently with the processing of the application for a special management area use permit.
    2) The director may waive the requirements of subdivision (1) for any proposed development which has been assessed under the National Environmental Policy Act or under HRS Chapter 343, and for which a finding of no significant impact has been filed or a required EIS has been accepted.
d) Review Criteria. The director shall review the proposal based on the following criteria:
    1) The valuation or fair market value of the development; and
    2) The potential effects and the significance of each effect according to the significance criteria established by Section 25-4.1.
e) Determination.
    1) For the purposes of this chapter, other than special requirements for shoreline lots as provided in Section 25-6.3, the director shall declare a development proposal exempt where the director finds that the proposal is not defined as development under Section 25-1.3. No shoreline lot shall be exempt from the special requirements for shoreline lots.
    2) The director shall issue a special management area minor permit where the director finds that the development proposal:
        A) Has a valuation or fair market value not in excess of $500,000.00; and

B) Will not significantly affect the special management area and/or special wetland area

Within the City and County of Honolulu, the SMP application review is administered by the DPP, and the decision on its issuance is rendered by the City Council, pursuant to Ordinance No. 84-4.

Discussion: *The project is located within the SMA, and subject is to the Hawai'i Coastal Zone Management and City and County of Honolulu's SMA policies and controls. The project will be required to obtain a SMP, as outlined in ROH, Sec. 25-1.2; HRS Chapter 205A-21. As such, this EIS is being filed to fulfill of the City and County SMA assessment requirements per the procedural steps provided in HRS, Chapter 343. Issuance of the SMP is based on the consistency of the proposed development project with the policies and review guidelines specified in the CZM Law. The project's compliance with the review guidelines contained in ROH 25-3.2 is discussed in* Table 4-4*.*

Table 4-4 Special Management Area – Objectives and Policies – City and County of Honolulu
(1) All development in the special management area shall be subject to reasonable terms and conditions set by the Council to ensure that:
• Adequate access, by dedication or other means, to publicly owned or used beaches, recreation areas, and natural reserves is provided to the extent consistent with sound conservation principles;
Discussion: *The project will not affect public access to Pūpūkea Beach Park or adjacent recreational facilities along the shoreline.*
• Adequate and properly located public recreation areas and wildlife preserves are reserved.
Discussion: *The project will complement the adjacent public recreational areas of Pūpūkea Beach Park.*
• Provisions are made for solid and liquid waste treatment, disposition, and management that will minimize adverse effects upon special management area resources.
Discussion: Sections 3.6 and 3.7 *of the EIS evaluate potential impacts to both groundwater and marine waters, and concludes that no short-term or long-term impacts are anticipated from the project. The Pūpūkea Rural Community Commercial Center's commitment to sustainability includes solid waste reduction and recycling.*
• Alterations to existing land forms and vegetation; except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation or failure in the event of earthquake.
Discussion: *The project will develop a property that has historically been used commercial endeavors. The appropriately scaled one- and two-story buildings will not have an adverse effect on water, scenic, or recreational resources in the area. Design and construction will be in compliance with all relevant code and safety standards to minimize the any potential damage from natural hazards.*
(2) No development shall be approved unless the authority has first found:
• That the development will not have any substantial adverse environmental or ecological effect, except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health, safety, or compelling public interests. Such adverse effects shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect, and the elimination of planning options;
Discussion: *The Pūpūkea Rural Community Commercial Center will not create substantial adverse environmental or ecological effects. Identified potential long-term impacts and recommended mitigation measures are discussed in Section 3.0.*
• That the development is consistent with the objectives, policies, and special management area guidelines of this chapter and any guidelines enacted by the legislature;
Discussion: *The project remains consistent with the policies and objectives of the HRS Chapter 205A CZM and its review guidelines, as well as the ROH, Chapter 25 SMA guidelines. Consistency with CZM is discussed in* Section 4.2.6 *and* Table 4-3*. The commercial uses on the Hanapohaku property and site improvements required under*

Table 4-4 Special Management Area – Objectives and Policies – City and County of Honolulu
2017/SMA-21 guide existing uses; approval by Council for a SMA-Major permit will be sought prior to development with other relevant permits.
• That the development is consistent with the county general plan and zoning. Such a finding of consistency does not preclude concurrent processing where a general plan or zoning amendment may also be required.
Discussion: *The project is consistent with the City and County of Honolulu's General Plan, NSSCP, and State Land Use Ordinance; no planning or zoning amendment is required.*
(3) The authority shall seek to minimize, where reasonable:
• Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon;
Discussion: *The Pūpūkea Rural Community Commercial Center does not involve dredging, filling, or the altering of any bay, estuary, salt marsh, river mouth, slough or lagoon.*
• Any development which would reduce the size of any beach or other area usable for public recreation;
Discussion: *The project is located mauka of Kamehameha Highway in the State Land Use District - Urban and City-zoned Neighborhood Business district, and is not on the beach and will not reduce the size of the beach or any other public recreational area.*
• Any development which would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the special management areas and the mean high tide line where there is no beach;
Discussion: *The project does not reduce or impose restrictions upon public access to tidal and submerged lands, beach areas, or to the mean high tide line.*
• Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast;
Discussion: *The rural community commercial center does not interfere with or detract from the line of sight toward the sea from Kamehameha Highway.*
• Any development which would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.
Discussion: *The project will take all necessary environmental precautions and will be in compliance with the rules and regulations relating to water quality, fisheries, and wildlife habitats in the project location.* Section 3.7 *of the EIS concludes that no short-term or long-term impacts to marine water quality are anticipated from the project.* Section 3.16.2 *of the EIS details the reduction of storm water runoff that will occur as a result of the proposed project improvements.*

4.3.2 City and County of Honolulu General Plan

The General Plan of the City and County of Honolulu (1992 edition, as amended in 2002) is a statement of long-range socio-economic, environmental, and design objectives and policies to be achieved for the general prosperity and welfare for the people of the city. It is intended to serve as a guide for all levels of government, private enterprise, neighborhood and citizen groups, organizations, and individual citizens (City and County of Honolulu Revised Charter 2000, Sec. 6-1508). The General Plan consists of eleven subject areas and provides the framework for the City's expression of public policy concerning the needs of the people and the functions of government. The subject areas address all aspects of health, safety, and welfare for O'ahu's communities, and include: population trends and growth, economic activity, the natural environment, housing, transportation and utilities, energy, physical development and urban design, public safety, health and education, culture and recreation, and government operations and fiscal management. *Table 4-5* discusses how the project addresses the applicable objectives and policies of the City and County of Honolulu General Plan.

In 2012, the City developed the Draft Oʻahu 2035 General Plan update, which was circulated to the public for review and comments. The document is still pending final approval. Accordingly, the project must address its consistency with the existing 2002 amended version. However, pending the City's approval of the Draft Oʻahu 2035 General Plan, the project's consistency with applicable objectives and policies of the Plan update is also addressed as a separate discussion under each relevant objective.

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
PART I: POPULATION			
OBJECTIVE A: To control the growth of Oʻahu's resident and visitor populations in order to avoid social, economic, and environmental disruptions.			
Policy 1: Participate in State and Federal programs which seek to develop social, economic, legal, and environmental controls over population growth.			X
Policy 2: Seek a balance between the rate of in-migration and the rate of out-migration by reducing in-migration.			X
Policy 3: Support Federal policies providing for a more even distribution of immigrants throughout the country.			X
Policy 4: Seek to maintain a desirable pace of physical development through City and County regulations.			X
Policy 5: Encourage family planning.			X
Policy 6: Publicize the desire of the City and County to limit population growth.			X
Discussion: *City objective and policies related to controlling resident and visitor populations island-wide are not directly applicable to the project. The project follows objectives and guidelines in the NSSCP – see* Table 4-6.			
OBJECTIVE B: To plan for future population growth.			
Policy 1: Allocate efficiently the money and re- sources of the City and County in order to meet the needs of Oʻahu's anticipated future population.			X
Policy 2: Provide adequate support facilities to accommodate future growth in the number of visitors to Oʻahu.			X
Discussion: *The project will not impact the population or mix of residents (*Section 3.11.2 *of the EIS).*			
OBJECTIVE C: To establish a pattern of population distribution that will allow the people of Oʻahu to live and work in harmony.			
Policy 1: Facilitate the full development of the primary urban center.			X
Policy 2: Encourage development within the secondary urban center at Kapolei and the ʻEwa and Central Oʻahu urban-fringe areas to relieve developmental pressures in the remaining urban-fringe and rural areas and to meet housing needs not readily provided in the primary urban center.			X
Policy 3: Manage physical growth and development in the urban-fringe and rural areas so that: (a) An undesirable spreading of development is prevented; and (b) Their population densities are consistent with the character of development and environmental qualities desired for such areas.			X
Policy 4: (Amended, Resolution 02-205, CD1): Direct growth according to Policies 1, 2, and 3 above by providing land development capacity and needed infrastructure to seek a 2025 distribution of Oʻahu's residential population as follows:	X		

Location	% Share of 2025 Island-wide Population
Primary Urban Center	46.0%
ʻEwa	13.0%
Central Oʻahu	17.0%
East Honolulu	5.3%
Koʻolaupoko	11.6%
Koʻolauloa	1.4%
North Shore	1.7%
Waiʻanae	4.0%

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Discussion: *The project is an opportunity to provide employment as well as goods and services on a rural scale in a manner consistent with the NSSCP.*			
PART II: ECONOMIC ACTIVITY			
OBJECTIVE A: To promote employment opportunities that will enable all the people of Oʻahu to attain a decent standard of living.			
Policy 1: Encourage the growth and diversification of Oʻahu's economic base.	X		
Policy 2: Encourage the development of small businesses and larger industries, which will contribute to the economic and social well-being of Oʻahu residents.	X		
Policy 3: Encourage the development in appropriate locations on Oʻahu of trade, communications, and other industries of a nonpolluting nature.			X
Policy 4: Encourage the development of local, national, and world markets for the products of Oʻahu-based industries.			X
Policy 5: Encourage the wider distribution of available employment opportunities through such methods as shortening the work-week and reducing the use of overtime.			X
Policy 6: Encourage the continuation of a significant level of Federal employment on Oʻahu.			X
Discussion: *The project supports the City's objectives to encourage the growth and diversification of Oʻahu's economic base and the development of small businesses. The rural center will provide goods and services complementary to the existing Foodland grocery store to strengthen commerce on the North Shore. Some of the types of businesses at the center may include: pharmacy and health products, a business center, professional services, real estate office, surf retail, yoga and fitness studio, child care center, quick service food, health food market, and a restaurant.* ***2035 General Plan Discussion:*** *The project supports the proposed 2035 objective and policies to encourage the viability of businesses and industries which contribute to the economic and social well-being of Oʻahu residents, and to support entrepreneurship and innovation. Hanapohaku is committed to supporting local businesses to strengthen the local economy of the North Shore.*			
OBJECTIVE B: To maintain the viability of Oʻahu's visitor industry.			
Policy 1: Provide for the long-term viability of Waikīkī as Oʻahu's primary resort area by giving the area priority in visitor industry related public expenditures.			X
Policy 2: Provide for a high quality and safe environment for visitors and residents in Waikīkī.			X
Policy 3: Encourage private participation in improvements to facilities in Waikīkī.			X
Policy 4: Prohibit major increases in permitted development densities in Waikīkī.			X
Policy 5: Prohibit further growth in the permitted number of hotel and resort condominium units in Waikīkī.			X
Policy 6: Permit the development of secondary resort areas in West Beach, Kahuku, Makaha, and Lāʻie.			X
Policy 7: Manage the development of secondary resort areas in a manner which respects existing lifestyles and the natural environment, and avoids substantial increases in the cost of providing public services in the area.			X
Policy 8: Preserve the well-known and widely publicized beauty of Oʻahu for visitors as well as residents.			X
Policy 9: Encourage the visitor industry to provide a high level of service to visitors.			X
Discussion: *Due to the project's close proximity to the Pūpūkea MLCD, a number of sustainable principles and best management practices will be employed during construction and operations of the rural community commercial center. The project is cognizant of the importance of preserving the beauty of the North Shore of Oʻahu.* ***2035 General Plan Discussion:*** *The project supports the proposed 2035 objective and policies related to Oʻahuʻs visitor industry. Specifically, Policy 2 related to respecting and emphasizing the value that Native Hawaiian culture and cultural practitioners, and other established ethnic traditions bring to enriching the visitor experience.*			

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
OBJECTIVE C: To maintain the viability of agriculture on Oʻahu.			
Policy 1: Assist the agricultural industry to ensure the continuation of agriculture as an important source of income and employment.			X
Policy 2: Support agricultural diversification in all agricultural areas on Oʻahu.			X
Policy 3: Support the development of markets for local products, particularly those with the potential for economic growth.			X
Policy 4: Provide sufficient agricultural land in ʻEwa, Central Oʻahu, and the North Shore to encourage the continuation of sugar and pineapple as viable industries.			X
Policy 5: Maintain agricultural land along the Windward, North Shore, and Waiʻanae coasts for truck fanning, flower growing, aquaculture, livestock production, and other types of diversified agriculture.			X
Policy 6: Encourage the more intensive use of productive agricultural land.			X
Policy 7: Encourage the use of more efficient production practices by agriculture, including the efficient use of water.			X
Policy 8: Encourage the more efficient use of non- potable water for agricultural use.			X
Discussion: *While Hanapohaku supports City policies related to agricultural diversification, these policies are not applicable to the project. The project may promote locally sourced agricultural products through periodic farmers' markets.*			
OBJECTIVE D: To make full use of the economic resources of the sea.			
Policy 1: Assist the fishing industry to maintain its viability.			X
Policy 2: Encourage the development of aquaculture, ocean research, and other ocean- related industries.			X
Policy 3: Focus the development of ocean related economic activities in the Northwestern Hawaiian Islands on those, which are compatible with preserving the area's unique environmental, marine, and wildlife assets.			X
Discussion: *While Hanapohaku supports City policies related to economic resources of the sea, these policies are not applicable to the project.*			
OBJECTIVE E: To prevent the occurrence of large-scale unemployment.			
Policy 1: Encourage the training and employment of present residents for currently available and future jobs.			X
Policy 2: Make full use of State and Federal employment and training programs.			X
Policy 3: Encourage the provision of retraining programs for workers in industries with planned reductions in their labor force.			X
Discussion: *While Hanapohaku supports the City's policies related to preventing large-scale unemployment, these policies are not directly applicable to the project. Indirectly, the project will provide new employment opportunities a rural area of the island through encouraging local Hawaiʻi entrepreneurs and providing employment in new retail, food, and service businesses to be located in the rural community commercial center.* ***2035 General Plan Discussion:*** *Same as above.*			
OBJECTIVE F: To increase the amount of Federal spending on Oʻahu.			
Policy 1: Take full advantage of Federal programs and grants which will contribute to the economic and social well-being of Oʻahu's residents.			X
Policy 2: Encourage the Federal government to pay for the cost of public services used by Federal agencies.			X
Policy 3: Encourage the Federal government to lease new facilities rather than construct them on tax exempt public land.			X
Policy 4: Encourage the military to purchase locally all needed services and supplies which are available on Oʻahu.			X

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Discussion: *While Hanapohaku is in support of Federal programs and grants for the economic and social well-being of Oʻahu residents, the policies related to Federal spending are not applicable to the project.*			
OBJECTIVE G: To bring about orderly economic growth on Oʻahu.			
Policy 1: Direct major economic activity and government services to the primary urban center and the secondary urban center at Kapolei.			X
Policy 2: Permit the moderate growth of business centers in the urban-fringe areas.			X
Policy 3: Maintain sufficient land in appropriately located commercial and industrial areas to help ensure a favorable business climate on Oʻahu.	X		
Policy 4: Encourage the continuation of a high level of military-related employment in the Hickam-Pearl Harbor, Wahiawā, Kailua-Kāneʻohe, and ʻEwa areas.			X
Discussion: *The project supports the City's objectives related to economic growth on Oʻahu. The rural center will include new locally owned retail, services, and eateries to expand the North Shore's economic base. Appropriately located on B-1 Neighborhood Business zoned land, the project site is also designated within the NSSCP as a Rural Community Commercial Center.*			
PART III: NATURAL ENVIRONMENT			
OBJECTIVE A: To protect and preserve the natural environment.			
Policy 1: Protect Oʻahu's natural environment, especially the shoreline, valleys, and ridges, from incompatible development.	X		
Policy 2: Seek the restoration of environmentally damaged areas and natural resources.	X		
Policy 3: Retain the Island's streams as scenic, aquatic, and recreation resources.	X		
Policy 4: Require development projects to give due consideration to natural features such as slope, flood and erosion hazards, water- recharge areas, distinctive land forms, and existing vegetation.	X		
Policy 5: Require sufficient setbacks of improvements in unstable shoreline areas to avoid the future need for protective structures.	X		
Policy 6: Design surface drainage and flood-control systems in a manner, which will help preserve their natural settings.	X		
Policy 7: Protect the natural environment from damaging levels of air, water, and noise pollution.	X		
Policy 8: Protect plants, birds, and other animals that are unique to the State of Hawaiʻi and the Island of Oʻahu.	X		
Policy 9: Protect mature trees on public and private lands and encourage their integration into new developments.	X		
Policy 10: Increase public awareness and appreciation of Oʻahu's land, air, and water resources.	X		
Policy 11: Encourage the State and Federal governments to protect the unique environmental, marine, and wildlife assets of the Northwestern Hawaiian Islands.	X		
Discussion: *As discussed in* Sections 3.4 *through* 3.7, *construction and operations of the rural community commercial center will continue to maintain the area's natural environment, while also incorporating new elements such as native and tropical plant species for landscaping.* ***2035 General Plan Discussion:*** *The project supports the 2035 General Plan policies related to protecting and preserving the natural environment. Specifically, the project considers the impacts of climate change on the natural environment, and is actively working to incorporate on-site renewable energy generation to reduce demands on fossil fuels.*			
OBJECTIVE B: To preserve and enhance the natural monuments and scenic views of Oʻahu for the benefit of both residents and visitors.			
Policy 1: Protect the Island's well-known resources: its mountains and craters; forests and watershed areas; marshes, rivers, and streams; shoreline, fishponds, and bays; and reefs and offshore islands.	X		

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Policy 2: Protect O'ahu's scenic views, especially those seen from highly developed and heavily traveled areas.	X		
Policy 3: Locate roads, highways, and other public facilities and utilities in areas where they will least obstruct important views of the mountains and the sea.	X		
Policy 4: Provide opportunities for recreational and educational use and physical contact with O'ahu's natural environmental.	X		
Policy 5: Identify all areas where priority should be given to preserving rural character and lifestyle.			X
Policy 6: Utilize Hawai'i's limited land resources wisely, providing adequate land to accommodate projected population and economic growth needs while ensuring the protection of the environment and the availability of the shoreline, conservation lands, and other limited resources for future generations.	X		
Policy 7: Protect and enhance Hawai'i's shoreline, open spaces, and scenic resources.	X		
Discussion: *Designated within the NSSCP as a Rural Community Commercial Center, the project will be developed per the guiding directives of the Plan. As discussed in Section 3.17 of this EIS, the project will maintain its wastewater system and disposal to meet State and City standards.* ***2035 General Plan Discussion:*** *Per the 2035 General Plan policies, the project supports the promotion of public access to the natural environment for recreational, educational and cultural purposes. The rural center's location mauka of the Pūpūkea Waimea MLCD and will not interfere with public access to the natural environment for recreational, educational, and cultural purposes.*			
PART IV: HOUSING			
OBJECTIVE A: To provide decent housing for all the people of O'ahu at prices they can afford.			
Policy 1: Develop programs and controls, which will provide decent homes at the least possible cost.			X
Policy 2: Streamline approval and permit procedures for housing and other development projects.			X
Policy 3: Encourage innovative residential development, which will result in lower costs, added convenience and privacy, and the more efficient use of streets and utilities.			X
Policy 4: Establish public, and encourage private, programs to maintain and improve the condition of existing housing.			X
Policy 5: Make full use of State and Federal programs that provide financial assistance for low- and moderate-income homebuyers.			X
Policy 6: Expand local funding mechanisms available to pay for government housing programs.			X
Policy 7: Provide financial and other incentives to encourage the private sector to build homes for low and moderate-income residents.			X
Policy 8: Encourage and participate in joint public- private development of low- and moderate-income housing.			X
Policy 9: Encourage the preservation of existing housing which is affordable to low- and moderate-income persons.			X
Policy 10: Promote the construction of affordable dwellings, which take advantage of O'ahu's year-round moderate climate.			X
Policy 11: Encourage the construction of affordable homes within established low-density communities by such means as "'ohana" units, duplex dwellings, and cluster development.			X
Policy 12: Encourage the production and maintenance of affordable rental housing.			X
Policy 13: Encourage the provision of affordable housing designed for the elderly and the handicapped.			X
Policy 14: Encourage equitable relationships between landowners and leaseholders, between landlords and tenants, and between condominium developers and owners.			X

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Discussion: *While Hanapohaku supports the City's objective to provide housing at affordable prices for all people of O'ahu, these policies are not directly applicable to the project.*			
OBJECTIVE B: To reduce speculation in land and housing.			
Policy 1: Encourage the State government to coordinate its urban-area designations with the developmental policies of the City and County.			X
Policy 2: Discourage private developers from acquiring and assembling land outside of areas planned for urban use.			X
Policy 3: Seek public benefits from increases in the value of land owing to City and State developmental policies and decisions.			X
Policy 4: Require government-subsidized housing to be delivered to appropriate purchasers and renters.			X
Policy 5: Prohibit the selling or renting of government-subsidized housing for large profits.			X
Discussion: *The rural community commercial center will provide goods and services on lands zoned for neighborhood business and rural community commercial center activities. The City's policies related to speculation in land and housing are not directly applicable to the project.*			
OBJECTIVE C: To provide the people of O'ahu with a choice of living environments which are reasonably close to employment, recreation, and commercial centers and which are adequately served by public utilities.			
Policy 1: Encourage residential developments that offer a variety of homes to people of different income levels and to families of various sizes.			X
Policy 2: Encourage the fair distribution of low- and moderate-income housing throughout the Island.			X
Policy 3: Encourage residential development near employment centers.			X
Policy 4: Encourage residential development in areas where existing roads, utilities, and other community facilities are not being used to capacity.			X
Policy 5: Discourage residential development where roads, utilities, and community facilities cannot be provided at a reasonable cost.			X
Policy 6: Preserve older communities through self-help, housing-rehabilitation, improvement districts, and other governmental programs.			X
Discussion: *While the rural community commercial center will create employment and services and goods for the North Shore, the policies related to residential living environments are not directly applicable to the project.*			
PART V: TRANSPORTATION AND UTILITIES			
OBJECTIVE A: To create a transportation system which will enable people and goods to move safely, efficiently, and at a reasonable cost; serve all people, including the poor, the elderly, and the physically handicapped; and offer a variety of attractive and convenient modes of travel.			
Policy 1: Develop and maintain an integrated ground-transportation system consisting of the following elements and their primary purposes:			X
Public transportation-for travel to and from work, and travel within Central Honolulu;			X
Roads and highways-for commercial traffic and travel in non-urban areas			X
Bikeways-for recreational activities and trips to work, schools, shopping centers, and community facilities; and			X
Pedestrian walkways-for getting around Downtown and Waikīkī, and for trips to schools, parks, and shopping centers.			X
Policy 2: Provide transportation services to people living within the 'Ewa, Central O'ahu, and Pearl City-Hawai'i Kai corridors primarily through a mass transit system including exclusive right-of-way rapid transit and feeder-bus components as well as through the existing highway system with limited improvements as may be appropriate.			X
Policy 3: Provide transportation services outside the 'Ewa, Central O'ahu, and Pearl City-Hawai'i Kai corridors primarily through a system of express- and feeder-buses as well as through the			X

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
highway system with limited to moderate improvements sufficient to meet the needs of the communities being served.			
Policy 4: Improve transportation facilities and services in the ʻEwa corridor and in the trans-Koʻolau corridors to meet the needs of ʻEwa and Windward communities.			X
Policy 5: Improve roads in existing communities to reduce congestion and eliminate unsafe conditions.	X		
Policy 6: Consider both environmental impact as well as construction and operating costs as important factors in planning alternative modes of transportation.			X
Policy 7: Promote the use of public transportation as a means of moving people quickly and efficiently, of conserving energy, and of guiding urban development.	X		
Policy 8: Make available transportation services to people with limited mobility: the young, the elderly, the handicapped, and the poor.			X
Policy 9: Promote programs to reduce dependence on the use of automobiles.	X		
Policy 10: Discourage the inefficient use of the private automobile, especially in congested corridors and during peak-hours.	X		
Policy 11: Make public, and encourage private, improvements to major walkway systems.	X		
Policy 12: Encourage the provision of separate aviation facilities for small civilian aircraft.			X
Policy 13: Facilitate the development of a second deep-water harbor to relieve congestion in Honolulu Harbor.			X
Discussion: *The project will include an added turning lane for safe entry and exit from the rural community commercial center. In addition, the buildings will be set back from the highway with parking sited behind to create an open, park-like space along Kamehameha Highway with ample walkways and bicycle paths.*			
OBJECTIVE B: To meet the needs of the people of Oʻahu for an adequate supply of water and for environmentally sound systems of waste disposal.			
Policy 1: Develop and maintain an adequate supply of water for both residents and visitors.			X
Policy 2: Develop and maintain an adequate supply of water for agricultural and industrial needs.			X
Policy 3: Encourage the development of new technology, which will reduce the cost of providing water and the cost of waste disposal.			X
Policy 4: Encourage a lowering of the per-capita consumption of water and the per-capita production of waste.	X		
Policy 5: Provide safe, efficient, and environmentally sensitive waste-collection and waste- disposal services.	X		
Policy 6: Support programs to recover resources from solid-waste and recycle wastewater.	X		
Policy 7: Require the safe disposal of hazardous waste.	X		
Discussion**:** *The project supports the City's objectives to meet the needs of the people of Oʻahu for an adequate supply of water for environmentally sound waste disposal systems. The State-compliant wastewater system is described in Section 3.16 of this EIS.* ***2035 General Plan Discussion*****:** *The project will provide water and environmentally sound systems of waste disposal, as discussed in Section 3.16 of this EIS. The 2035 General Plan's policies to support initiatives that educate the community about conserving resources and reducing waste streams, as well as requiring safe disposal of hazardous waste are strongly supported by Hanapohaku at the rural community center.*			
OBJECTIVE C: To maintain a high level of service for all utilities.			
Policy 1: Maintain existing utility systems in order to avoid major breakdowns.	X		
Policy 2: Provide improvements to utilities in existing neighborhoods to reduce substandard conditions.	X		
Policy 3: Plan for the timely and orderly expansion of utility systems.			X
Policy 4: Increase the efficiency of public utilities by encouraging a mixture of uses with peak periods of demand occurring at different times of the day.			X

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
***Discussion*:** *Utilities, such as water, for the rural community commercial center will be coordinated in advance with the appropriate provider to avoid major breakdowns or substandard conditions.*			
OBJECTIVE D: To maintain transportation and utility systems which will help Oʻahu continue to be a desirable place to live and visit.			
Policy 1: Give primary emphasis in the capital- improvement program to the maintenance and improvement of existing roads and utilities.			X
Policy 2: Use the transportation and utility systems as a means of guiding growth and the pattern of land use on Oʻahu.			X
Policy 3: Encourage the study and use of telecommunications as an alternative to conventional transportation facilities.			X
Policy 4: Evaluate the social, economic, and environmental impact of additions to the transportation and utility systems before they are constructed.	X		
Policy 5: Require the installation of underground utility lines wherever feasible.	X		
Policy 6: Seek improved taxing powers for the City and County in order to provide a more equitable means of financing transportation and utility services.			X
Discussion: *The project's transportation and utility systems are evaluated in Sections 3.13 and 3.16 of this EIS. The project supports the City's objectives for maintaining Oʻahu's transportation and utility systems to help Oʻahu continue to be a desirable place to live and visit.*			
PART VI: ENERGY			
OBJECTIVE A: To maintain an adequate, dependable, and economical supply of energy for Oʻahu residents.			
Policy 1: Develop and maintain a comprehensive plan to guide and coordinate energy conservation and alternative energy development and utilization programs on Oʻahu.			X
Policy 2: Establish economic incentives and regulatory measures which will reduce Oʻahu's dependence on petroleum as its primary source of energy.			X
Policy 3: Support programs and projects which contribute to the attainment of energy self-sufficiency on Oʻahu.	X		
Policy 4: Promote and assist efforts to establish adequate petroleum reserves within Hawaiʻi's boundaries.			X
Policy 5: Give adequate consideration to environmental, public health, and safety concerns, to resource limitations, and to relative costs when making decisions concerning alternatives for conserving energy and developing natural energy resources.			X
Policy 6: Work closely with the State and Federal governments in the formulation and implementation of all City and County energy-related programs.			X
Discussion: *A portion of the energy for the project will be provided onsite from the photovoltaic canopy in the rear parking area. The renewable source of energy supports the City's objective to maintain an economical supply of energy for Oʻahu.* ***2035 General Plan Discussion*:** *The project supports the City's 2035 objective to increase energy self-sufficiency and maintain efficient, reliable, resilient, and cost-efficient energy systems. The use of renewable energy for the project supports many of the City's policies in reducing the island's dependence on fossil fuels.*			
OBJECTIVE B: To conserve energy through the more efficient management of its use.			
Policy 1: Ensure that the efficient use of energy is a primary factor in the preparation and administration of land use plans and regulations.			X
Policy 2: Provide incentives and, where appropriate, mandatory controls to achieve energy-efficient siting and design of new developments.			X
Policy 3: Carry out public, and promote private, programs to more efficiently use energy in existing buildings and outdoor facilities.	X		
Policy 4: Promote the development of an energy- efficient transportation system.			X

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Discussion: *Sustainability is a key feature of the project. Renewable energy from the photovoltaic canopies and rooftop installations, as well as energy efficient fixtures will be used to support the project facilities.* ***2035 General Plan Discussion:*** *While the project's photovoltaic canopy and use of the generated renewable energy will not have a direct effect on encouraging the implementation of a reliable electrical grid or energy storage, the added energy production may help influence solutions for increased storage of solar power.*			
OBJECTIVE C: To fully utilize proven alternative sources of energy.			
Policy 1: Encourage the use of commercially available solar energy systems in public facilities, institutions, residences, and business developments.	X		
Policy 2: Support the increased use of operational solid waste energy recovery and other biomass energy conversion systems.			X
Discussion: *Photovoltaic canopies will be installed in the parking area rear of the buildings. The photovoltaic canopies and rooftop installations will provide a renewable source of energy to the project, reducing the project's overall demand on fossil fuels.* ***2035 General Plan Discussion:*** *The 2035 General Plan's objective and policies relate to fostering an ethic of energy conservation that inspires sustainable practices. The project's photovoltaic canopy in the rear parking area will provide an opportunity to share information on renewable energy and the costs associated with the island's dependence on imported fossil fuels.*			
OBJECTIVE D: To develop and apply new, locally available energy resources.			
Policy 1: Support and participate in research, development, demonstration, and commercialization programs aimed at producing new, economical, and environmentally sound energy supplies from:			X
a. solar insulation;			X
b. biomass energy conversion;			X
c. wind energy conversion;			X
d. geothermal energy; and			X
e. ocean thermal energy conversion.			X
Policy 2: Secure State and Federal support of City and County efforts to develop new sources of energy.			X
Discussion: *While the project strongly supports the research, development, and commercialization programs aimed at producing new energy supplies, these policies are not directly applicable to the project.*			
OBJECTIVE E: To establish a continuing energy information program.			
Policy 1: Supply citizens with the information they need to fully understand the potential supply, cost, and other problems associated with O'ahu's dependence on imported petroleum.			X
Policy 2: Foster the development of an energy conservation ethic among O'ahu residents.	X		
Policy 3: Keep consumers informed about available alternative energy sources and their costs and benefits.			X
Policy 4: Provide information concerning the impact of public and private decisions on future energy use.			X
Discussion: *The project supports the City's objectives related to energy, specifically as it relates to renewable solar energy. The parking area of the project will produce photovoltaic energy from panels to offset the project's reliance on fossil fuel energy. Shops and restaurants at the rural center will also employ energy conservation strategies to more efficiently and sustainably operate the center.*			
PART VII: PHYSICAL DEVELOPMENT AND URBAN DESIGN			
OBJECTIVE A: To coordinate changes in the physical environment of O'ahu to ensure that all new developments are timely, well-designed, and appropriate for the areas in which they will be located.			

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Policy 1: Plan for the construction of new public facilities and utilities in the various parts of the Island according to the following order of priority: first, in the primary urban center; second, in the secondary urban center at Kapolei; and third, in the urban- fringe and rural areas.			X
Policy 2: Coordinate the location and timing of new development with the availability of adequate water supply, sewage treatment, drainage, transportation, and public safety facilities.	X		
Policy 3: Phase the construction of new developments so that they do not require more regional supporting services than are available.			X
Policy 4: Require new developments to provide or pay the cost of all essential community services, including roads, utilities, schools, parks, and emergency facilities that are intended to directly serve the development.			X
Policy 5: Provide for more compact development and intensive use of urban lands where compatible with the physical and social character of existing communities.	X		
Policy 6: Encourage the clustering of developments to reduce the cost of providing utilities and other public services.	X		
Policy 7: Locate new industries and new commercial areas so that they will be well related to their markets and suppliers, and to residential areas and transportation facilities.			X
Policy 8: Locate community facilities on sites that will be convenient to the people they are intended to serve.			X
Policy 9: Exclude from residential areas, uses which are major sources of noise and air pollution.			X
Policy 10: Establish danger zones to exclude incompatible uses from hazardous areas surrounding airfields, electromagnetic- radiation sources, and storage places for fuel and explosives.			X
Policy 11: Prohibit new airfields, electromagnetic-radiation sources, and storage places for fuel and explosives from locating on sites where they will endanger or disrupt nearby communities.			X
Discussion: *The rural community commercial center will be constructed on appropriately designated lands for Neighborhood Business and Rural Community Commercial Center use on jointly developed lands with Foodland Pūpūkea. Adequate water supply, wastewater disposal, drainage, transportation, and public safety facilities will be coordinated at the appropriate times prior to and during construction.* ***2035 General Plan Discussion:*** *The project is consistent with the 2035 General Plan objectives related to coordinating changes in the physical environment of O'ahu, specifically the opportunity for community to participate meaningfully in planning and development processes. This EIS is one step of the process which was preceded by a public meeting on the project to receive public comments. Information about the rural center is also continually provided on Hanapohaku's project website.*			
OBJECTIVE B: To develop Honolulu (Wai'alae-Kāhala to Halawā), 'Aiea, and Pearl City as the Island's primary urban center.			
Policy 1: Stimulate development in the primary urban center by means of the City and County's capital improvement program and State and Federal grant and loan programs.			X
Policy 2: Provide for the expanded development of low-rise multi-unit housing.			X
Policy 3: Encourage the establishment of mixed-use districts with appropriate design and development controls to insure an attractive living environment and compatibility with surrounding land uses.			X
Policy 4: Provide downtown Honolulu and other major business centers with a well-balanced mixture of uses.			X
Policy 5: Encourage the development of attractive residential communities in downtown and other business centers.			X

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Policy 6: Maintain and improve downtown as the financial and office center of the Island, and as a major retail center.			X
Policy 7: Provide for the continued viability of the Hawai'i Capital District as a center of government activities and as an attractive park-like setting in the heart of the City.			X
Policy 8: Foster the development of Honolulu's waterfront as the State's major port and maritime center, as a people-oriented mixed-use area, and as a major recreation area.			X
Policy 9: Facilitate the redevelopment of Kakaʻako as a major residential, as well as commercial and light industrial area.			X
Discussion: *The project is located in the North Shore region of Oʻahu; therefore, the objective and policies related to the Island's primary urban center are not applicable.* ***2035 General Plan Discussion:*** *A section was added to the 2035 General Plan relating to the long-term impacts of climate change. The project supports the policies related to integrating climate change adaptation into planning, design and construction of developments. In addition, the project operations will prepare for the anticipated impacts of sea level rise on the coastal community of Pūpūkea*			
OBJECTIVE C: To develop a secondary urban center in 'Ewa with its nucleus in the Kapolei area.			
Policy 1: Allocate funds from the City and County's capital-improvement program for public projects that are needed to facilitate development of the secondary urban center at Kapolei.			X
Policy 2: Encourage the development of a major residential, commercial, and employment center within the secondary urban center at Kapolei.			X
Policy 3: Encourage the continuing development of Barbers Point as a major industrial center.			X
Policy 4: Coordinate plans for the development of the secondary urban center at Kapolei with the State and Federal governments and with the sugar industry.			X
Policy 5: Cooperate with the State and Federal governments in the development of a deep water harbor at Barbers Point.			X
Policy 6: Encourage the development of the 'Ewa Marina Community as a major residential and recreation area emphasizing recreational boating activities through the provision of a major marina and a related maritime commercial center containing light-industrial, commercial, and visitor accommodation uses.			X
Discussion: *The project is located in the North Shore region of Oʻahu; therefore, the objective and policies related to 'Ewa are not applicable.*			
OBJECTIVE D: To maintain those development characteristics in the urban-fringe and rural areas which make them desirable places to live.			
Policy 1: Develop and maintain urban-fringe areas as predominantly residential areas characterized by generally low rise, low density development which may include significant levels of retail and service commercial uses as well as satellite institutional and public uses geared to serving the needs of households.			X
Policy 2: Coordinate plans for developments within the 'Ewa and Central Oʻahu urban-fringe areas with the State and Federal governments and with the sugar, pineapple, and other emerging agricultural industries.			X
Policy 3: Establish a green belt in the 'Ewa and Central Oʻahu areas of Oʻahu in the Development Plans.			X
Policy 4: Maintain rural areas as areas which are intended to provide environments supportive of lifestyle choices which are dependent on the availability of land suitable for small to moderate size agricultural pursuits, a relatively open and scenic setting, and/or a small town, country atmosphere consisting of communities which are small in size, very low density and low rise in character, and may contain a mixture of uses.			X
Discussion: *The project is located in the North Shore region of Oʻahu; therefore, the objective and policies related to the urban fringes of 'Ewa and Central Oʻahu are not applicable.*			

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
OBJECTIVE E: To create and maintain attractive, meaningful, and stimulating environments throughout Oʻahu.			
Policy 1: Prepare and maintain a comprehensive urban-design plan for the Island of Oʻahu.			X
Policy 2: Integrate the City and County's urban-design plan into all levels of physical planning and developmental controls.			X
Policy 3: Encourage distinctive community identities for both new and existing districts and neighborhoods.	X		
Policy 4: Require the consideration of urban-design principles in all development projects.	X		
Policy 5: Require new developments in stable, established communities and rural areas to be compatible with the existing communities and areas.	X		
Policy 6: Provide special design standards and controls that will allow more compact development and intensive use of lands in the primary urban center.			X
Policy 7: Promote public and private programs to beautify the urban and rural environments.	X		
Policy 8: Preserve and maintain beneficial open space in urbanized areas.			X
Policy 9: Design public structures to meet high aesthetic and functional standards and to complement the physical character of the communities they will serve.			X
Policy 10: Establish a review process to evaluate the design of major development projects.			X
Discussion: *The project supports the City's objective to create and maintain attractive, meaningful, and stimulating environments throughout Hawaiʻi. The rural community commercial center will be developed on lands designated in the NSSCP for Rural Community Commercial Center, and will share a driveway with the existing Foodland Pūpūkea. The center which will provide complementary goods and services to Foodland, will be designed in a manner consistent with the country character of the North Shore. One- to two- story buildings will be set back from the highway to create an open, park-like space along Kamehameha Highway.* ***2035 General Plan Discussion:*** *The project supports the 2035 General Plan added policy of recognizing the importance of using Native Hawaiian plants in landscaping to further the traditional Hawaiian concept of mālama ʻāina and to create a more Hawaiian sense of place. Appropriately sited ornamental and native plant species will be integrated throughout the landscaped elements of the project.*			
OBJECTIVE F: To promote and enhance the social and physical character of Oʻahu's older towns and neighborhoods.			
Policy 1: Encourage new construction to complement the ethnic qualities of the older communities of Oʻahu.			X
Policy 2: Encourage, wherever desirable, the rehabilitation of existing substandard structures.			X
Policy 3: Provide and maintain roads, public facilities, and utilities without damaging the character of older communities.	X		
Policy 4: Seek the satisfactory relocation of residents before permitting their displacement by new development, redevelopment, or neighborhood rehabilitation.			X
Discussion: *The City's objectives related to physical development and urban design are supported by the rural community commercial center. The design of the rural center will be appropriately scaled and be compatible with the communities and character of the Sunset Beach – Pūpūkea area. Sustainability and environmental protection are some of the important features of the project. As such, the project supports the beautification of urban and rural environments. Objectives specific to ʻEwa and urban fringe areas are not applicable to the project.*			
PART VIII: PUBLIC SAFETY			
OBJECTIVE A: To prevent and control crime and maintain public order.			
Policy 1: Provide a safe environment for residents and visitors on Oʻahu.	X		
Policy 2: Provide adequate criminal justice facilities and staffing for City and County law-enforcement agencies.			X
Policy 3: Emphasize improvements to police and prosecution operations which will result in a higher proportion of wrongdoers who are arrested, convicted, and punished for their crimes.			X

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 4: Keep the public informed of the nature and extent of criminal activity on O'ahu.			X
Policy 5: Establish and maintain programs to encourage public cooperation in the prevention and solution of crimes.			X
Policy 6: Seek the help of State and Federal law- enforcement agencies to curtail the activities of organized crime syndicates on O'ahu.			X
Policy 7: Conduct periodic reviews of criminal laws to ensure their relevance to the community's needs and values.			X
Policy 8: Cooperate with other law-enforcement agencies to develop new methods of fighting crime.			X
Policy 9: Encourage the improvement of rehabilitation programs and facilities for criminals and juvenile offenders.			X
***Discussion*:** *Police and fire protection services will not be affected by the construction or operations of the rural center. Hanapohaku strives to provide a safe environment for residents and visitors through the rural community commercial center. However, the policies related to criminal justice facilities, staffing, and crime prevention are primarily the responsibility of the City, and as such are not applicable to the project.*			
OBJECTIVE B: To protect the people of O'ahu and their property against natural disasters and other emergencies, traffic and fire hazards, and unsafe conditions.			
Policy 1: Keep up-to-date and enforce all City and County safety regulations.	X		
Policy 2: Require all developments in areas subject to floods and tsunamis to be located and constructed in a manner that will not create any health or safety hazard.	X		
Policy 3: Participate with State and Federal agencies in the funding and construction of flood-control projects.			X
Policy 4: Cooperate with State and Federal agencies to provide tsunami warning and protection for O'ahu.			X
Policy 5: Cooperate with State and Federal agencies to provide protection from war, civil disruptions, and other major disturbances.			X
Policy 6: Reduce hazardous traffic conditions.	X		
Policy 7: Provide adequate fire protection and effective fire prevention programs.	X		
Policy 8: Provide adequate search and rescue and disaster response services.			X
Policy 9: Design safe and secure public buildings.			X
Policy 10: Provide adequate staff to supervise activities at public facilities.			X
Policy 11: Develop civil defense plans and programs to protect and promote public health, safety and welfare of the people.			X
Policy 12: Provide educational materials on civil defense preparedness, fire protection, traffic hazards and other unsafe conditions.	X ?		
***Discussion*:** *Public safety provisions are primarily the responsibility of the State and City. However, the project's revitalization of the space will promote a safe environment for residents and visitors. The design and operations of the center will also comply with all City and County safety regulations.*			
PART IX: HEALTH AND EDUCATION			
OBJECTIVE A: To protect the health of the people of O'ahu.			
Policy 1: Encourage the provision of health-care facilities that are accessible to both employment and residential centers.	X		
Policy 2: Encourage prompt and adequate ambulance and first-aid services in all areas of O'ahu.	X		
Policy 3: Coordinate City and County health codes and other regulations with State and Federal health codes to facilitate the enforcement of air-, water-, and noise-pollution controls.			X
***Discussion*:** *The rural community commercial center supports the objectives to protect the health of the people of O'ahu. An urgent care facility will be provided at the center to serve the North Shore community which currently lacks adequate access to healthcare services.*			
OBJECTIVE B: To provide a wide range of educational opportunities for the people of O'ahu.			

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
Policy 1: Support education programs that encourage the development of employable skills.			X
Policy 2: Encourage the provision of informal educational programs for people of all age groups.			X
Policy 3: Encourage the after-hours use of school buildings, grounds, and facilities.			X
Policy 4: Encourage the construction of school facilities that are designed for flexibility and high levels of use.			X
Policy 5: Facilitate the appropriate location of learning institutions from the preschool through the university levels.			X
***Discussion*:** *The rural community commercial center will primarily provide commercial goods and services for the North Shore community. While a child care center may be located at the center, the policies related to educational opportunities are not applicable to the project.*			
OBJECTIVE C: To make Honolulu the center of higher education in the Pacific.			
Policy 1: Encourage continuing improvement in the quality of higher education in Hawai'i.			X
Policy 2: Encourage the development of diverse opportunities in higher education.			X
Policy 3: Encourage research institutions to establish branches on Oʻahu.			X
***Discussion*:** *Higher education is outside the scope of the rural community commercial center. As such, the policies are not applicable to the project.*			
PART X: CULTURE AND RECREATION			
OBJECTIVE A: To foster the multiethnic culture of Hawai'i.			
Policy 1: Encourage the preservation and enhancement of Hawaiʻi's diverse cultures.	X		
Policy 2: Encourage greater public awareness, understanding, and appreciation of cultural heritage and contributions to Hawai'i made by the City's various ethnic groups.	X		
Policy 3: Encourage opportunities for better interaction among people with different ethnic, social, and cultural backgrounds.	X		
Policy 4: Encourage the protection of the ethnic identities of the older communities of Oʻahu.			X
***Discussion*:** *A Cultural Impact Assessment was conducted for the project site, which included the traditional history of Pūpūkea and important cultural sites in the North Shore region. While there were no significant findings on the project parcels, the CIA has provided detailed information on the Hawaiian history and culture of the area, with elements of which will be shared through interpretive signage at the rural center.*			
OBJECTIVE B: To protect Oʻahu's cultural, historic, architectural, and archaeological resources.			
Policy 1: Encourage the restoration and preservation of early Hawaiian structures, artifacts, and landmarks.	X		
Policy 2: Identify, and to the extent possible, preserve and restore buildings, sites, and areas of social, cultural, historic, architectural, and archaeological significance.	X		
Policy 3: Cooperate with the State and Federal governments in developing and implementing a comprehensive preservation program for social, cultural, historic, architectural, and archaeological resources.	X		
Policy 4: Promote the interpretive and educational use of cultural, historic, architectural, and archaeological sites, buildings, and artifacts.	X		
Policy 5: Seek public and private funds, and public participation and support, to protect social, cultural, historic, architectural, and archaeological resources.			X
Policy 6: Provide incentives for the restoration, preservation, and maintenance of social, cultural, historic, architectural, and archaeological resources.			X
***Discussion*:** *Hanapohaku supports the protection of Oʻahu's cultural, historic, architectural, and archaeological resources. A CIA and AIS were conducted for the project. Both yielded negative findings for cultural and/or archaeological resources on the property. The project will include installations for interpretive signage to share the cultural and historic significance of Pūpūkea.*			
OBJECTIVE C: To foster the visual and performing arts.			
Policy 1: Encourage and support programs and activities for the visual and performing arts.	X		
Policy 2: Encourage creative expression and access to the arts by all segments of the population.			X

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Policy 3: Provide permanent art in appropriate City public buildings and places.			X
***Discussion*:** *The project site plan includes an open space courtyard that could potentially be used for outdoor performances and events.*			
OBJECTIVE D: To provide a wide range of recreational facilities and services that are readily available to all residents of Oʻahu.			
Policy 1: Develop and maintain community-based parks to meet the needs of the different communities on Oʻahu.			X
Policy 2: Develop and maintain a system of regional parks and specialized recreation facilities.			X
Policy 3: Develop and maintain urban parks, squares, and beautification areas in high-density urban places.			X
Policy 4: Encourage public and private botanic and zoological parks on Oʻahu to foster an awareness and appreciation of the natural environment.			X
Policy 5: Encourage the State to develop and maintain a system of natural resource-based parks, such as beach, shoreline, and mountain parks.			X
Policy 6: Provide convenient access to all beaches and inland recreation areas.	X		
Policy 7: Provide for recreation programs which serve a broad spectrum of the population.			X
Policy 8: Encourage ocean and water-oriented recreation activities that do not adversely impact on the natural environment.	X		
Policy 9: Require all new developments to provide their residents with adequate recreation space.			X
Policy 10: Encourage the private provision of recreation and leisure-time facilities and services.	X		
Policy 11: Encourage the after-hours, weekend, and summertime use of public schools facilities for recreation.			X
Policy 12: Provide for safe and secure use of public parks, beaches, and recreation facilities.	X		
Policy 13: Encourage the safe use of Oʻahu's ocean environments.	X		
Policy 14: Encourage the State and Federal governments to transfer excess and underutilized land to the City and County for public recreation use.	X		
***Discussion*:** *The project is located mauka of the Pūpūkea Beach Park and the Pūpūkea-Waimea MLCD, a popular preserve and recreational area. The rural community commercial center will not interfere with existing access to the nearby beaches. Some of the services and products provided at the project are related to the promotion of surf and ocean recreation. While the project supports the City's objectives and policies related to the provision of safe public parks, beaches, recreation facilities, and ocean environments, it is primarily the responsibility of the City's Department of Parks and Recreation. As such, those policies are not directly applicable to the project.*			
PART XI: GOVERNMENT OPERATIONS AND FISCAL MANAGEMENT			
OBJECTIVE A: To promote increased efficiency, effectiveness, and responsiveness in the provision of government services by the City and County of Honolulu.			
Policy 1: Maintain City and County government services at the level necessary to be effective.			X
Policy 2: Promote consolidation of State and City and County functions whenever more efficient and effective delivery of government programs and services can be achieved.			X
Policy 3: Ensure that government attitudes, actions, and services are sensitive to community needs and concerns.			X
Policy 4: Prepare, maintain, and publicize policies and plans which are adequate to guide and coordinate City programs and regulatory responsibilities.			X
***Discussion*:** *The City's objective to promote increased efficiency, effectiveness, and responsiveness in government services are the responsibility of City agencies. As such, these policies are not applicable to the project.*			
OBJECTIVE B: To ensure fiscal integrity, responsibility, and efficiency by the City and County government in carrying out its responsibilities.			
Policy 1: Provide for a balanced budget.			X

Table 4-5 City & County of Honolulu General Plan - Objectives and Policies **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Policy 2: Allocate fiscal resources of the City and County to efficiently implement the policies of the General Plan and Development Plans.			X
***Discussion*:** *The policies guiding the fiscal integrity, responsibility, and efficiency of the City's budget and fiscal resources are not applicable to the project.*			

4.3.3 North Shore Sustainable Communities Plan

The North Shore Sustainable Communities Plan (NSSCP) is one of eight community oriented plans intended to help guide public policy, investment, and decision-making over the next 25 years. Each of these plans addresses one of eight planning regions on Oʻahu, responding to specific conditions and community values of each region. Below are the objectives and policies of the NSSCP (*Table 4-6*).

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
*The **Key Elements** of the vision for the North Shore reflect .. . . :*			
Maintain the Community Growth Boundary to Protect Agricultural, Open Space, and Natural Resources			X
Promote a Diversified Agricultural Industry			X
Enhance the Region's Recreational and Educational Potential			X
Promote Haleʻiwa and Waialua Towns as "Country Towns"			X
Support Waialua as the North Shore's Industrial Center			X
Direct New Housing to Areas Contiguous to Haleʻiwa and Waialua Towns and Use Rural Design Guidelines for Rural Residential Development			X
Provide Adequate and Appropriately-Sized Public Infrastructure, Facilities, and Services			X
Preserve and Protect Cultural and Historic Resources	X		
Adapt the Ahupuaʻa Concept as a Framework for Land Use and Natural Resource Management			X
Integrate Principles of Sustainability into Decision-Making Processes	X		
***Discussion*:** *The project supports the NSSCP's vision elements including preserving and protecting cultural and historic resources, and integrating sustainability into decision-making processes. As evaluated in Sections 3.8 and 3.9 of this document, a Cultural Impact Assessment and Archaeological Assessment were conducted for the project area. The findings were negative for cultural deposits or human burials. Sustainable elements will also be incorporated throughout the design and operations of the project.*			
Open Space and Natural Environment			
Guidelines			
Mountain Areas • Maintain, protect and restore native forests and ecosystems within the State Conservation District and lands designated Preservation on the North Shore Sustainable Communities Plan Land Use Map. Ensure the protection of State conservation lands, especially those on the Kaʻena coastline and Mokulēʻia foothills. • Reclassify important watershed areas which are designated but unused State Agricultural or Urban Districts to the State Conservation or City Preservation Districts. • Identify and protect endangered species habitats, native ecosystems, and other important ecologically sensitive areas, including the natural area reserves and forest reserves, from such threats as fire, alien species, feral animals, and human activity.			X

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
• Identify mountain areas within the AG-2 General Agricultural District that are suitable for rezoning to P-2 General Preservation District. • Avoid the establishment of utility corridors and other uses that would disturb areas with high concentrations of native species. • Encourage coordination of natural resource protection and management efforts between the State DLNR and private landowners, as well as with the U.S. Military, especially where the Kahuku and Kawailoa Training Areas overlap with environmentally sensitive areas. • Acquire and maintain public access easements to trail heads and public campgrounds, including parking and signage at trailheads, where appropriate. Such access should be required, as appropriate, for any new development. • Support State efforts to seek opportunities for cooperative agreements with private landowners to gain access to trails leading to public lands. • Implement recommendations in the State's Na Ala Hele Program Plan to maintain and enhance mauka trail systems. • Identify historic trails and old government roads of cultural and recreational value to the public.			
Shoreline Areas • Preserve rare and sensitive coastal resources including coastal strand vegetation, sand dunes, and anchialine pools. Establish buffer zones around these areas where necessary. • Prohibit off-road vehicle, motorcycle and bicycle use in ecologically sensitive areas, including coastal dunes and shoreline beaches. Identify and maintain recreational areas specifically designated for such use. • Protect nearshore coral reefs and other marine life from damaging activities such as soil erosion, nonpoint source pollution, dredging of coral reefs, and alterations to nearshore water circulation. • Establish access where justified by public demand, traditional use patterns, high quality recreational resources, or to circumvent barriers that exist along the shoreline. • Improve and expand public access to the shoreline at approximately 1/2-mile intervals with vehicular and bicycle parking and lateral access along the shoreline. • Implement the recommendations of the State of Hawai'i's Coastal Nonpoint Pollution Control Program and utilize best management practices in agricultural land use and operations to avoid or minimize chemical runoff and other "nonpoint" contaminants in shoreline areas. • Support research to determine causes of coastal erosion and identify appropriate management strategies to avoid future erosion hazards. • Encourage interagency coordination and public/private cooperation in developing and implementing beach management plans, with an emphasis on nonstructural approaches. • Discourage development or activities which result in beach loss, and encourage development practices or activities such as increased shoreline setbacks which result in beach preservation or enhancement. • Require buildings along the shoreline to adhere to the City's and Federal Emergency Management Agency (FEMA) minimum building elevations and structural guidelines. In addition, adopt development standards that require new structures to incorporate building styles compatible with coastal hazards such as coastal erosion, tsunami and hurricane overwash. • Discourage visual obstructions such as walls and fences along the coastal highway to maintain and enhance existing panoramic views identified on the Open Space Map. Clear shrubs and vegetation on vacant State- and County-owned properties that would maintain views of the ocean from public roadways along the shoreline.	X		

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
• Implement active protection and management practices that preserve and enhance native and other resident fish and aquatic species populations and habitats, including nearshore coral reefs. Efforts to enhance opportunities for commercial and recreational fishing should use management practices and techniques that sustain fish populations and habitat quality so as to maintain a quality aquatic environment for public enjoyment. • Place sand from channel, stream, and harbor mouth dredging projects on local beaches in accordance with Hawai'i Revised Statutes Chapter 205A.			
Wetlands • Preserve and maintain all North Shore wetlands and wildlife habitats. When considering future activities/construction in the vicinity of biologically sensitive areas such as wetlands, the preferred sequence will be to: avoid ecologically sensitive areas entirely; minimize potential project impacts; and require mitigation that will offset the loss of resources. • Support the restoration and protection of 'Uko'a Marsh. Protection can be achieved through fee acquisition, land banking, cooperative agreements with public agencies and private landowners, conservation easements, or other strategies. • Support efforts to restore Loko Ea Fishpond as an interactive, productive and functioning aquaculture resource. Promote the development of a cultural learning center providing both visitors and residents opportunities to experience the unique environment around Loko Ea Pond and 'Uko'a Marsh. Possible activities may include tours of a working aquaculture farm, as well as cultural and environmental education programs that teach traditional and modern aquaculture techniques and the history of the Pond and its adjacent areas. Walkways extending north to 'Uko'a Pond could provide opportunities for interpretive nature walks.			X
Natural Gulches, Streams, and Drainageways • Preserve the aesthetic and biological values of the natural gulches, streams, and drainageways as part of the North Shore's open space system. Where feasible, establish wildlife habitat protective buffer zones and/or setbacks along rivers, streams, and shoreline areas. Where possible, provide public access to these open space and recreational resources. • Minimize soil erosion, runoff of pesticides, fertilizers and other nonpoint source contaminants into streams, wetlands, and marine habitats. In addition to stream setback, utilize erosion control devices, integrated pest management plans, and revegetation of disturbed areas. Incorporate erosion control measures and best management practices, as recommended in the State Coastal Nonpoint Pollution Control Program, to prevent pollution of wetlands, streams, estuaries, and nearshore waters. • Limit uses in these areas to conservation uses, compatible recreational uses such as hiking, traditional hunting, fishing, gathering, religious and cultural practices, and controlled diversion for agricultural purposes. Avoid development in ecologically sensitive areas; if activities are allowed, minimize impacts and implement mitigative measures that will fully offset any loss of resources. • Preserve and maintain the natural streams and drainageways within the developed areas by designating them as part of the open space system. To the extent possible, limit any modifications to natural gulches and drainageways, unless they are necessary for flood protection, to preserve water quality and protect aesthetic and biological resources. • If modifications are necessary, mitigate impacts on biological habitats by using stream-side vegetation, rip-rap boulder lining of steam banks, v-shaped bottom channels to maintain a stream flow during low rainfall periods, and other designs to promote aeration. • Integrate planned improvements to the North Shore drainage system into the regional open space network by emphasizing the use of retention basins and recreational access in the design approach.	X		

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Scenic Resources and Scenic Views • Conduct planning with attention to preservation of natural open space, protecting coastal and *mauka* views from public roadways, and conserving important viewsheds. • When view reductions may come from agricultural activities which intrude into viewplanes or otherwise degrade or diminish scenic qualities, the protection of roadway views should be balanced with the operating requirements of agriculture. • Evaluate the impact of land use proposals on the visual quality of the landscape, including viewplane and open space considerations. • Site new antennas, telecommunication equipment and alternative energy systems in appropriate locations to minimize their impact on visual resources. Encourage site clustering and techniques that blend the equipment into the natural landscape. • Discourage the use and installation of overhead utility lines and poles. Strong consideration should be given to placing replacement and new transmission lines underground. Undergrounding utility lines will enhance viewplanes and increase highway safety. Whenever possible, relocate or place underground overhead utilities that significantly obstruct public views. If unavoidable, locate any future overhead utilities on the *mauka* side of the public coastal highway. • Minimize the adverse effects of artificial lighting on wildlife and human health by balancing the need of outdoor lighting for night utility, security, and desire for reasonable architectural expression with the need to conserve energy and protect the natural environment. • Adopt outdoor night lighting standards that encourage efforts to minimize glare and stray light, and reinforce the differences between urban and rural communities.	X		
Utility Corridors and Greenways • Provide sufficient easement width for the major trunk lines and transmission lines for utility systems, when their alignment is not within a road right-of-way, to permit the growth of trees within the easement. • When overhead transmission lines are located within or adjacent to a road right-of-way, there should be sufficient width to permit the growth of trees adjacent to the transmission line, consistent with the applicable operations, maintenance, and safety requirements. The purpose of the landscaping is to divert attention from the overhead lines and, preferably, obscure views of the overhead line from the travelway and adjacent residential areas • Permit the use of utility easements for pedestrian and bicycle routes. Encourage coordination between utility companies, landowners, pertinent agencies, and the community to ensure that safety, liability, and maintenance issues are adequately addressed. • Encourage the use of indigenous vegetation that is slow growing and thus minimizes the need to use herbicides for vegetation control. • Promote technologies that support alternative energy sources, including solar, wind, and wave power. Allow community and agency review of individual proposals to ensure compatibility and suitability.	X		
Discussion: *The rural community commercial center supports the NSSCP's guidelines related to open space and the natural environment. As discussed in Section 3.0 of this EIS, shoreline areas, drainageways, scenic resources, and greenways in the vicinity of the project area will be maintained to State and City standards. Landscaping for the project will be a mix of tropical and indigenous plant species to minimize the need for herbicides for vegetation control. Alternative energy production, including solar, will be implemented in the rear parking area of the project.*			
Agriculture			
Guidelines			
Agricultural Lands • Enforce permitted uses on agricultural lands to ensure that the use is contributing to meaningful and credible agricultural production on the same or nearby properties.			X

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
• Cluster and locate dwellings near similar uses to preserve open space, maximize the use of productive agricultural lands, and reduce infrastructure costs, when planned as part of an agricultural activity. • Design and site buildings and other facilities that are accessory to an agricultural operation to minimize the visual impact on nearby areas and views from arterial and major collector roads. • Adopt development standards and permitting procedures that simplify and streamline the permitting requirements for uses that support the growth of agriculture, including agricultural support facilities and agriculture-based tourism. • Maintain adequate physical buffers between agricultural land uses and surrounding land uses. • Base any subdivision of agricultural lands on the most appropriately sized, viable economic unit for agricultural production. • Identify and implement – as an immediate high priority action item at the State and County levels – appropriate economic incentives designed to promote and facilitate the growth of diversified agriculture. • Support agricultural research and development activities targeted towards increasing operational efficiencies, economic returns, and the effective utilization of agricultural lands and supporting infrastructure, which enables sustainable usage of agricultural resources. • Assist residents to develop skills in agriculture and related specialized industries so that residents can seek local employment in the area. • Support a mentor program for area teens to learn about agricultural practices, economics, and business so that interest and commitment to agriculture may continue on to future generations. • Support the expansion and diversification of aquaculture in the region, including the continued cleanup of the former Dillingham Quarry site in Mokulēʻia and expansion of existing aquaculture operations in the area. • Identify potential sites for aquaculture or mariculture parks. • Encourage agricultural producers to develop Conservation Plans in conjunction with the West Oʻahu Soil and Water Conservation District to manage and protect natural resources. • Assist governmental agencies and landowners to upgrade and maintain existing infrastructure networks, including roads and irrigation systems. • Improve the quality of irrigation water from Lake Wilson. • Work with the State to identify and protect Important Agricultural Lands (IAL) as defined by Act 183 (2005).			
Agricultural Support Facilities • Develop agricultural support facilities in Waialua and Kawailoa. • Ensure that permitted agricultural support facilities do not adversely affect agricultural production in the area or present health hazards or nuisances to adjacent areas. • Require all agricultural support facilities in the region to maintain a direct relationship to local agricultural production. • Site and design facilities to minimize development impacts and maximize the amount of farmland preserved.			X
Agriculture-Based Tourism • Allow agricultural, recreational and educational programs, and limited outdoor recreational or other uses if the activity is complementary to the primary agricultural use of the land and it does not interfere with the agricultural use of the site.			X

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
• Monitor tourism-related activities conducted on agricultural lands to ensure that such activities do not adversely impact on-site or adjacent agricultural activities or other resources. • Provide technical and business development support for visitor-related proposals. • Identify and develop a convenient, suitable location in or near Haleʻiwa and/or Waialua Town to establish a farmers' market where farmers can market products locally. • Identify and develop a permanent site in the Sunset Beach vicinity to promote the North Shore Country Market. • Develop an agricultural museum that includes a demonstration area showing various crops in different stages of growth and processing.			
***Discussion*:** *The rural community commercial center will be located on lands designated as Urban and zoned for Neighborhood Business. The guidelines related to Agriculture are not applicable to the project.*			
Parks and Recreation			
Guidelines			
Community and Neighborhood Parks and Facilities • Develop Haleʻiwa Beach Park Mauka as a community-based park to expand active recreational facilities for North Shore residents. • Acquire Puʻuiki Park for community use. • Expand Waialua District Park by acquiring agricultural land across Goodale Avenue. • If new residential development occurs, it should provide land for open space and recreation purposes at a minimum of two acres per 1,000 residents. Community-based parks (and associated service radius) include miniparks (1/2 mile), neighborhood parks (1/2 mile), community parks (one mile), and district parks (two miles). • Locate community and neighborhood parks which emphasize intensive uses such as ball fields, playing courts, and community buildings in or adjacent to the neighborhoods or communities they serve, in order to maximize accessibility. • Provide more youth activities, programs and facilities on the North Shore.			X
Mauka Areas • Expand public access to the upland or mauka areas for appropriate types of recreational activities that are low-impact, resource-sensitive and do not compromise significant environmental resources and important agricultural activities. These would include nature-based activities such as picnicking, camping, hiking, mountain biking, hunting and the appreciation of scenic, natural and cultural resources. • Acquire and maintain public and/or private campgrounds and hiking trails in the *mauka* areas. • Develop a system of mauka trails and paths to interconnect the major recreational areas of the North Shore for use by nonmotorized transportation modes, e.g., walking, biking, horseback riding. • Coordinate planned private and public actions pertaining to trails and access. Identify historic trails and old government roads of cultural and recreational value to the public.			X
Beach Parks and Shoreline Areas • Limit new developments along the shoreline to parks and other compatible open space uses. • Improve and expand public access to the shoreline at approximately one half mile intervals in rural areas of the North Shore, or at closer intervals where justified by public demand, traditional use patterns, the quality of the recreational resources, emergency services response time, or to bypass natural barriers that impede public access to the shoreline. • Maintain and expand lateral access along the coast, especially in areas with high recreational or scenic value, including the shoreline along Sunset Beach and Kawailoa where access to popular sandy beaches and surf spots are in demand.	X		

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
• Limit uses within beach parks and nearshore ocean area uses to preserve overall environmental quality, rural character, scenic views, and open space. • Provide adequate public parking and related support facilities (such as rest rooms and showers) at popular beach parks, including lifeguard equipment storage facilities in anticipation of increased lifeguard services needed at those parks. Improvements are planned for North Shore beach parks at Puʻuiki Beach, Laniākea, Chun's Reef, Kawailoa, Leftovers, Uppers, Kahawai, Banzai Rock, Kaunala, and Waialeʻe. • Acquire shoreline properties as opportunities arise or obtain public use easements and maintenance agreements with private landowners, especially lands adjacent to existing public parks.			
Maintenance and Management of Parks, Recreation Areas and Recreational Resources • Provide sufficient resources – including funding and manpower – to ensure that public facilities are adequately maintained. • Identify limitations on recreational resources and implement policies to regulate and mitigate impacts to these resources. • Establish and enforce rules and regulations to mitigate conflicts among recreational activities. • Engage public and private organizations in partnership with government agencies to maintain recreational resources.			X
Site Design of Recreational Facilities • Incorporate natural and/or cultural features of the site and use landscape materials that are indigenous to the area, where feasible, into the design of recreation facilities and areas. • Locate uses that generate high noise levels away from existing and planned residential areas. • Design and site improvements and landscaping to enhance the rural character and the aesthetic value of open space elements and natural resources. • Provide pedestrian and bicycle pathways from surrounding streets to parks, to facilitate convenient access to the parks. • Site parks and recreational attractions intended for regional or island-wide uses along or near regional roadways. • Minimize environmental impacts (such as siltation, pesticide and fertilizer runoff) of recreational facilities and activities. Expansive recreational facilities, such as community and regional parks, should comply with State Department of Health guidelines related to ground and nearshore water quality.			X
Recreational Activities that Support the North Shore's Economy • Promote recreational and specialty events such as surf meets, fishing tournaments, bike tours, races and other competitions which contribute to the North Shore's economy. Such events shall meet State and City rules and regulations for park and ocean uses to avoid conflict with recreational uses. • Manage impacts to the recreational resource and surrounding communities (such as noise, parking, traffic, etc.) associated with special events. • Promote instructional programs, training clinics and other activities that cater to the health and recreation industry and which will not impact the North Shore's rural character. • Explore the potential of equestrian activities, such as trail rides and riding adventures, as an adjunct to the area's attractions. • Support equine activities through a variety of means, including establishment of well-designed, safe riding trail networks linking destinations in the rural communities and in the mauka areas that have long been used by riders. Cooperative agreements for the development and maintenance of such networks should be forged through public-private partnerships.	X		

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
***Discussion*:** *The rural community commercial center supports the guidelines for parks and recreation. Although the project will be located mauka of Kamehameha Highway, its proximity to Pūpūkea Beach Park is an important consideration to the planning and design stages of the buildings. Public access to the Beach Park and the Pūpūkea-Waimea MLCD will not be affected by the project. Off-street parking will be provided for patrons of the rural center to prevent patrons from using the public parking designated for Pūpūkea Beach Park users.*			
Historic and Cultural Resources			
Guidelines			
• Implement in situ preservation and appropriate protection measures for sites that have high preservation value because of their good condition or unique, historic, cultural and archaeological features, and for which the State Historic Preservation Division has recommended such treatment. • Consider the particular qualities of a site and its relationship to its physical surroundings when determining the appropriate treatment for a site. Determine appropriate preservation measures, site boundaries and setbacks, and development restrictions on a site-by-site basis in consultation with the State Historic Preservation Division. • Include input from all pertinent community resources in the development of a site preservation plan. • Include sight lines and view planes that are significant to the original purpose and value of the site in criteria for adjacent use restrictions. • Determine the appropriateness of public access on a site-by-site basis in consultation with the State Historic Preservation Division, Hawaiian cultural organizations, and the owner of the land on which the site is located.			X
***Discussion*:** *The project site was surveyed for cultural and historic deposits. The negative findings determined that the project will not require an archaeological monitoring plan. While the guidelines for historic and cultural resources are not directly applicable to the project site due to its negative findings, SHPD will be notified and all construction work will immediately cease in the event that historic or cultural remains are discovered at the project site.*			
Residential Communities			
Guidelines			
Rural • Utilize a traditional density of one unit per acre with lots ranging in size from one to three acres, although alternative layouts that promote clustering are encouraged. Limit buildings to two stories or 25 feet, although the height may vary according to required flood elevation, slope, and roof form. • Ensure compatibility between country-district uses and adjacent agricultural lands, natural resources, views, or cultural features.			
Rural Residential • Densities range from five to eight units per acre, or up to 10 units per acre for alternative development options which enhance rural character and maximize consolidated, usable open space. Lot sizes range from 5,000 square feet to 10,000 square feet, allowing the application of optional design standards. For smaller lot developments of less than 5,000 square feet, alternative clustering is encouraged. • Use rural development standards to determine appropriate scale and character, smaller building footprints, greater setbacks, and more landscaping (use of hedges to create walls and grassed front yards, and rural roadways with no sidewalk, curbs, and gutters). • Avoid monotonous rows of garages and driveways along neighborhood street frontages by employing features such as varied building setbacks and shared driveways.			X

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
• Plan and design new or infill housing development, as well as modifications to existing homes, to be generally compatible with the predominant form and character of existing homes on adjacent properties and with the neighborhood as a whole. • Use plantation architectural features such as pitched roofs in varied forms, exterior colors and finishes, building orientation, floor plans and architectural details to provide visual interest and individual identity and accentuate the rural setting. In general, buildings are to be less than two stories or 25 feet, although the height may vary in response to required flood elevation, slope, or other physical site constraints. • Support affordable housing initiatives in areas designated for new housing development.			
Low-Density Apartment • Maintain the existing apartment district boundaries. • Densities range from 10 to 20 units per acre. Buildings should not be more than three stories or exceed 40 feet in height. • When possible, enhance the compatibility of development within apartment district uses with adjacent residential uses. • Employ building form, orientation, location of entries and landscape screening that reflects single-family residential character and provides greater privacy and individual identity for housing units. • Ensure compatibility of building scale, roof form and the quality of materials with those of adjacent residential areas.			X
Special Needs Housing • Locate special needs housing within or near Haleʻiwa or Waialua Towns within close proximity to public transit, community services and commercial activities, but not so clustered together to create a significant change to neighborhood character, especially as viewed along collector roads. • As an exception to standard density situations, special needs housing may have densities of up to 20 units per acre, not including beds in skilled nursing facilities, if they consist primarily of smaller dwelling units with residential scale and character. Proposals for special needs housing should be subject to community and agency review. • Limit building heights in line with the region's rural character. • Ensure compatibility of building scale, roof form, and materials with adjacent residential areas.			X
***Discussion*:** *The project is not zoned for residential housing. These guidelines are not applicable to the rural community commercial center project.*			
Commercial Areas			
Guidelines			
Haleʻiwa Country Town • Limit building heights to two stories, and employ building design elements which reflect the architectural characteristics of the early 1900-period architecture identified in the Haleʻiwa Special District Design Guidelines. • Incorporate generous, functional, public and open spaces reflective of the town's agricultural heritage. • Encourage commercial and related activities that are conducive to the pedestrian character to locate at the sidewalk level along Kamehameha Highway. Encourage less pedestrian-dependent and conducive activities (such as manufacturing areas for products and compatible light industrial uses, residences, services, etc.) to locate behind or above commercial activities so as not to detract from the commercial retail character of Kamehameha Highway.			X

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
• Focus the town's commercial core around a mix of compatible activities such as recreation, marine-related enterprises, farmers' markets, historic and cultural attractions, "clean" light industrial, small businesses and offices, civic and governmental services, businesses and retail activities for both residents and visitors. • Upgrade drainage, wastewater, and water infrastructure within Haleʻiwa Town, as needed. • Support home-based businesses and "Mom and Pop" type stores within the town center. • Concentrate new development near existing built areas emphasizing redevelopment and infill along Kamehameha Highway, makai of the Haleʻiwa Joseph P. Leong Highway (Haleʻiwa Bypass Road). Provide adequate landscaped buffer adjacent to the bypass. • Ensure that commercial uses adjoining the Kamehameha Highway corridor include support facilities such as parking lots and rest rooms that can adequately accommodate the planned commercial activities. • Support the expansion and enhancement of Haleʻiwa Harbor. If possible, integrate the harbor's attractions and facilities with commercial activities in Haleʻiwa Town. • Expand indoor recreational and educational facilities and programs (museums, movie theater, gym, and cultural performance theaters) and historical, cultural, and arts programs to further enrich Haleʻiwa's civic core. • Provide improved, expanded, and continuous pedestrian walkways linking commercial establishments within Haleʻiwa, including connections between farmers' markets or other kinds of agricultural product and retail outlets, and open space and environmental resources (such as beach parks, Haleʻiwa Harbor and Loko Ea Pond). • Enhance the attractiveness and general landscaped open space character of the area by providing roadway improvements, street trees, streetlights, street furniture, and signage compatible with the rural character of Haleʻiwa Town. • Continue to use and support production of a visitors' map showing attractions and services in Haleʻiwa. • Maintain Kamehameha Highway as a two-lane thoroughfare through Haleʻiwa Town. • Consolidate off-street parking to areas behind buildings, while retaining existing on-street parking wherever possible and appropriate. As needed, parking should be rearranged to accommodate the pedestrian walkway system along Kamehameha Highway. • Provide signage and other forms of orientation to help direct motorists through the town to major facilities and to off-street parking facilities. • Improve conditions for transit and bicycling through Haleʻiwa Town by providing better designed and located bus stops, and a designated bike lane through the town. • Enhance Weed Junction and Kamehameha Highway/Joseph P. Leong Junction, which are entry points to Haleʻiwa, in a manner which conveys their gateway functions through appropriate design, landscaping, signage and painting. • Encourage private and community-based initiatives to protect and enhance the streams, wetlands, and other natural resources within Haleʻiwa Town. Retain the agricultural use adjacent to Weed Junction and the Preservation designation at Loko Ea Pond.			
Waialua Country Town • Ensure new developments are consistent with the <u>Waialua Town Master Plan</u> recommendations for the town center. • Integrate neighborhood parks and community-oriented recreation areas into new residential development. • Locate churches and public facilities in or near the town. • Retain large, readily accessible open spaces where outdoor recreation facilities and neighborhood gardens create open vistas and green spaces. Retain open space entrances to			X

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
the town core, including Weed Junction, Thompson Corner, and Waialua Beach Road, with Waialua Park as the entrance to the country town district. • Incorporate significant historic features from the plantation era and earlier periods into new developments, where feasible and appropriate. Existing buildings of historical, cultural and/or architectural significance, such as the surviving elements of the Waialua Mill, should be preserved and maintained through rehabilitation and adaptive reuse. Where feasible, adapt and highlight these structures as landmarks and icons representative of Waialua's plantation town history. • While buildings in the commercial core may be two stories in height, one-story heights should be emphasized, in keeping with the area's historic scale and to preserve the prominence and views of existing mill structures. • New commercial buildings should be similar in architectural character, scale and materials to historic structures such as the former Waialua Sugar Company offices and the Waialua Library. • Use design guidelines described in the Waialua Town Master Plan to promote and develop a special image for Waialua's commercial and industrial core that reflects the town's historic character and reinforces the town's role as the cultural and business center for Waialua. Encourage renovations and new construction in accordance with the design guidelines. • Provide pedestrian and bicycle access between surrounding residential neighborhoods and Waialua's commercial core. • Encourage infill development and new commercial development around Kealohanui Street to strengthen the town core and provide the critical mass necessary in developing a healthy town center. • Direct new residential development outside but adjacent to the town core, as generally indicated on the Land Use Map. • Locate industrial uses around the former sugar mill (see Section 3.7 Industrial Areas for applicable policies and guidelines). • Promote agricultural support activities at the agricultural support area adjacent to the mill site. • New housing units should incorporate rural features (such as small building footprints, larger setbacks, and more landscaping) and be sited and organized to give a strong sense of community. • Work with developers to establish housing programs that place high priority on the needs of existing Waialua residents. • Provide job or entrepreneurial opportunities for area residents, and make available training programs for new jobs and businesses. • Promote historical and cultural attractions such as museums or activity centers that illustrate the history of the community or feature current agricultural operations near the mill site to encourage visitors to Waialua Town. • Encourage computer-oriented, high technology business, health care, and medical services to locate in Waialua. • Provide for safe and pleasant pedestrian circulation along the storefronts. As it redevelops, emphasize pedestrian circulation along Kealohanui Street. Retain a distinctive pedestrian-oriented commercial area for residents and visitors through the use of signage, street furniture, and street tree plantings to encourage walking and biking. • Support production of a map showing services in Waialua and attractions in the region, such as Ka'ena Point and nearby beach parks. • Promote Kealohanui Street as a pedestrian-oriented promenade in Waialua.			

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
• Link proposed pedestrian walkways to the Waialua Town core, including linkages to proposed farmers' markets and other kinds of agricultural product and retail outlets. • Provide convenient parking that should be landscaped and screened from roadways. • Enhance Waialua Beach Road and Farrington Highway as gateways to Waialua Town through signage and landscaping. • Plant street trees to enhance the pedestrian experience and to create a strong streetscape image. A detailed street tree and planting plan should be developed and implemented as part of the right-of-way plan.			
Rural Community Commercial Center • Limit rural community commercial centers to existing zoned areas between Pūpūkea Road and Pāhoe Road that currently serve the commercial needs of residents and visitors. • Design rural community commercial centers to provide a compact and efficient organization of various commercial services which primarily serve the immediate community. • Architectural scale and character should respect the surrounding natural features, and adjacent residential areas. Buildings should reflect a rural character compatible with surrounding open spaces and adjacent residential use. • Limit building heights to no more than two stories. • Locate parking behind buildings or provide parking that is landscaped. Parking should be visually screened from the street and adjacent residential lots, by planting a landscaped screen of trees and hedges along street frontages and property lines and planting shade trees throughout the parking lot. • Incorporate pedestrian and bicycle facilities, including bicycle paths and storage racks, and off-site improvements such as crosswalks. • Site bus stops in close proximity to rural community commercial centers.	X		
Country Stores • Design country stores to be small-scale, freestanding, compact commercial facilities. Prohibit country stores from expanding to larger, continuous commercial strip types of developments along arterial roads. • Limit country stores primarily to retail uses that provide services to the surrounding community. • Architectural scale and character should respect the surrounding natural features, and adjacent residential areas. Buildings should reflect a rural character compatible with surrounding open spaces and adjacent residential uses. • Limit building heights to one story. • Locate parking behind buildings, or provide parking that is landscaped. Parking should be visually screened from the street and adjacent residential lots, by planting a landscaped screen of trees and hedges along street frontages and property lines and planting shade trees throughout the parking lot. • Promote pedestrian and bicycle access to country stores. • Assist business owners with maintaining their financial stability to ensure that country stores remain in operation.			X

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
***Discussion*:** *The project concept and design were derived from the guidance of the NSSCP and the Rural Community Commercial Center guidelines for the project site. The B-1 Neighborhood Business zoned project site was designated as Rural Community Commercial Center, in an effort to consolidate the future of existing and new commercial uses in the Sunset Beach-Pūpūkea region. The rural center will follow a style consistent with the surrounding North Shore country setting. The planned commercial uses at the center will be clustered into two main commercial buildings -one building on the north side aligned mauka to makai, and the other building at the center of the parcel extending parallel to the grade and highway. Parking will be provided in the rear of the buildings to promote an open frontage along Kamehameha Highway. Open space areas and landscaping will be incorporated throughout the project site.*			
Industrial Areas			
Guidelines			
• Maintain adequate open buffer zones between industrial activities and residential districts. • Minimize impacts (views, noise and smells) and reduce the visibility of large building masses, machinery elements, parking, storage areas, industrial equipment and operation areas through proper site planning and landscape plantings. • Encourage uses which have few environmental impacts and those which complement the development scale of the surrounding community. • Allow low-impact, service industrial uses in enclosed buildings within the Haleʻiwa and Waialua Country Town Districts, so as not to detract from the pedestrian-oriented commercial/retail character of roadways, such as Kamehameha Highway, Kealohanui Street, and Goodale Avenue. These could include manufacturing of clothing, arts and crafts and surfboard repair. • Building height and form should reflect the contexts of their sites. At the Waialua Mill site, they should follow guidelines reflecting the Mill's image. In Haleʻiwa Town, they should follow the Haleʻiwa Special District Design Guidelines. In Waialua Town, they should be consistent with guidelines of this document and the Waialua Town Master Plan. In general, buildings should be designed to reflect the architectural character of Haleʻiwa or Waialua Town. Basic design principles, texture, construction materials, and colors should be compatible with the styles from the era and surrounding buildings. • Where taller vertical structures are required as part of an industrial operation, site and design such structures to minimize impacts on view planes and reduce visibility from scenic vistas, public roadways, residential areas, commercial areas, parks, and other significant open space areas. • Limit industrial uses located along the shoreline to water-dependent activities (such as boat repair and maritime-related activities). Consider environmental, visual, and noise impact during the permit application process. • Maintain and upgrade infrastructure to support industrial facilities.			
***Discussion*:** *The project is a rural community commercial center which will provide goods and services to the North Shore community. The guidelines related to industrial areas are not applicable to the project.*			
Visitor Accommodations			
Guidelines			
• Allow visitor accommodations in Haleʻiwa Town to help restore and promote the historic character of the town. • Design visitor accommodations to be consistent with the Haleʻiwa Special District Design Guidelines. In general, visitor accommodations should be small in scale (limited to two stories in height), be compatible with the architectural style and character of Haleʻiwa Town, and observe the same building envelopes and design standards of adjacent buildings. • Provide convenient and safe access for pedestrians and vehicles.	X		

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
• Incorporate mixed use that caters to pedestrian activity located on the ground floor and visitor accommodations provided on the upper floor. • Provide adequate off-street parking which is landscaped and screened from public roadways. • Address the streetscape and provide a setting that is conducive to pedestrian activity, when located along pedestrian-oriented streets. • Ensure that existing and/or proposed infrastructure can adequately accommodate the proposed development and associated visitor population. • Minimize impacts (noise, traffic, parking, visual) on surrounding activities/properties and from public roadways. • Prohibit the granting of new permits, including nonconforming use certificates for B&B and vacation rental operations on the North Shore.			
***Discussion*:** *The project is meant to provide a range of goods and services for residents and visitors of the area. While the rural center will not be a visitor accommodation, it will still support the guidelines including compatible architectural style and character; convenient and safe access for pedestrians and vehicles; adequate off-street parking; providing a setting conducive to pedestrian activity when located along streets; ensuring infrastructure can adequately accommodate the development; and minimizing impacts on surrounding activities/properties.*			
Institutional Uses			
Guidelines			
• Colocate neighborhood or community parks with elementary or intermediate schools and coordinate design of facilities when efficiencies in development and use of athletic, meeting and parking facilities can be achieved. • Colocate social, social service institutions, and other public service agencies to provide convenient one-stop services to the region.			X
***Discussion*:** *The rural community commercial center will not include social service institutions or community parks. These guidelines are not applicable to the project.*			
Military			
Guidelines			
• Encourage all government agencies (City, State, and Federal) to coordinate efforts with the U.S. military, especially where the Kahuku and Kawailoa Training Areas overlap with environmentally sensitive areas. • Encourage the military to provide appropriate infrastructure services to support military uses on their lands and minimize any potential impacts to the region. • Work with the military to allow use of Drum Road as an emergency access bypass route during natural disasters or other emergency incidents. • Encourage low-rise military facilities that support educational and recreational programs and are compatible with the region on military reservation lands such as Dillingham Airfield.			X
***Discussion*:** *The project is a rural community commercial center and on private lands. The guidelines related to military are not applicable to the project.*			
Transportation Systems			
Guidelines			
• Establish rural streetscape design and development standards within residential areas consistent with the rural character of the region. Allow for rural elements that reduce the amount of impervious surfaces, such as minimum pavement widths to support traffic demands and emergency vehicle access, shared driveways, reduced parking requirements, more landscaping, and grassed swales as an alternative to sidewalks with curbs and gutters. • Emphasize accessibility from residential streets to bus routes, parks, schools and commercial centers. Design roadways to facilitate the use of alternative transportation forms, including bicycle and pedestrian travel, and personal motorized devices.	X		

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
• Provide scenic lookout points to minimize hazards created by slower sightseeing traffic and to enhance the appreciation of the region's scenic resources. • Provide appropriately sited and designed off-street parking areas at popular beach parks wherever feasible, including parking in support parks mauka of the highway. • Study the safety and feasibility of developing passing zones on Kamehameha Highway and Kaukonahua Road from Haleʻiwa/Waialua to Wahiawā to reduce traffic delays due to slower moving vehicles, and to improve safety conditions. • Provide safety improvements along Kaukonahua Road and Kamehameha Highway from the Joseph P. Leong Highway (Haleʻiwa Bypass Road) to Wahiawā and beyond. Promote the development of emergency runaway vehicle ramps on Kamehameha Highway and Kaukonahua Road, from Wahiawā to Haleʻiwa/Waialua. • Approve new residential and commercial development only if the State DOT and the City DTS certify that adequate transportation access and services can be provided. • Continue to include the daily visitor population that visits the North Shore in determining allocations of resources and facilities for the North Shore. • Promote the use of transportation demand management strategies, including measures such as ride-sharing (car/van pooling), improved bus service and routes, the use of non-vehicular travel modes, modified work hours and teleworking to reduce commutes. • Protect the natural resources of Kaʻena Point from potentially damaging vehicular traffic. Prohibit construction of a roadway around Kaʻena Point. • Provide pedestrian-friendly walkways, off-street parking, bus pull-outs, tour bus maneuvering areas, and drainage improvements in Haleʻiwa Town. • Improve the main roadways within Haleʻiwa and Waialua Country Town Districts with shade trees, landscaping, sidewalks, street furniture, and signage to promote pedestrian orientation within these country towns. • Create a regional pedestrian/bikeway system linking the parks, schools and town centers in Haleʻiwa and Waialua with outlying communities. • Coordinate bikeway development with responsible State and City agencies and private landowners to ensure that safety, liability, and a mixture of use issues are adequately addressed. • Locate bus stops to be convenient and accessible to residential areas and hubs of community activity. • Design bus shelters to provide weather protection for bus passengers and complement the natural setting. • Explore the possibility of a Historic Haleʻiwa Trolley as an alternative for visitors to experience the North Shore. • Encourage the State to upgrade, maintain, and expand the boating facilities at Haleʻiwa Harbor to meet the needs of recreational and commercial fishing and leisure boating activities. • Maintain small aircraft, general aviation and other recreational, commercial, or other military uses at Dillingham Airfield in cooperation with the U.S. Army. As necessary, upgrade and maintain facilities to support airfield use. • Limit uses in the vicinity of Dillingham Airfield to those that are compatible with aircraft noise levels and overflights from the airfield. • Identify and maintain former cane haul roads and other mauka roads to provide for the safe and quick evacuation of residents and the movement of emergency response personnel (e.g., fire, police, ambulance) in the event that the primary highways become impassable due to natural disasters or other emergency incidents. Investigate the use of the following for safety and emergency access: the cane haul road system mauka of Farrington Highway in Mokulēʻia; the roads connecting with Drum Road including cane haul road (Twin Bridge Road) in			

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu **S = Supportive, N/S = Not Supportive, N/A = Not Applicable**	**S**	**N/S**	**N/A**
Haleʻiwa, Kawailoa Road, Ashley Road, Pūpūkea Road and Motocross/Kaunala Road. COMSAT/Girl Scout Camp (Paumalū) Road does not connect with Drum Road and would be for evacuation use only.			
***Discussion*:** *The project supports the guidelines related to transportation systems. A full discussion on the roadway improvements associated with the project is provided in Section 3.13 of this EIS.*			
Water Systems			
Guidelines			
• Confirm that adequate potable and nonpotable water is available before approving new residential or commercial development. • Ensure that State and private well development projects are integrated into and consistent with City water source development plans. • Support infrastructure improvements that provide for the efficient and secure transmission and delivery of quality water. • Conserve the use of potable water by implementing the following measures, as feasible and appropriate: low-flush toilets, flow constrictors, rainwater catchment and other water conserving devices in commercial and residential developments; indigenous, drought-tolerant plant material and drip irrigation systems in landscaped areas; and reclaimed water for the irrigation of agricultural lands, parks, golf courses and other landscaped areas where this would not adversely affect potable groundwater supply or pose possible health and safety risks.	X		
***Discussion*:** *The project supports the NSSCP's guidelines for water systems. Water will be supplied through an existing BWS water meter. BWS has confirmed that offsite water protection is adequate to accommodate the project.*			
Wastewater Treatment			
Guidelines			
• Use reclaimed water for irrigation and other uses, where feasible, in accordance with the Guidelines for the Treatment and Use of Recycled Water (May 15, 2002) by the State Department of Health and the No Pass Line established by the Board of Water Supply. A "wetlands" treatment system could serve as wild bird refuges that could also be used as a picnicking area and/or children's fishing park. • Replace outdated individual cesspools with septic tanks and individual wastewater systems. Consider public programs or policies to support private conversion efforts. • Discourage new residential, commercial or school uses in close proximity to wastewater treatment facilities where odors may be objectionable. • Identify appropriate areas and technologies for future wastewater facilities that maintain the rural character and are proportionate to future population projections. • Do not permit an ocean outfall for treated wastewater effluent in the North Shore area.	X		
***Discussion*:** Section 3.16.2 *of the EIS describes the wastewater system appropriate for the project. The site lies outside of the Honolulu Board of Water Supply No Pass zone, where installation of waste treatment facilities is allowed.*			
Electrical Systems			
Guidelines			
• Provide adequate and reliable electrical service. • Locate and design system elements such as electrical power facilities, substations, communication sites, and transmission lines to avoid or mitigate any potential adverse impacts on scenic and natural resources. • Locate powerlines underground or away from Kamehameha Highway. • Promote the use of renewable energy sources and energy conservation measures.	X		

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
***Discussion*:** *The existing utility lines are adequate for the project's electrical demand. Renewable energy will also be generated on-site from solar photovoltaic panels. Required utility lines on-site will be underground.*			
Solid Waste Handling and Disposal			
Guidelines			
• Expand recycling collection facilities and services, and public outreach and education programs that promote responsible waste management and source reduction. • Encourage recycling of regional green waste by establishing green waste facilities in an appropriate location, possibly integrated with or adjacent to the Kawailoa Refuse Transfer Station. • Expand the use of automated refuse collection in residential areas. • Monitor and regulate illegal dumping and littering activities.	X		
***Discussion*:** *Solid waste for the construction and operations of the project will be transported off site. Recycling will be encouraged for all tenants of the rural community commercial center.*			
Drainage Systems			
Guidelines			
• Require all structural and land improvements to provide adequate drainage and flood mitigation measures to reduce storm runoff and flood hazard. • Employ retention and detention methods that allow for the gradual release of stormwater. Where feasible, use open spaces, including parking lots, landscaped areas, and parks, to detain or allow ground infiltration of storm water flows to reduce their volume, runoff rates, and the amounts of sediment and pollutants transported. • Use detention/retention basins as passive recreational areas and to provide recreational access for pedestrians and bicyclists. • Retain natural gulches as flood plains and open space resources. Restrict development within gulches, and prohibit grading or other disturbance of gulch walls. • Emphasize control and minimization of nonpoint source pollution in drainage system design. Where hardening of stream channels is unavoidable, improvements should protect habitat, maintain rural character and aesthetic quality, and avoid degradation of coastline and of stream and nearshore water quality, consistent with guidelines stated in Section 3.1.2.4. • Design drainageways to control 100-year floods. Any future work performed within the 100-year floodplain shall adhere to the requirements of the Federal Emergency Management Agency (FEMA) and meet all flood-proofing requirements. • Regularly maintain and clean drainageways and flood mitigation structures of debris to ensure that they achieve the purpose for which they were designed. • Employ best management practices to minimize runoff from existing conservation and agricultural land uses, and other areas that may generate sediment and debris. • Repair and maintain related agricultural irrigation systems and infrastructure. • Develop a drainage master plan for the Waialua watershed to address erosion and flood protection concerns. • Conduct public outreach and education programs that explain the potential for flooding and efforts to minimize the effects of flooding.	X		
***Discussion*:** *Storm water from the project site will be collected through gutters, drain inlets, catch basins, trench drains, and pervious pavement. These flows will then be transported through the flow- and volume-based Best Management Practices (in the form of bioswales, rain gardens, planter boxes, sand filters, and infiltration chambers) toward a detention system at the front of the project.*			
School Facilities			
Guidelines			

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
• Confirm the adequacy of school facilities before approving new residential development. Approve new residential developments only after the State Department of Education confirms that adequate school facilities, either at existing schools or at new school sites, will be available at the time new residential units are occupied. • Design DOE schools as community centers to facilitate community use after school hours. • Colocate elementary and intermediate schools with parks, and coordinate facility design with the State DOE and the City DPR whenever possible to avoid duplication of parking and athletic, recreation, and meeting facilities. • Coordinate the development and shared use of athletic facilities such as swimming pools, gymnasiums, and playfields and courts with the DOE where the joint use of such facilities would maximize use and reduce duplication of function without compromising the schools' athletic programs. • Promote facility design and construction that allows for school buildings to be used as public hurricane shelters. • Support the State DOE's request for school impact fees from developers of residential projects to ensure that adequate school facilities are in place at the time new residential units are occupied.			X
***Discussion*:** *The rural community commercial center will not be located adjacent to any DOE schools, and will not affect school facilities and/or operations. The guidelines related to school facilities are not applicable to the project.*			
Public Safety Facilities			
Guidelines			
• Include visitor demands and needs when allocating public safety resources. • Sponsor public education programs to increase awareness about public safety issues. • Identify, improve and service transportation networks (via signage, traffic control personnel and equipment) to ensure efficient evacuee movement. • Support highway improvements that would reduce emergency vehicle response times and facilitate emergency personnel movement through traffic. • Expand lifeguard services at beaches with high visitor demands, such as Laniākea, Chun's Reef, and Velzyland. • Confirm the availability of adequate police and fire protection before approving new development. • Increase police presence, including car and bicycle patrols and community policing efforts, especially in high-theft areas such as beach parks. Support the availability of adequate staffing and funding to enable this. • Establish facilities which police officers could use as a local base of operations. • Support the physical improvements and infrastructure upgrades needed to ensure adequate fire protection. • Use crime-preventive principles in the planning and design of communities, open spaces, circulation networks, and buildings. • Design new public buildings such as schools and recreation centers to serve a secondary function as an emergency shelter.			X
***Discussion*:** *Public safety facilities and programs are primarily the responsibility of the State and City. As such, the guidelines are not applicable to the project.*			
Other Community Facilities			
Guidelines			
• Encourage colocation of antennae; towers should host the facilities of more than one service provider to minimize their proliferation and reduce visual impacts.			X

Table 4-6 North Shore Sustainable Communities Plan - Objectives and Policies - City and County of Honolulu S = Supportive, N/S = Not Supportive, N/A = Not Applicable	S	N/S	N/A
• Mount antennae onto existing buildings or structures so that public scenic views and open spaces will not be negatively affected. However, except for the occupant's personal use, antennae on single-family dwelling roofs in residential districts are not appropriate. • Use "stealth" technology (e.g., towers disguised as trees) especially on free-standing antenna towers in order to blend in with the surrounding environment and minimize visual impacts.			
***Discussion*:** *Community facilities such as cell service towers are primarily the responsibility of the State and City. The guidelines are not applicable to the project.*			

4.3.4 Coastal View Study

In 1987, the City and County of Honolulu published a Coastal View Study for the island of O'ahu, which identified and inventoried the coastal views and land forms of the island. The study provides accompanying recommendations for the City's preservation and enhancement of coastal views to better manage development and as a supporting document to Federal and State policies related to coastal views.

The significant view identified in the vicinity of the project area included Section E of the North Shore Viewshed. Section E consists of 5.75 miles of coastline from Waimea Bay to Kawela Bay.

Significant Roadway Views include the following:

- NS-6 Makai views from Kamehameha Highway looking across the bay (from both sides of Waimea) and continuous intermittent views at the area fronting Pūpūkea Beach Park.
- NS-7 Intermittent makai views from Kamehameha Highway between Pūpūkea Beach Park to Sunset Beach.
- NS-8 Intermittent makai views from Kamehameha Highway. Views also include important open space (agriculture) and landscape features (Ironwood trees).

Significant Stationary Views include pedestrian views from the road pull-over above Waimea Bay, from the shoreline at Waimea Bay and from the coral formations at Pūpūkea Beach Park.

***Discussion*:** The rural community commercial center is located mauka of Kamehameha Highway, and will be designed in compliance with height requirements for the B-1 Neighborhood Business zoned district. As such, the project will not affect significant roadway views makai of Kamehameha Highway looking out towards Pūpūkea Beach Park. The project will may also increase public opportunities to view the coast from the outdoor areas of the project.

4.3.5 Complete Streets Policy

In 2012, the Honolulu City and County formally implemented provisions of Hawaii Revised Statute §264.20.5 by amending Chapter 14 (Public Works Infrastructure Requirements Including Fees and Services) Article 33 Revised Ordinances of Honolulu (ROH). The policy adopted the following objectives for complete streets principles:

(1) Improve safety;

(2) Apply a context sensitive solution process that integrates community context and the surrounding environment, including land use;

(3) Protect and promote accessibility and mobility for all;

(4) Balance the needs and comfort of all modes and users;

(5) Encourage consistent use of national industry best practice guidelines to select complete streets design elements;

(6) Improve energy efficiency in travel and mitigate vehicle emissions by providing non-motorized transportation options;

(7) Encourage opportunities for physical activity and recognize the health benefits of an active lifestyle;

(8) Recognize complete streets as a long-term investment that can save money over time;

(9) Build partnerships with stakeholders and organizations statewide;

(10) Incorporate trees and landscaping as integral components of complete streets.

The 2016 *Honolulu Complete Streets Design Manual* provides guidance to plan and design streets that adhere to the legal framework established by the ordinance and applies to applies to all projects that impact the public right-of-way along City and County of Honolulu streets.

5.0

ALTERNATIVES

5.0 ALTERNATIVES

5.1	Project Objectives and Evaluation Criteria	5-1
5.2	Alternatives Considered and Dismissed from Further Study	5-2
5.3	No-Action Alternative	5-3
5.4	Commercial Village Alternative	5-7
5.5	Commercial Shopping Center Alternative	5-7
5.6	Alternative Development Timetable (Deferral)	5-9
5.7	Summary Comparison of Alternatives	5-10

Alternatives to the Proposed Action for development of the Pūpūkea Rural Community Commercial Center address a range of options for the future use of the subject properties. A wide range of alternative uses are considered, with identification and review under the established project Objectives and Evaluation Criteria. Several alternatives are considered and dismissed from further study, as they would not result in the achievement of the project objectives. ~~Three~~ Four alternatives are evaluated in greater detail, including the No-Action Alternative, a Commercial Village Alternative, a Commercial Shopping Center Alternative and Alternative Project Timetable (Deferral).

5.1 PROJECT OBJECTIVES AND EVALUATION CRITERIA

The stated objectives of the project are in support of the development of a Rural Community Commercial Center consistent with the policies and guidelines of the North Shore Sustainable Communities Plan. The rural center is intended to provide goods and services to residents of the Pūpūkea, Waimea and Kawailoa communities and its visitors. This proposed action is consistent with the commercial zoning of the parcels and the government/community long range plans for the properties. A description of the center is presented in *Chapter 2*.

The Objectives for the project are stated in Chapter 2 as Major Themes and Planning Principles, in summary described as:

1. Creation of a Community Gathering Place,
2. Sensitivity to the Environment and Sustainability,
3. Setting for Local Hawaiʻi Businesses to Thrive, and
4. Honoring Hawaiian Culture and the North Shore Lifestyle.

Within the context of the four project Objectives, there are four primary Evaluation Criteria which must be satisfied for the project to be economically viable and socially and environmentally responsible. The four criteria were developed by the planning team to establish standards upon which planning judgments or decisions can be made in examining alternative actions to be included in the project.

The four Evaluation Criteria used to gauge the project's proposed uses or activities include:

1. Fulfill the Policies and Guidelines established for the Rural Community Commercial Center in the 2011 North Shore Sustainable Communities Plan.
2. Design of the site and facilities must meet environmental standards and strive to achieve sustainable design and operations standards.
3. Provide space for local Hawaiʻi entrepreneurs and enterprises to conduct business and provide employment opportunities for North Shore residents.
4. Hawaiian Culture and North Shore Lifestyle themes and elements are integrated in the places, buildings, landscape and center programming.

With achievement of the specifically defined project objectives in perspective, a range of potential alternative actions could be contemplated. For this EIS alternatives analysis, several categories of alternatives to the Proposed Action are evaluated in this section. Alternatives to the Proposed Action include the following: 1) No-Action Alternative, 2) Alternative Locations for the Proposed Project, and 3) Alternative Development Scenario. The following analysis provides an evaluation of the wide range of alternatives considered.

5.2 ALTERNATIVES CONSIDERED AND DISMISSED FROM FURTHER STUDY

The state objectives of the project are in support of the development of a Rural Community Commercial Center consistent with the policies and guidelines of the North Shore Sustainable Communities Plan. Alternative uses of the property could be considered for certain uses that are not consistent with the existing B-1 Neighborhood Business District zoning under the City's Land Use Ordinance. These alternative land uses which are not consistent with the B-1 zoning district include: agriculture, open space/park/outdoor recreation, government/public facilities, residential development or industrial use. An alternative location option and the potential for project delay are also considered. A summary of these potential alternative uses is provided as follows, assessed in the context of the established project Objectives and Evaluation Criteria, including compliance with North Shore SCP policies and guidelines.

Agricultural Use. The property has generally poor soils for commercial scale cultivated crops, orchard or nursery, and is also surrounded by residential uses and commercial uses. Many other agricultural parcels are available on the North Shore with better quality agricultural soils and fewer conflicts with adjoining land uses. Agricultural use would not meet the objectives and criteria for the creation of a rural center for local businesses and community gathering and was dismissed from further study.

Open Space Park/Recreation Use. The property is across the highway from a large continuous County beach park system, which provides a significant open space resource for the community and visitors. Open space park and recreation use would not meet the objectives and criteria for the creation of a rural center for local businesses and community gathering and was dismissed from further study.

Government/Public Facilities Use. The development of a government center or public facilities would duplicate resources existing elsewhere in the community, such as the schools and recreation centers, and satellite city hall near population centers in Wahiawa and Kaneohe. Government facilities use would not meet the objectives and criteria for the creation of a rural center for local businesses and community gathering and was dismissed from further study.

Residential Use Alternative. The property would require an unlikely rezoning to allow for redevelopment as a residential project. With R-5 Residential District zoning, the property could support a single-family residential subdivision with approximately 18 to 20 homes. Impacts such as traffic, runoff and wastewater could be considerable with this potential use. Residential development use would not meet the objectives and criteria for the creation of a rural center for local businesses and community gathering and was dismissed from further study.

Industrial Use Alternative. The property would require an unlikely rezoning to allow for redevelopment as an industrial park project. With I-1 Industrial District zoning, the property could support an industrial subdivision with approximately 10 business sites of 10,000 SF each. Impacts such as traffic, runoff and wastewater could be considerable with this potential use. Industrial development use would not meet the objectives and criteria for the creation of a rural center for local businesses and community gathering and was dismissed from further study.

Alternative Project Location. This alternative considers the relocation of planned commercial uses to an alternate location. There are no other locations on the North Shore that have been designated in the NS Sustainable Communities Plan for development of a Rural Commercial Community Center. Use of land at a different North Shore location would not meet the specific SCP designation of this Pūpūkea site. There are undeveloped parcels in Sunset Beach, Pūpūkea, Kawailoa and Waialee, but most are zoned for agricultural use and would require rezoning to State Urban Land Use and City/County commercial zoning. In all circumstances, these properties would be less suited to commercial center development due to their adjoining neighborhood settings, and their location away from the community center. Commercially zoned properties which may possibly be available in Haleʻiwa, Waialua, Kahuku and Lāʻie are distant from the Sunset Beach/Pūpūkea area and would not improve the local community's access to goods and services. In conclusion, the development of a center at an alternative location would not meet the objectives and criteria to create a rural center for local businesses and community gathering. This alternative was dismissed from further study.

5.3 NO-ACTION ALTERNATIVE

The No-Action Alternative is the baseline against which all other alternatives are measured. Under this scenario, the existing subject properties would remain as described under "existing conditions" in Chapter 3. The commercial uses on the property are entitled under the SMA Minor Permit approved in August 2017 (2017/SMA-21). In the No-Action Alternative, these approved uses would continue operations on the property indefinitely and include five mobile food establishments (food trucks) and businesses operating from the four existing commercial buildings.

The No-Action Alternative would dismiss the future development of the proposed action for the Rural Community Commercial Center designed to be consistent with the principles of the North Shore Sustainable Communities Plan. There would be no further development actions on the property for either temporary uses, new permanent structures or supporting infrastructure.

The potential impacts of the No-Action Alternative are summarized below for the anticipated future conditions under the various EIS impact assessment categories.

Soils. Soils disturbance would be limited to the existing operations, with soils stabilization and erosion control measures in place. No new grading or excavation would occur.

Flora/Fauna. Flora and fauna disturbance would be limited to the existing site conditions, with no beneficial landscape enhancements to establish new habitat.

Water Use. Water use for potable demand and landscape irrigation would be comparable to the existing levels of water demand. There would be no increase in water use.

Wastewater. Wastewater produced on site would be comparable to existing levels, managed through the limited IWS service and the portable toilets/hand wash station.

Drainage/Storm water Management. Drainage conditions and storm water management would be similar to existing conditions, with the recently installed storm water management controls.

Traffic & Transportation. Traffic conditions with the existing facilities would utilize the existing driveway to the properties, and not consolidate the driveway with the entrances for the Foodland grocery store. Bicycle and pedestrian circulation would continue without further improvements.

Economics/Fiscal. Revenues associated with the existing facilities would be the same as with the existing commercial uses of the property. There would be no additional expansion of business establishments, employment or government revenues. The estimated total employment on the property is 25 full time equivalent jobs among the various tenants operating on the property. In 2017, the Real Property Tax for the parcels totaled $36,000 to the City and County of Honolulu.

Land Use/Zoning. The continued use of the property in its existing operations would be consistent with the commercial zoning. However, the No Action alternative would not achieve the policies and objectives of the North Shore SCP. There would be no further improvements made at the site which would help provide goods and services to the surrounding community. The No Action alternative also would not create a greater community gathering place, and those elements which could support a holistic Rural Commercial Center for Pūpūkea/Sunset Beach.

Archaeological and Cultural Resources. The use of the property under existing conditions would have no adverse effect on archaeological and cultural resources.

Groundwater. There would be no new effects to groundwater resources at the property with the existing commercial operations. The existing disposal system from the ATU IWS and storm water infiltration areas would be the only inputs to groundwater on the property, with minor contributions of nutrients to shallow groundwater.

Surface Water/Storm Water Runoff Quality. Storm water management controls on the property would minimize the release of suspended sediment and urban runoff contaminants. Runoff water reaching the ocean would be comparable quality as with the existing conditions.

Marine Environment. Storm water management controls on the property would minimize the release of suspended sediment and urban runoff contaminants. The minor contributions of nutrients in shallow groundwater from wastewater disposal will not adversely affect the nearshore water quality. The marine environment would not be adversely affected by the no-action alternative.

Noise and Air Quality. Noise conditions at the property would be the same as with the existing commercial operations with set operational times. There would be no change in existing effects to air quality, such as dust and vehicle emissions.

Visual Resources. Existing views of the ocean, coastline and mountains would continue to be affected in a similar manner to the existing conditions. There would be no significant improvements at the property for landscaping, buffers, driveways, setbacks, and commercial buildings.

5.4 COMMERCIAL VILLAGE ALTERNATIVE

The Commercial Village Alternative would propose development of the three parcels (2.7 acres) with commercial retail uses as allowed in the B-1 Neighborhood Business zoning district. The Commercial Village Alternative would consist of a smaller development than the Rural Community Commercial Center.

The Commercial Village Alternative would include four single-story commercial buildings combined with mobile food establishments, parking and infrastructure. Developed in a clustered building concept fronting Kamehameha Highway, the Commercial Village Alternative would develop approximately 17,000 SF net leasable floor area, equivalent to 60 percent of the leasable space planned for the Rural Community Commercial Center. The alternative project would be developed as a grouping of four village style single-story wooden buildings, each with approximately 4,250 SF net leasable floor area. Tenants in these commercial spaces would include businesses that provide goods and services to the surrounding communities of Pūpūkea, Sunset Beach and Kawailoa. These tenants could potentially include services for health care, pharmacy, financial services, fitness, professional services and a small restaurant, along with retail tenants for ocean sports, outdoor activity, apparel, jewelry, and art and music. The economic viability of the smaller commercial center would need careful review due to the high costs for land, site work and infrastructure development.

The Commercial Village Alternative would include up to ten (10) mobile food trucks. The food trucks would provide a wide range of quick serve food options, clustered in a central food court with seating areas situated within the landscaped area in the makai portion of the property fronting the highway. A common restroom facility would serve patrons of the Commercial Village. The development of approximately 17,000 SF of commercial buildings would result in a .146 FAR (Floor Area Ratio), representing roughly 15 percent of the allowable commercial density of the subject properties. The total floor area developed in the Commercial Village would equate to roughly 70 percent of the commercial floor area at the adjoining Foodland Pūpūkea store.

To minimize development costs in keeping with the smaller revenue-generation of less square footage, the single-story buildings for the Commercial Village Alternative would be constructed along a food truck court parallel to the highway frontage with parking sited behind. Limited public common area with a walkway would be arranged around landscaping along the highway frontage. Supporting infrastructure would include a wastewater treatment system, at-grade parking, driveways, and solid waste consolidation and pick-up along the Kamehameha Highway side of the lots. This alternative would limit the creation of an open landscaped public gathering area.

A single driveway would be developed to provide access off Kamehameha Highway for the Commercial Village. There would be an internal connection to the neighboring Foodland parcel, with no change to the existing Foodland access driveways and parking area. The Commercial Village would have a paved parking area for 100 to 110 vehicles, with 50 parking spaces to support commercial tenant space, and 60 parking spaces in support of the 10 food trucks (6 spaces/truck).

The potential impacts of the Commercial Village Alternative are evaluated in the following discussion for the anticipated future conditions in the various EIS impact assessment categories.

Soils. The property would be graded for utilities, building foundations and parking areas. The development would comply with rules for erosion protection and low impact development.

Flora/Fauna. Flora and fauna disturbance would be temporary during construction. The site coverage from shopping center buildings and parking area would limit opportunities to create beneficial landscape enhancements.

Water Use. Water use for potable demand by the Commercial Village Alternative would require service for tenants, projected at approximately 5,120 to 5,600 gpd with landscape irrigation.

Wastewater. Wastewater generation by the Commercial Village alternative would be projected at 5,500 to 5,800 gpd, which would require an on-site wastewater system with a subsurface disposal field.

Drainage/Storm water. Drainage conditions and storm water management would meet City standards. With the Commercial Village Alternative, separated buildings would provide areas for on-site infiltration. Compliance with low impact development rules provides for detention and settling of sediments to the extent practicable prior to off-site release.

Traffic & Transportation. Traffic conditions with the Commercial Village Alternative including 10 food trucks would generate approximately 650 to 700 vehicle trips daily, and 75 to 80 Saturday peak hour trips with access via Kamehameha Highway. Bicycle and pedestrian circulation would improve with a frontage walkway and possible highway crosswalk.

Economics/Fiscal. Revenues associated with the Commercial Village Alternative would be substantial, yet the project's overall economic viability would need careful consideration. There would be an expansion of business establishments, employment or government revenues. The estimated total employment would be 55 to 60 long-term jobs among the various tenants. The Real Property Tax due to the City and County of Honolulu would be about $106,000 annually.

Land Use/Zoning. The Commercial Village Alternative use of the property would be consistent with the commercial zoning. There would be very limited community gathering area due to the sprawling single-story development and parking requirements, which limit the open space/public areas and landscape setting. However, the No Action alternative would not be consistent with all the policies and objectives of the North Shore SCP. The Commercial Village would help provide goods and services to the surrounding community, however, with the smaller project scale there would be a limited number and variety of businesses and tenant composition.

Archaeological and Cultural Resources. The use of the property under the Commercial Village Alternative would have no adverse effect on archaeological resources. The sprawling development could limit the open space/public areas and landscape setting for cultural education and activities.

Groundwater. There would be limited impacts to groundwater resources at the property with the Commercial Village Alternative operations. Approximately 5,200 to 5,800 gpd would be treated and released through ground disposal. With proper treatment, wastewater effluent would infiltrate into the subsurface aquifer, and ultimately release with natural groundwater into the nearshore ocean.

Surface Water/Storm Water Runoff Quality. Storm water management controls on the property would be installed to minimize the release of suspended sediment and urban runoff contaminants. See "*Drainage*" above.

Marine Environment. Storm water management controls on the property with the Commercial Village Alternative would minimize the release of suspended sediment and urban runoff contaminants. There would be contributions of nutrients in groundwater resulting from ground disposal of up to 5,800 gpd of wastewater. With proper treatment and disposal, there would be little potential for adverse effects to the nearshore ocean water quality and marine environment.

Noise and Air Quality. Construction phase noise and dust generation with the Commercial Village Alternative would represent short term adverse effects. Once operational, the alternative would have noise associated with trucks and vehicles accessing the commercial operations.

Visual Resources. Existing views of the ocean, coastline and mountains would be affected by views of the commercial buildings and site improvements with the Commercial Village Alternative. Depending upon the building siting and food truck court arrangement, the public view of the property would reveal multiple single-story buildings and supporting facilities with up to 10 food trucks and seating areas. The sprawling layout would limit opportunities to create a gathering space and provide for landscaping, buffers, and setbacks.

5.5 COMMERCIAL SHOPPING CENTER ALTERNATIVE

The City and County of Honolulu classif~~y~~ies commercial developments in excess of 40,000 square feet (SF) as shopping centers. The Commercial Shopping Center Alternative would propose development of the three parcels (2.7 acres) at shopping center scale, as allowed per the B-1 Neighborhood Business zoning district. The existing B-1 zoning would allow for 1.0 FAR (Floor Area Ratio), which would equate to commercial buildings with over 100,000 SF floor area. The calculated maximum commercial floor area for this property under existing B-1 zoning would be 117,443 SF. This floor area would be roughly five times the commercial floor area of the adjoining Foodland Pūpūkea store.

In 2004, a development proposal for the subject properties contemplated a commercial shopping center project with a floor area of approximately 75,000 SF. The 2004 project proposed a two- to three- stories with a height of 35 feet, and access to Kamehameha Highway solely from driveways along Pāhoe Road. A large basement parking garage was proposed for 249 parking spaces. The 2004 shopping center project sought to capitalize on the large site development potential, with a Floor Area Ratio of 0.65 FAR. The 2004 shopping center proposal included several food and beverage components with anticipated water demand of 92,000 gpd. Of note, the 2004 shopping center also projected a wastewater volume of more than 73,000 gpd, proposed to be handled by underground injection. Generated traffic estimates were significant at 256 vehicle trips during the Saturday peak hour.

Clear community opposition to the 2004 proposal requires a smaller shopping center be contemplated. This EIS alternative considers development of approximately 46,000 SF commercial floor area, with a range of food and beverage, retail, and service businesses. The larger Hanapohaku properties could easily support an FAR denser than the existing commercial floor area of the Foodland store at .294 FAR. With 46,000 SF floor area and 117,443 SF property, this alternative proposes an FAR of 0.392, which is approximat~~ley~~ely 40 percent of the allowable LUO density. To

serve the Shopping Center alternative, there would need to be access driveways connecting off both Kamehameha Highway and Pāhoe Road, with partial basement parking.

The potential impacts of the Commercial Shopping Center Alternative are evaluated in the following discussion for the anticipated future conditions in the various EIS impact assessment categories.

Soils. Soils disturbance would be substantial under the Shopping Center alternative. The entire property would be graded with excavation for utilities and building foundations. The development would require compliance with rules for erosion protection and low impact development.

Flora/Fauna. Flora and fauna disturbance would be temporary during construction. The site coverage from shopping center buildings and parking area would limit opportunities to create beneficial landscape enhancements, with new habitat for common introduced bird species.

Water Use. Water use for potable demand by the Shopping Center alternative would require service for several food and beverage tenants, projected at 56,200 gpd with landscape irrigation.

Wastewater. Wastewater generation by the Shopping Center alternative would be projected at 48,000 gpd, which would require disposal through a groundwater injection well disposal system.

Drainage/Storm water. Drainage conditions and storm water management would be required to meet City standards. With the Shopping Center alternative, there would be large impervious surfaces of roof area and parking area over 80,000 SF, requiring sizable on-site runoff management. Compliance with low impact development rules necessitate on-site storm water storage prior to off-site release.

Traffic & Transportation. Traffic conditions with the Shopping Center would generate approximately 157 vehicle trips during the Saturday peak hour, with access via Kamehameha Highway and Pāhoe Road. Bicycle and pedestrian circulation would improve with a sidewalk and highway crosswalk.

Economics/Fiscal. Revenues associated with the Shopping Center alternative would be substantially increased. There would be an expansion of business establishments, employment or government revenues. The estimated total employment would be ~~86~~ 138 full time equivalent jobs among the various tenants. The Real Property Tax due to the City and County of Honolulu would be about $148,600 annually.

Land Use/Zoning. The Shopping Center use of the property would be consistent with the commercial zoning. There would be some community gathering area at the Shopping Center, however, the large scale of center development could limit the open space/public areas and landscape setting. However, the No Action alternative would not be consistent with all the policies and objectives of the North Shore SCP. Improvements made at the site would help provide goods and services to the surrounding community. However, the scale of the Shopping Center improvements and its business and tenant composition would be slanted more heavily toward offerings which cater to visitors to the area. There would also be a greater percentage of mainland business franchises in the Shopping Center.

Archaeological and Cultural Resources. The use of the property under the Shopping Center alternative would have no adverse effect on archaeological resources. The large scale of center development could limit the open space/public areas and landscape setting for cultural education and activities.

Groundwater. There would be impacts to groundwater resources at the property with the Shopping Center commercial operations. The injection well disposal system from the 48,000 gpd would be the injected into the groundwater below the property. The injection disposal of wastewater effluent would mix into the subsurface ~~aquifer~~ groundwater, which ultimately discharges into the nearshore ocean waters.

Surface Water/Storm Water Runoff Quality. Storm water management controls on the property would be installed to minimize the release of suspended sediment and urban runoff contaminants. With the Shopping Center alternative, there would be a larger volume of storm water generated onsite due to the increased amount of impervious surface area. Without effective onsite measures to minimize inputs, there may be greater amounts of contaminants in the runoff water reaching the ocean.

Marine Environment. Storm water management controls on the property would minimize the release of suspended sediment and urban runoff contaminants. However, the contributions of nutrients in groundwater resulting from injection disposal of 48,000 gpd of wastewater would raise an increased potential for adverse effects to the nearshore ocean water quality and marine environment.

Noise and Air Quality. Construction phase noise and dust generation would represent short term adverse effects under this alternative. Once operational, the Shopping Center alternative would have noise associated with trucks and vehicles accessing the commercial operations. There would also be vehicle emissions associated with the trucks and vehicles accessing the site.

Visual Resources. Existing views of the ocean, coastline and mountains would be affected by views of the commercial buildings and site improvements with the Shopping Center alternative. Depending upon the building design and parking strategy, the two-story buildings could extend to heights of 35 to 40 ft. With the scale of the Shopping Center commercial buildings and supporting facilities, there would be limited opportunities for creating large open space, landscaping, buffers, and setbacks.

5.6 ALTERNATIVE DEVELOPMENT TIMETABLE (DEFERRAL)

This alternative considers the deferral of the project to a later date. The NS Sustainable Communities Plan did not specify timing for development of a Rural Commercial Community Center. However, the land has been zoned for commercial use since the 1970s. Over time, the demand for commercial goods and services by the residents of Sunset Beach/Pūpūkea community and its visitors has grown substantially. A delay or deferral of the project development would not immediately meet the objectives and criteria for the creation of a rural center for local businesses and community gathering.

The Sunset Beach/Pūpūkea community has expressed that some existing commercial operations at the property are less desirable, such as the disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, haphazard vehicle ingress/egress, and non-focused pedestrian access. With the City's approval of SMA/2017-21 there is authorization to continue with a conditional use of the property, with very specific actions required of the owners to manage activities to minimize effects to neighbors, the community and the environment. Importantly, it remains the stated purpose of the owners to diligently plan towards the long-term objective of creating the Rural Community Commercial Center, as they seek to achieve the common objectives of the community and government planning policy for future use of this property.

In terms of environmental effects, should the project deferral to a later date, it would extend the existing conditions at the property. Potential impacts would essentially be similar to those described

for the No-Action Alternative, as presented in Section 5.3. Environmental and economic benefits associated with the completion of the Rural Community Commercial Center would not be realized until its development is completed at some point in the future. In the interim, the local and regional traffic conditions are expected to remain challenging. As a result, the community residents would continue to travel a significant distance to accessing many goods and services.

With the current owners, who are a local family that has lived on the North Shore for many decades, the intention is to actively move forward with completion of the Rural Community Commercial Center. Should the project timing be deferred to a later date, there would always be the potential for a change in ownership to another entity, possibly an offshore owner group with different business perspectives and site development objectives. Another owner's approach to the property may not be similar to the current plan for a low intensity development scale (25 percent FAR) and compatible style/character, in keeping with the North Shore SCP.

5.7 SUMMARY COMPARISON OF ALTERNATIVES

This section provides summary comparison evaluation of the potential impacts associated with the proposed action and each of the alternatives.

Tables 5-1 and 5-2 provide a comparison of the Proposed Action with the three Alternatives in their achievement of the established Project Objectives and Evaluation Criteria, as described in *Section 2.3 Purpose and Need* and summarized in *Section 5.1*. A summary evaluation is presented for each Alternative, along with a rating of Suitable, Partially Suitable, or Not Suitable.

Table 5-3 provides a comparison of the Proposed Action with the three Alternatives in their potential for generating environmental effects, addressed by each resource categories evaluated in Section 3.0.

Table 5-1
Comparison of Alternatives by Project Objectives

Objective1: Creation of a Community Gathering Place.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
SUITABLE Development of the Rural Center will create a large central gathering place for leisure and activities by community & visitors.	**NOT SUITABLE** Retention of current uses under the SMA minor plan would not fulfill this objective.	**PARTIAL** Development of the one-story buildings and support facilities would limit opportunities to create a central gathering place.	**PARTIAL** Development of the large Shopping Center would limit opportunities to create a large central gathering place.	**NOT SUITABLE** Retention of current uses under the SMA minor plan would not fulfill this objective. The potential future project plans are unknown.

Objective 2: Sensitivity to the Environment and Sustainability.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
SUITABLE Development based on Sustainable Design and Environmental goals, including Low Impact Development, On-site Solar Energy, Native Landscape, Water and Waste Controls.	**NOT SUITABLE** Retention of current uses under the SMA minor plan would not fulfill this objective, with limited environmental controls.	**PARTIAL** Development of the Commercial Village could include some Sustainable Design & Environmental goals, with less open space and view impacts, and less water use, wastewater injection disposal, solid waste & vehicle traffic.	**PARTIAL** Development of the large Shopping Center could include some Sustainable Design & Environmental goals, with less open space and greater impacts such as water use, wastewater injection disposal, solid waste & vehicle traffic.	**NOT SUITABLE** Retention of current uses under the SMA minor plan would not fulfill this objective, with limited environmental controls. The potential future project plans are unknown.

Objective 3: Setting for Local Hawai'i Businesses to Thrive.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
SUITABLE Development of the Rural Center would provide a place of business for local Hawai'i entrepreneurs and local resident jobs.	**PARTIAL** Retention of current uses on the site would provide limited ongoing use for local Hawai'i businesses and local resident jobs.	**SUITABLE** This Alternative would provide a business place for local Hawai'i entrepreneurs and local resident jobs.	**SUITABLE** This Alternative would provide a business place for both local Hawai'i companies and national tenants, with greater scale of resident jobs.	**PARTIAL** Retention of current uses on the site would provide limited ongoing use for local Hawai'i businesses and local resident jobs. Deferred to future.

Objective 4: Honoring Hawaiian Culture and the North Shore Lifestyle.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
SUITABLE Development of the Rural Center would integrate Culture & Lifestyle themes in landscape, buildings & programs.	**NOT SUITABLE** There would be limited opportunities to integrate Culture & Lifestyle themes in landscape, buildings & programs.	**PARTIAL** Development of the Commercial Village would integrate Culture & Lifestyle themes in landscape, buildings & programs. The single-story buildings limit open space.	**PARTIAL** Development of the ~~Rural Center~~ Shopping Center would integrate Culture & Lifestyle themes in landscape, buildings & programs. The large scale of facility would detract from this.	**NOT SUITABLE** There would be limited opportunities to integrate Culture & Lifestyle themes in landscape, buildings & programs. Possible future project to be determined.

Table 5-2
Comparison of Alternatives by Evaluation Criteria

1. Fulfill Policies and Guidelines established for the Rural Center in NSSCP.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
SUITABLE Development of the Rural Center would fulfill the policies and objectives of the NSSCP.	**NOT SUITABLE** Retention of current uses on the site would not fulfill the policies and objectives of the NSSCP.	**PARTIAL** The Alternative would fulfill the policies and objectives of the NSSCP. Facility scale may not meet the needs of the community & visitors.	**PARTIAL** The Alternative would fulfill the policies and objectives of the NSSCP. Facility scale would exceed needs of the community & visitors.	**NOT SUITABLE** Deferring development of the Rural Center would retain the current uses, and defer fulfilling the policies and objectives of the NSSCP to the future.

2. Design of site and facilities meets environmental standards, strives to achieve sustainable design and operations standards.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
SUITABLE Development of the Rural Center would be designed and operate consistent with sustainable design principals~~als~~les.	**NOT SUITABLE** Retention of current uses on the site would not be designed and operated to achieve sustainable design principals.	**PARTIAL** The Alternative would be designed and operate consistent with sustainable design principles, possibly at a smaller scale than required.	**PARTIAL** The Alternative would be designed and operate consistent with sustainable design principals~~als~~les, at a larger scale than required.	**NOT SUITABLE** Retention of current uses would not achieve sustainable design principals, which would be deferred to the future redevelopment.

3. Provide space for local Hawai‘i entrepreneurs and enterprises to conduct business, and provide employment opportunities for North Shore residents.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
SUITABLE Development of the Rural Center would provide a place of business for local Hawai‘i entrepreneurs and local resident jobs.	**PARTIAL** Retention of current uses on the site would provide limited ongoing use for local Hawai‘i businesses and local resident jobs.	**SUITABLE** This Alternative would provide a business place for local Hawai‘i entrepreneurs and local resident jobs.	**SUITABLE** This Alternative would provide a business place for both local Hawai‘i companies and national tenants, with greater scale of resident jobs.	**PARTIAL** Retention of current uses on the site would provide limited ongoing use for local Hawai‘i businesses and local resident jobs. Deferred to future.

4. Hawaiian Culture and North Shore Lifestyle themes and elements are integrated in the places, buildings, landscape and center programming.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
SUITABLE Development of the Rural Center would integrate Culture & Lifestyle themes in landscape, buildings & programs.	**NOT SUITABLE** There would be limited opportunities to integrate Culture & Lifestyle themes in landscape, buildings & programs.	**PARTIAL** Development of the Rural Center would integrate Culture & Lifestyle themes in landscape, buildings & programs. The limited open space area would detract from this.	**PARTIAL** Development of the Rural Center would integrate Culture & Lifestyle themes in landscape, buildings & programs. The large scale of facility would detract from this.	**NOT SUITABLE** There would be limited opportunities to integrate Culture & Lifestyle themes in landscape, buildings & programs. Possible future project could achieve this.

Table 5-3 Comparison of Alternatives by Environmental Impact Category

Table 5-3 provides a comparison of the Proposed Action with the three Alternatives in their potential for generating environmental effects, addressed by each resource categories evaluated in Section 3.0. Potential project effects in the categories of Climate and Rainfall, and Natural Hazards are comparable for the proposed action and alternatives, and therefore not presented below.

1. Topography, Geology and Soils.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
Grading and excavation will adjust topography and soils. LID/Erosion control through BMPs and NPDES.	There would be no changes to topo/soils beyond the existing conditions (completed under SMAm Plan).	Project grading and excavation would adjust topography and soils. Requirements for LID/Erosion control through BMPs & NPDES.	Larger project grading and excavation would adjust topography and soils. Requirements for LID/Erosion control through BMPs & NPDES.	There would be no changes to topo/soils beyond the existing conditions (completed under SMAm Plan). Future project TBD.

2. Natural Hazards.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
Grading and excavation will adjust topography and soils. LID/Erosion control through BMPs and NPDES.	There would be no changes to topo/soils beyond the existing conditions (as completed under SMAm Plan).	Project grading and excavation would adjust topography and soils. Requirements for LID/Erosion control through BMPs & NPDES.	Larger project grading and excavation would adjust topography and soils. Requirements for LID/Erosion control through BMPs & NPDES.	There would be no changes to topo/soils beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

3. Terrestrial Flora and Fauna.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
Short term construction disturbance of non-native flora/fauna, with long term beneficial effects with project open space and landscaped area.	There would be no effects to non-native flora/fauna beyond the existing conditions (as completed under SMAm Plan).	Commercial Village would have short term construction disturbance of non-native flora/fauna, and provide less open space & new landscape.	Shopping Center would have short term construction disturbance of non-native flora/fauna, and provide less open space & new landscape.	There would be no effects to non-native flora/fauna beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

4. Groundwater and Surface Water.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
Potable water use estimated at ~~8,500~~ 8,160 gpd. Aerobic wastewater treatment disposal est. 7,320 gpd. LID and BMPs to manage storm water quality with open space infiltration.	There would be no additional effects to groundwater and surface water beyond the existing conditions (as completed under SMAm Plan).	Commercial Village would have slightly less potable water est. 5,120 to 5,600 gpd, and wastewater ground disposal est. 5,500 to 5,800 gpd. LID and BMPs to manage similar storm water quantity, and less open space.	Shopping Center would have 5x more potable water est. 56,000 gpd, and 5x wastewater injection disposal est. 48,000 gpd BMPs to manage greater storm water quantity, and less open space.	There would be no additional effects to groundwater and surface water beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

5. Marine Environment.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
The Proposed Action will have LID and BMPs to manage storm water quality with open space infiltration. On-site disposal of wastewater will not adversely affect ocean water quality and marine environment.	There would be no additional effects to ocean water and marine environment beyond the existing conditions (as completed under SMAm Plan).	Project would manage storm water quality with open space infiltration. On-site disposal of wastewater will not adversely affect ocean water quality & marine environment.	Larger project would have 5x volume of wastewater (injection well disposal) est. 48,000 gpd, w/ greater potential for adverse effects. There would be greater storm water quantity, and runoff volume.	There would be no additional effects to ocean water and marine environment beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

6. Archaeology and Cultural Resources.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
The Proposed Action will have no adverse effects to archaeological, historic and cultural resources. Project will integrate Culture & Lifestyle themes in landscape, buildings & programs.	There would be no additional effects to archaeological, historic and cultural resources beyond the existing conditions (as completed under SMAm Plan).	Commercial Village would have no adverse effects to archaeological, historic and cultural resources. Project could integrate Culture & Lifestyle themes into landscape, buildings & programs.	The Shopping Center would have no adverse effects to archaeological, historic and cultural resources. Larger project could integrate Culture & Lifestyle themes into landscape, buildings & programs.	There would be no additional effects to archaeological, historic and cultural resources beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

7. Demographic and Economic Conditions.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
The Proposed Action will have substantial beneficial effects to increase local business and new employment, with net beneficial effects to State/County govt. tax revenues.	There would be no additional effects to demographics and economic conditions beyond the existing conditions (as completed under SMAm Plan).	Commercial Village would have less beneficial effects to increase business and new employment, , and net lower beneficial effects to State/County govt. tax revenues.	The Shopping Center would have greater beneficial effects to increase business and new employment, adding mainland tenants, and net greater beneficial effects to State/County govt. tax revenues.	There would be no additional effects to demographics and economic conditions beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

8. Public Services.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
The Proposed Action will have new demands for public services, including fire suppression, emergency medical, and police services. Private collection of solid waste.	There would be no additional effects to public services (fire, EMS, police) and solid waste beyond the existing conditions (as completed under SMAm Plan).	Commercial Village would have similar new demands for public services, including fire suppression, emergency medical, and police services. Private collection of solid waste.	The Shopping Center would have greater new demands for public services, including fire suppression, emergency medical, and police services. Private collection of solid waste.	There would be no additional effects to public services (fire, EMS, police) and solid waste beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

9. Traffic.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
Single project entrance with no Pāhoe Rd access. Short term construction traffic impacts of limited duration. Operations would generate est. 98 vehicle trips (Saturday peak). Highway left-turn lane, possible crosswalk bike/ped path.	There would be no additional vehicle traffic beyond the existing conditions (as completed under SMAm Plan).	Commercial Village with entrance to Highway. Short term construction traffic impacts of limited duration. Operations would generate slightly less traffic, est. 80 vehicle trips (Saturday peak). Highway left-turn lane, possible crosswalk bike/ped path.	Shopping Center with 2 entrances on Pāhoe Rd and Highway. Short term construction traffic impacts of limited duration. Operations would generate est. 157 vehicle trips (Saturday peak). Highway left-turn lane, possible crosswalk bike/ped path.	There would be no additional vehicle traffic beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

10. Air Quality & Noise.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
Construction dust, vehicle emissions and noise will be short term duration. Operations will generate vehicle emissions and facility use noise.	There would be no additional effects to air quality and noise beyond the existing conditions (as completed under SMAm Plan).	Commercial Village would have construction dust, vehicle emissions and noise for short term duration. Operation with slightly less vehicle emissions and facility use noise.	Shopping Center would have construction dust, vehicle emissions and noise for short term duration. Operation of the shopping center with more vehicle emissions and facility use noise.	There would be no additional effects to air quality and noise beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

11. Infrastructure and Utilities.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
Public infrastructure and utilities will not be adversely affected, with on-site management of drainage, water supply, and wastewater. Single access off Highway with center turn lane striping.	There would be no additional effects to public infrastructure and utilities beyond the existing conditions (as completed under SMAm Plan).	Commercial Village would have similar demand for public infrastructure and utilities, with on-site management of drainage, water supply, and wastewater. Access off Hwy. with center turn lane striping.	Shopping Center would have greater demand for public infrastructure and utilities, with on-site management of drainage, water supply, and wastewater. Access off Pāhoe Rd and Hwy. with center turn lane striping.	There would be no additional effects to public infrastructure and utilities beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

12. Visual Environment.

Proposed Action	No Action Alternative	Commercial Village Alternative	Shopping Center Alternative	Deferred Action Alternative
The Proposed Action will have beautiful buildings, landscape and a large central gathering place. Scenic views of the ocean and mountains will not be diminished.	There would be no additional effects to scenic views beyond the existing conditions (as completed under SMAm Plan).	Commercial Village would have less development, with 1-story buildings but less open space and public area. Scenic views along the highway will be of multiple single-story buildings with up to 10 food trucks and seating areas.	Shopping Center would have nearly twice the development, with larger buildings and less open space. Scenic views of the ocean and mountains will not be diminished.	There would be no additional effects to scenic views beyond the existing conditions (as completed under SMAm Plan). Future project TBD.

Conclusion of Alternatives Comparison

The comparison of the proposed action with ~~three~~ four alternative scenarios shows the relative benefits and adverse effects. The No-Action Alternative would result in ongoing adverse effects with few benefits and fail to provide the rural community commercial center envisioned by the NS SCP. The Commercial Village Alternative would have less developed floor area with single-story buildings, utilize less potable water and providing for less wastewater disposal. The alternative would also offer fewer retail and service options and limited gathering space. Buildings and food trucks would front the highway with limited landscaped area. In comparison to the proposed action, the Shopping Center Alternative would create much greater adverse environmental effects with some increased benefits. The Deferred Action Alternative would essentially extend the No Action Alternative indefinitely, resulting in a similar set of comparative benefits and drawbacks, awaiting the future development of the Rural Community Commercial Center.

6.0

AGENCIES AND PARTIES CONSULTED

6.0 AGENCIES AND PARTIES CONSULTED

This document was prepared as required under Revised Ordinances of Honolulu Chapter 25 for development in the Special Management Area (SMA), and in accordance with Hawai'i Revised Statutes Chapter 343 and Hawai'i Administrative Rules Chapter §11-200 (Environmental Impact Statement Rules). Initial consultation for the Pūpūkea Rural Community Commercial Center began with the City and County of Honolulu Department of Planning and Permitting, the County agency with jurisdiction for the SMA.

Outreach to community groups in the Pūpūkea area included three meetings held with the Sunset Beach Community Association (SBCA), at their regular meetings held in May 2017, July 2017, Sept 2017; numerous interactions with representatives of the citizens' group Mālama Pūpūkea-Waimea; discussions with residents of Pāhoe Road; ongoing status meetings with tenants and employees currently leasing from Hanapohaku; and coordination with Foodland. A presentation ~~will be~~ was made to the North Shore Neighborhood Board No. 27 ~~once the~~ on November 28, 2017 following publication of the Draft EIS ~~is published~~.

Notification that an EIS was to be prepared, known as an EIS Preparation Notice (EISPN), was published in the Office of Environmental Quality Control's (OEQC) *The Environmental Notice* on April 23, 2017 to solicit input on topics of interest. *Table 6-1* identifies those agencies, organizations, and individuals that were formally consulted, received a presentation, provided input on project design or are part of an ongoing consultation effort throughout the environmental review process. Comments received during the 30-day EISPN public response period are listed, whether via letter, email, or received during a community meeting. The comments, along with the response provided, are reproduced in this chapter. Availability of the Draft EIS (DEIS) ~~will be~~ was provided to those listed ~~in conjunction~~ with the publication of the Draft EIS in *The Environmental Notice*. Publication initiated~~s~~ a 45-day public comment period that ended January 8, 2018. Comments to the DEIS, along with the response provided, are reproduced here.

Table 6-1 Agencies and Parties Consulted

Respondents and Distribution	Sent EISPN	EISPN Comments Received	DEIS Notification Sent	DEIS Comments Received
A. Federal Agencies				
U.S. Department of the Interior Fish and Wildlife Service			X	X
U.S. Department of the Interior Geological Survey, Pacific Islands Water Science Center			X	
Department of Commerce National Marine Fisheries Service			X	
Department of the Interior National Parks Service			X	
Department of Agriculture National Resources Conservation Service			X	
Department of Transportation, Federal Aviation Administration			X	
Department of Transportation Federal Transit Administration			X	
Department of Homeland Security Coast Guard			X	

Continued on next page

Respondents and Distribution	Sent EISPN	EISPN Comments Received	DEIS Notification Sent	DEIS Comments Received
B. State of Hawai'i Agencies				
Department of Accounting and General Services	X	X	X	X
Department of Agriculture	X		X	
Department of Business, Economic Development & Tourism (DBEDT)	X		X	
DBEDT, Office of Planning	X	X	X	X
DBEDT, Research Division Library			X	
DBEDT, Strategic Industries Division			X	
Department of Defense	X	X	X	
Department of Education	X		X	X
Department of Hawaiian Home Lands	X		X	
Department of Health (DOH)	X		X	
DOH, Environmental Planning Office	X	X	X	X
DOH, Indoor Radiological Health Branch	X	X	X	
DOH, Wastewater Branch				X
Department of Land and Natural Resources (DLNR)	X		X	
DLNR, Commission on Water Resource Management	X		X	
DLNR, Division of Aquatic Resources			X	X
DLNR, Division of Forestry and Wildlife	X	X	X	
DLNR, Engineering Division	X	X	X	X
DLNR, Historic Preservation Division	X		X	
DLNR, Land Division, O'ahu District	X	X	X	X
DLNR, Office of Conservation and Coastal Lands	X	X	X	
DLNR, Division of State Parks	X	X	X	
Department of Transportation (DOT)	X	X	X	
DOT, Highways Division	X		X	X
Office of Environmental Quality Control	X	X	X	
Office of Hawaiian Affairs	X		X	
University of Hawai'i, Environmental Center / Water Resources Research Center	X		X	X

Continued on next page

Respondents and Distribution	Sent EISPN	EISPN Comments Received	DEIS Notification Sent	DEIS Comments Received
C. City and County of Honolulu Agencies				
Board of Water Supply			X	X
Department of Design and Construction, Facilities Division			X	X
Department of Environmental Services			X	
Department of Facility Maintenance			X	X
Department of Parks and Recreation	X	X	X	X
Department of Planning and Permitting	X	X	X	X
Department of Transportation Services	X	X	X	X
Honolulu Fire Department	X	X	X	
Honolulu Police Department	X	X	X	X
D. Elected Officials				
U.S. Senator Brian Schatz			X	
U.S. Senator Mazie Hirono			X	
U.S. Congresswoman Tulsi Gabbard			X	
State Senator Gil Riviere, District 23	X	X	X	X
State House Representative Sean Quinlan, District 47	X		X	
Council District Representative Ernest Martin, District 2	X		X	
E. Media				
Honolulu Star Advertiser	X		X	
North Shore News	X			
F. Libraries				
Legislative Reference Bureau	X		X	
State Main Library	X		X	
Waialua Public Library	X		X	
G. Community Interest Groups and Organizations				
Mālāma Pūpūkea-Waimea	X	X	X	X
North Shore Chamber of Commerce	X		X	
North Shore Neighborhood Board, No. 27	X	X	X	X
Save Sunset Beach Coalition		X	X	X
Sunset Beach Community Association	X		X	

Continued on next page

Respondents and Distribution	Sent EISPN	EISPN Comments Received	DEIS Notification Sent	DEIS Comments Received
H. Private Entities				
Foodland Super Market c/o Sullivan Family of Companies	X		X	X
Neighboring Property Owners (Pāhoe Road Residents)	X	X	X	X
I. Individuals				
Alessandra Bezzi		X	X	
Angela Huntemer				X
Becky Faunce				X
Bernard Rzeplinski				X
Blake D. McElheny				X
Bob Leinau				X
Candes Meijide Gentry				X
Chip Hartman		X	X	X
Chris and Dawn Bruns				X
Chris Eldridge				X
Chula Harrison				X
Danielle (Hannig) Fullmer		X	X	
Dean Hamer		X	X	X
Devon Daily		X	X	X
Elen Atlas		X	X	
Garrett McNamara				X
Jerry Lynch				X
Joe Wilson		X	X	X
Jon Whittington				X
Larry McElheny		X	X	X
Liam Mcnamara				X
Maia Rosen				X
Mari Zane-Hartman				X
Marina Zannino				X
Matthew Pugliese				X
Megan Bark				X
Meleana Judd-Cox and Alex Cox				X

Continued on next page

Respondents and Distribution	Sent EISPN	EISPN Comments Received	DEIS Notification Sent	DEIS Comments Received
J. Individuals (Continued)				
Michael Lyons				X
Michael Yani				X
Nancy Salemi		X	X	
Phyllis Shipman		X	X	
Richard & Nancy Lam				X
Robert Justice				X
Shannon Yates				X
Terrence Sing				X
Thomas Heck				X
Warner Wacha		X	X	

2017 EIS Preparation Notice Comments and Response Letters

STATE OF HAWAIʻI AGENCIES

DAVID Y. IGE
GOVERNOR

RODERICK K. BECKER
Comptroller

AUDREY HIDANO
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

(P)1187.7

MAY - 2 2017

Mr. Jeff Overton, AICP
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 97813

Dear Mr. Jeff Overton:

Subject: Pupukea Rural Community Commercial Center
TMK: (1) 5-9-022:068, 069, 070, 016

Thank you for the opportunity to comment on the subject project. Based on the information provided, we have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, your staff may call Mr. Kimo Marion of the Planning Branch at 586-0491.

Sincerely,

KEITH S. KOGACHI
Acting Public Works Administrator

KM:mo

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Keith S. Kogachi
State of Hawai'i
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810-0119

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Kogachi:

Thank you for your comment letter dated May 2, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH).

We note that the Department of Accounting and General Services has no comments to offer at this time.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

OFFICE OF PLANNING
STATE OF HAWAII

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

Telephone: (808) 587-284
Fax: (808) 587-282
Web: http://planning.hawaii.go

Ref. No. P-15597

May 10, 2017

Mr. Jeff Overton, AICP, LEED, AP
Principal
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Overton:

Subject: Environmental Impact Statement Preparation Notice – Pupukea Rural Community Commercial Center, Haleiwa, Oahu, Hawaii
TMK: (1) 5-9-011: 068, 069, 070, and 016

Thank you for the opportunity to provide comments on this Environmental Impact Statement Preparation Notice (EISPN) for the Pupukea Rural Community Commercial Center, located in Haleiwa, Island of Oahu. The EISPN request review material was transmitted to our office via letter dated April 21, 2017.

It is our understanding that this project seeks to redevelop a rural community-based commercial center to provide goods and services to residents and visitors of Oahu's North Shore area. The property currently is occupied with a single grocery store retailer (Foodland). Only minor improvements are anticipated to the Foodland portion of the shopping complex. These improvements include landscaping and parking lot improvements. New infrastructure will be built to support the proposed expansion of the commercial center. The proposed commercial center improvements include new driveways, solar panel canopies built within a parking area, drainage, water supply infrastructure, and wastewater treatment facilities. The planned floor area of the proposed structures will be approximately 30,000 square feet gross floor area.

The project will support the North Shore Community Plan for Community Commercial Centers by providing diverse commercial services, maintaining open space, limiting building heights, and will utilize landscaping to maintain a rural area appeal.

The Office of Planning (OP) has reviewed the transmitted material and has the following comments to offer:

1. The applicant should consult with the Department of Planning and Permitting (DPP), City and County of Honolulu, the approving agency, to confirm whether an Environmental Impact Statement (EIS) is required for the proposed Pupukea Rural

Community Commercial Center. According to your pre-consultation request, an EIS rather than an Environmental Assessment will be prepared for the proposed project.

2. Section 2.3, Table 1, page 12 of the EISPN acknowledges that this project site is located within the Special Management Area (SMA) of the City and County of Honolulu. Please contact DPP on the regulatory requirements on SMA use.

3. Section 3.3, page 13 of the EISPN lists the goals, objectives, policies, State Functional Plans, and priority guidelines found of the Hawaii State Planning Act as applicable to this project.

   Pursuant to Hawaii Administrative Rules (HAR) § 11-200-17(h) – relationship of the proposed action to land use plans, policies, and controls for the affected area; this project must demonstrate that it is consistent with state environmental, social, and economic goals and land-use policies. Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Planning Act, provides goals, objectives, policies, and priority guidelines for growth, development, and the allocation of resources throughout the state in areas of state interest.

   The Draft Environmental Impact Statement (DEIS) should contain an analysis on the Hawaii State Planning Act to include a discussion on the project's ability to meet all of the goals, objectives, policies, and priority guidelines or clarify where it is in conflict with them. If any of these themes are not applicable to the project, the analysis should affirmatively state such determination, followed by discussion paragraphs.

3. Section 3.3, page 13 of the EISPN lists the Hawaii Coastal Zone Management (CZM) Program as a land use plan, policy and control that is applicable to this project.

   The CZM area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" (see HRS § 205A-1).

   HRS Chapter 205A-5(b) requires all state and county agencies to enforce the CZM objectives and policies. The DEIS should include an assessment as to how the proposed action conforms to the goals and objectives of the Hawaii CZM program as listed in HRS § 205A-2. Compliance with HRS § 205A-2 is an important component for satisfying the requirements of HRS Chapter 343.

4. Pursuant to HAR § 11-200-17(i) – probable impact of the proposed action on the environment, and impacts of the natural and human environment – in order to ensure that the coastal resources along the North Shore of Oahu remain protected, the negative effects of stormwater inundation ensuing from development activities within the park should be evaluated.

   Pursuant to HAR § 11-200-17(m), the DEIS should also consider mitigation measures to safeguard the physical environment including water resources and the nearshore environment from natural and manmade hazards. Mitigation strategies are intended to avoid, minimize, rectify, or reduce threats. Where a mitigation measure has been chosen from among several alternatives, the measures shall be discussed and the reasoning provided.

   The DEIS should summarize the potential impact from construction activities, as well as the cumulative impact of land-based pollutants and soil erosion carried by stormwater runoff on the coastal ecosystem. Issues that should be evaluated include, but are not limited to, land use classification, the expected speed and volume of storm runoff, and the marine water quality classification. All of these factors should be considered when developing mitigation measures for the protection of water resources and the coastal ecosystem.

   The increase of hardened surfaces from the creation of a parking area, new buildings, and support infrastructure at this commercial center may result in increased stormwater flow. The DEIS should include an examination of stormwater mitigation strategies. An effective stormwater runoff control method is the use of low impact development (LID) design features, such as bio-retention basins, native plant rain gardens, grassed swales, and permeable pavers for walkways and parking areas that treat stormwater onsite.

   OP has developed resources available to assist in the development of projects which may assist in the mitigation of sediment loss and stormwater control. We recommend consulting these guidance documents and stormwater evaluative tools when developing strategies to address polluted runoff. They offer useful techniques to keep land-based pollutants and sediment in place and prevent contaminating nearshore waters.

   - Stormwater Impact Assessments can be used to identify and evaluate information on hydrology, stressors, sensitivity of aquatic and riparian resources, and management measures to control runoff, as well as consider secondary and cumulative impacts to the area

   http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater impact/final_stormwater_impact_assessments_guidance.pdf

   - Low Impact Development (LID), A Practitioners Guide covers a range of structural best management practices (BMP's) for stormwater control management and layout that minimizes environmental impacts http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid_guide_2006.pdf

We have no further comments at this time. If you have any questions regarding this comment letter, please contact Joshua Hekekia of our office at (808) 587-2845.

Sincerely,

Leo R. Asuncion
Director

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Leo R. Asuncion
Director
Office of Planning
State of Hawai'i
235 South Beretania Street, 6th Floor
Honolulu, HI 96813

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Asuncion:

Thank you for your comment letter dated May 2, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments.
The City and County of Honolulu Department of Planning and Permitting (DPP) will be the approving agency for the Environmental Impact Statement (EIS). *Table 1-1 Required Reviews and Permits* of the Draft EIS identifies a Special Management Area – Major permit as one of the required permits for the project; we are coordinating closely with DPP on such permit matters.

The Draft EIS presents the relationship of the proposed action to land use plans, policies and control for the project area in Chapter 4.0. An analysis of the Hawaii State Plan is contained in *Table 4.1* of the chapter. *Table 4-3* presents the analysis of the project's conformance with the Coastal Zone Management Program.

Chapter 3.0 of the Draft EIS analyzes numerous natural resources and the project's potential impacts to these resources. *Section 3.6 Surface Water and Drainage*, and *Section 3.16 Infrastructure and Utilities* presents the improved storm water runoff conditions anticipated from the project implementation of long-term low impact development (LID) controls for the site. Storm water management during construction is discussed in *Section 3.2 Geology, Topography and Soils*. We appreciate the resources provided in your letter, and have considered them in development of the project and the environmental disclosure document.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR

ARTHUR J. LOGAN
MAJOR GENERAL
ADJUTANT GENERAL

KENNETH S. HARA
BRIGADIER GENERAL
DEPUTY ADJUTANT GENERAL

STATE OF HAWAII
DEPARTMENT OF DEFENSE
OFFICE OF THE ADJUTANT GENERAL
3949 DIAMOND HEAD ROAD
HONOLULU, HAWAII 96816-4495

May 18, 2017

RECEIVED
MAY 23 2017
G70

Mr. Jeff Overton, AICP, LEED AP
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, HI 96813-4307

Dear Mr. Overton:

Subject: Environmental Impact Statement Preparaton Notice for Pupukea Rural Community Commercial Center, TMK: (1) 5-9-022:068, 069, 070, 016 (Pupukea, Oahu, Hawaii)

Thank you for the opportunity to comment on the above project. The State of Hawaii Department of Defense has no comments to offer relative to the project.

Should you have any questions or concerns, please have your staff contact Ms. Shao Yu Lee, our Land Manager on Oahu, at (808) 733-4250.

Sincerely,

NEAL S. MITSUYOSHI, P.E.
Colonel, Hawaii National Guard
Chief Engineering Officer

c: Mr. David Kennard, Hawaii Emergency Management Agency (HI-EMA)
Ms. Havinne Okamura, HI-EMA
Mr. Albert Chong, HI-EMA

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Neal S. Mitsuyoshi, P.E., Chief Engineering Officer
State of Hawai'i
Department of Defense
3949 Diamond Head Road
Honolulu, HI 96816-4495

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Colonel Mitsuyoshi:

Thank you for your comment letter dated May 18, 2017 concerning the Chapter 25, Revised Ordinances of Honolulu (ROH) Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project.

We acknowledge that the State of Hawai'i Department of Defense has no comments to offer on the project.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:
EPO 17-106

May 16, 2017

Mr. Jeff Overton, AICP LEED AP
G70
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813
Email: pupukea@g70.design

Dear Mr. Overton:

SUBJECT: Environmental Impact Statetment Preparation Notice for Pupukea Rural Community Commercial Center, Pupukea, Haleiwa, Oahu
TMK: (1) 5-0-022:068, 069, 070, 016

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your EISPN to our office via the OEQC link: http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Non-343-EA-EIS-Notices/2017-04-23-OA-Chapter-25-EISPN-Pupukea-Rural-Community-Commercial-Center.pdf

We understand from the OEQC publication form project summary that *"Hanapohaku LLC is proposing to develop a rural community commercial center in Pupukea, Oahu to provide a mix of goods and services to residents and visitors of the community. Three new buildings will be constructed, one to two stories in height, totaling approximately 30,000 square feet. The buildings will be set back from Kamehameha Highway with a park-like green space, walkways, and bicycle parking facing Kamehameha Highway. Mobile food trucks are also proposed. Supporting infrastructure will include driveways, parking with solar panel canopies, drainage, water supply, and wastewater treatment facility."*

In the development and implementation of all projects, EPO strongly recommends regular review of State and Federal environmental health land use guidance. State standard comments and available strategies to support sustainable and healthy design are provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments. EPO has recently updated the environmental Geographic Information System (GIS) website page. It now compiles various maps and viewers from our environmental health programs. The eGIS website page is continually updated so please visit it regularly at: http://health.hawaii.gov/epo/egis

In 2015, Hawaii passed Act 97 which amended Hawaii's Renewable Portfolio Standards by setting a goal for Hawaii to become one hundred percent renewable by the year 2045. To reach this goal Hawaii should transform its transportation sector from the use of fossil fuels to renewable fuel, electric vehicles (EV)s, and public transit systems including bikeshare programs. To address "range anxiety" and facilitate the adoption of EVs, it is essential that EV charging stations be added to any planned parking areas open to the EV driving public. All future plans should strive to encourage the use of personal bicycles though the development of designated bike lanes and class A bike trails. All efforts should be made to reduce harmful vehicle emissions, reduce vehicle miles travelled (VMT's), encourage alternative modes of transport and increase physical activity.

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal at: https://eha-cloud.doh.hawaii.gov. This site provides links to our e-Permitting Portal, Environmental Health Warehouse,

Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings.

We suggest you review the requirements of the Clean Water Branch (Hawaii Administrative Rules {HAR}, Chapter 11-54-1.1, -3, 4-8) and/or the National Pollutant Discharge Elimination System (NPDES) permit (HAR, Chapter 11-55) at: http://health.hawaii.gov/cwb. If you have any questions, please contact the Clean Water Branch (CWB), Engineering Section at (808) 586-4309 or cleanwaterbranch@doh.hawaii.gov. If your project involves waters of the U.S., it is highly recommended that you contact the Army Corps of Engineers, Regulatory Branch at: (808) 835-4303.

Please note that all wastewater plans must conform to applicable provisions (HAR, Chapter 11-62, "Wastewater Systems"). We reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please review online guidance at: http://health.hawaii.gov/wastewater and contact the Planning and Design Section of the Wastewater Branch (WWB) at (808) 586-4294.

Any construction waste generated by the project needs to be disposed of at a solid waste disposal facility that complies with the applicable provisions (HAR, Chapter 11-58.1 "Solid Waste Management Control"). The open burning of any of these wastes, on or off site, is strictly prohibited. Additional information is accessible at: http://health.hawaii.gov/shwb. For specific questions call (808) 586-4226.

If temporary fugitive dust emissions could be emitted when the project site is prepared for construction and/or when construction activities occur, we recommend you review the need and/or requirements for a Clean Air Branch (CAB) permit (HAR, Chapter 11-60.1 "Air Pollution Control"). Effective air pollution control measures need to be provided to prevent or minimize any fugitive dust emissions caused by construction work from affecting the surrounding areas. This includes the off-site roadways used to enter/exit the project. The control measures could include, but are not limited to, the use of water wagons, sprinkler systems, and dust fences. For questions contact the Clean Air Branch via e-mail at: Cab.General@doh.hawaii.gov or call (808) 586-4200.

If noise created during the construction phase of the project may exceed the maximum allowable levels (HAR, Chapter 11-46, "Community Noise Control") then a noise permit may be required and needs to be obtained before the commencement of work. Relevant information is online at: http://health.hawaii.gov/irhb/noise EPO recommends you contact the Indoor and Radiological Health Branch (IRHB) at (808) 586-4700 with any specific questions.

To better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed a new environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: http://www.epa.gov/ejscreen.

We request that you utilize all this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design. Thank you for the opportunity to comment.

Mahalo nui loa,

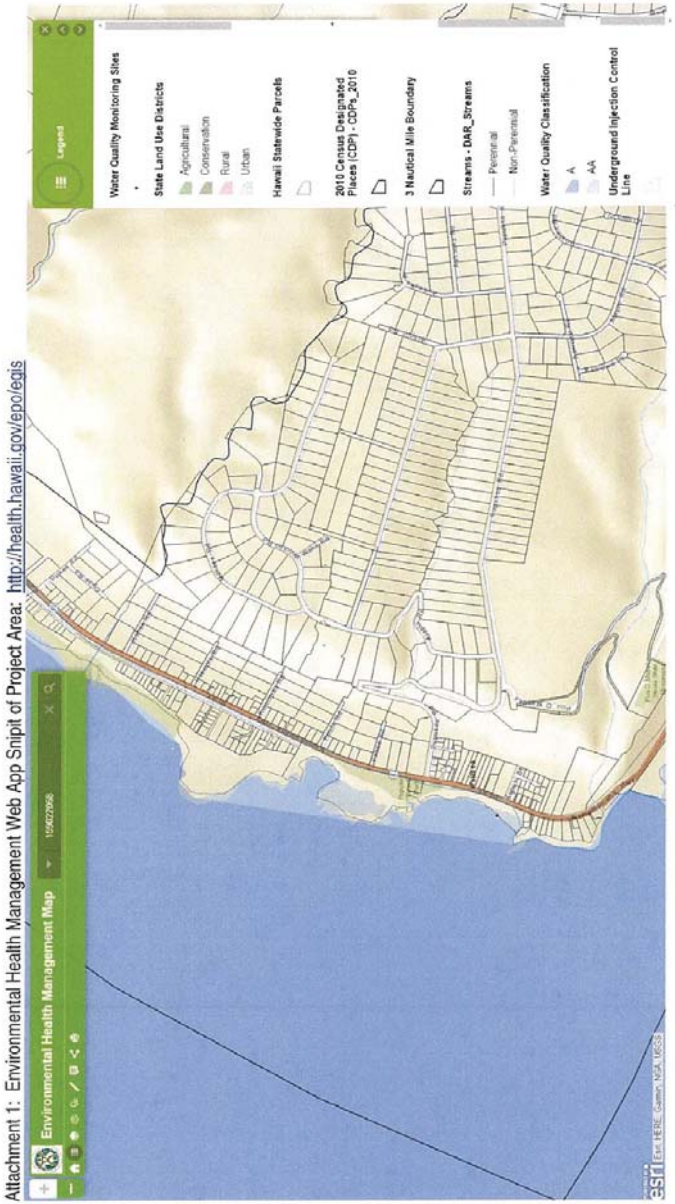
Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

LM:nn

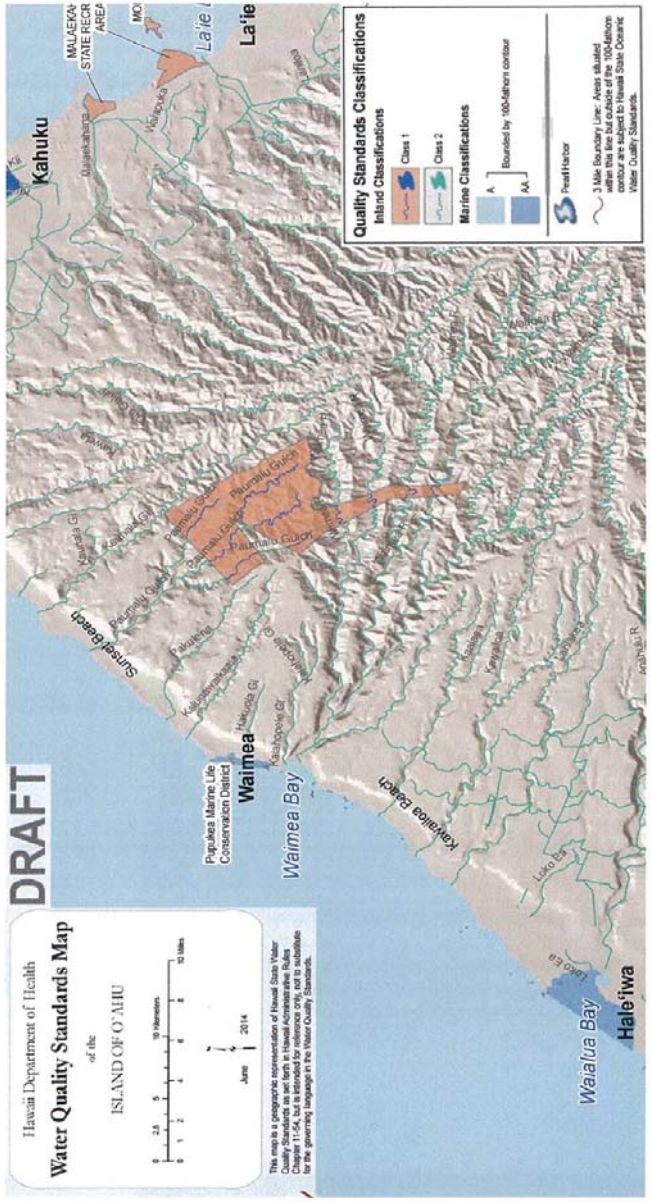
Attachment 1: Environmental Health Management Web App Snipit of Project Area: http://health.hawaii.gov/epo/egis
Attachment 2: Clean Water Branch: Water Quality Standards Map
Attachment 3: U.S. EPA EJSCREEN Report for Project Area

c: Andrew Yani, Hanapohaku LLC (via email: hanapohakullc@gmail.com)
Ardis Shaw-Kim, Dept. of Planning and Permitting (via email: ashaw@honolulu.gov)

Attachment 1: Environmental Health Management Web App Snipit of Project Area: http://health.hawaii.gov/epo/egis



Attachment 2: Clean Water Branch: Water Quality Standards Map


DRAFT
Hawaii Department of Health
Water Quality Standards Map
of the
ISLAND OF O'AHU
June 1 2014
This map is a geographic representation of Hawaii State Water Quality Standards as set forth in Hawaii Administrative Rules Chapter 11-54, but is intended for reference only, not to substitute for the governing language in the Water Quality Standards.
Quality Standards Classifications
Inland Classifications
Class 1
Class 2
Marine Classifications
A
AA
Bounded by 100-fathom contour
Pearl Harbor
3 Mile Boundary Line: Areas situated within this line but outside of the 100-fathom contour are subject to Hawaii State Oceanic Water Quality Standards.
Kahuku
La'ie
Sunset Beach
Waimea
Pupukea Marine Life Conservation District
Waimea Bay
Kawailoa Beach
Waialua Bay
Hale'iwa
Paumalu Gulch
Kaluanui Gulch
Kahuna Gulch
Kawela Gulch
Kaiaka Gulch
Kamananui Gulch
Kaunala Gulch
Kawainui Gulch
Kaiwi Gulch
Kaiwiki Gulch
Kaiwiki Gulch
Kaiwiki

EJSCREEN Report (Version 2016)

1 mile Ring Centered at 21.648439,-158.061930, HAWAII, EPA Region 9

Approximate Population: 1,521

Input Area (sq. miles): 3.14

May 9, 2017

Digitized Point

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0
National Pollutant Discharge Elimination System (NPDES)	0

EJSCREEN Report (Version 2016)

1 mile Ring Centered at 21.648439,-158.061930, HAWAII, EPA Region 9

Approximate Population: 1,521

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	N/A	N/A	9.37	N/A	9.32	N/A
Ozone (ppb)	N/A	N/A	N/A	51	N/A	47.4	N/A
NATA* Diesel PM (µg/m³)	0.00652	0.149	2	0.978	<50th	0.937	<50th
NATA* Cancer Risk (lifetime risk per million)	25	34	9	43	<50th	40	<50th
NATA* Respiratory Hazard Index	0.5	1	9	2	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	150	990	49	1100	41	590	57
Lead Paint Indicator (% Pre-1960 Housing)	0.16	0.16	60	0.24	52	0.3	45
Superfund Proximity (site count/km distance)	0.067	0.098	59	0.15	48	0.13	53
RMP Proximity (facility count/km distance)	0.029	0.19	6	0.57	2	0.43	3
Hazardous Waste Proximity+ (facility count/km distance)	0.029	0.14	0	0.14	10	0.11	14
Water Discharger Proximity (facility count/km distance)	0.037	0.34	9	0.2	8	0.31	5
Demographic Indicators							
Demographic Index	30%	52%	4	47%	27	36%	50
Minority Population	45%	77%	8	58%	36	37%	65
Low Income Population	16%	26%	31	36%	20	35%	21
Linguistically Isolated Population	0%	6%	23	9%	19	5%	44
Population With Less Than High School Education	3%	9%	18	17%	14	14%	15
Population Under 5 years of age	3%	6%	19	7%	21	6%	22
Population over 64 years of age	10%	15%	26	13%	48	14%	37

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

+ The hazardous waste environmental indicator and the corresponding EJ index will appear as N/A if there are no hazardous waste facilities within 50 km of a selected location.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Laura Leialoha Phillips McIntyre, AICP, Program Manager
State of Hawai'i
Department of Health, Environmental Planning Office
P.O. Box 3378
Honolulu, HI 96801-3378

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Phillips McIntyre:

Thank you for your comment letter dated May 17, 2017 concerning the Chapter 25, Revised Ordinances of Honolulu (ROH) Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

1. **State standard comments.** We appreciate the reference you have provided for standard comments to support sustainable and healthy design. We have reviewed the relevant standard comments, particularly those related to water, wastewater. Discussions on relevant comments are included in *Chapter 3.0* of the Draft EIS.

2. **Hawai'i Renewable Portfolio Standards**. The project supports a variety of sustainability initiatives including renewable energy use and reduction of range anxiety for electric vehicles. As described in *Chapter 2.0* and *Section3.16 Infrastructure and Utilities* in the Draft EIS, the Pūpūkea Rural Community Commercial Center will utilize photovoltaic panels to generate electricity 526,000 kilowatt hours annually, approximately one-third of the anticipated electrical demand. An electric vehicle (EV) charging station and dedicated parking will be included in the parking area for EV-driving patrons of the rural center. Bicycle parking will also be included as a part of the project to promote alternative modes of transportation and reduce vehicle emissions on the North Shore.

3. **Hawai'i Environmental Health Portal.** We appreciate the resource you have provided us to access the Hawai'i Environmental Health Portal. Applicable information has been incorporated into the Draft EIS.

4. **Clean Water Branch requirements.** As discussed in *Sections 3.5 and 3.6* of the Draft EIS, the project will comply with the requirements of the Clean Water Branch. A National Pollutant Discharge Elimination System permit for construction will be obtained for the project prior (refer to *Table 1-1 Required Reviews and Permits* in the EIS).

5. **Wastewater provisions under HAR, Chapter 11-62.** As discussed in the Draft EIS under *Section 3.5 Groundwater*, the wastewater treatment system requires approval by the Department of Health Wastewater Branch.

6. **Construction Waste.** Construction waste generated by the project will be disposed of at a solid waste disposal facility in compliance with applicable provisions.

7. **Fugitive Dust Emissions.** Project construction will comply with Clean Air Branch requirements. Specific dust control will be documented in a dust control plan for the project, to prevent fugitive dust from becoming airborne and crossing the property line (EIS *Section 3.14 Air Quality*).

8. **Noise.** A Noise Assessment for the project was conducted for the EIS. Noise minimization and mitigation for both the construction phase, and long-term operations, are documented in the Draft EIS (*Section 3.15 Noise*).

9. **US Environmental Protection Agency EJSCREEN.** We appreciate you providing us with the link to the US Environmental Protection Agency Environmental Justice Mapping and Screening Tool (EJSCREEN). We will review the map for the project area and utilize applicable environmental and demographic information in the Draft EIS.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

RECEIVED
MAY 19 2017
G70

May 17, 2017

Mr. Jeff Overton, AICP LEED AP
G70
925 Bethel Street, 5th Floor
Honolulu, HI 96813

Dear Mr. Overton:

Thank you for your submittal requesting comments to the Environmental Impact Statement for Pupukea Rural Community Commercial Center, Pupukea, Haleiwa, Oahu.

Project activities shall comply with the following Administrative Rules of the Department of Health:

- Chapter 11-46 Community Noise Control
- Chapter 11-501 Asbestos Requirements

Should you have any questions, please contact me at (808) 586-4700.

Sincerely,

Jeffrey M. Eckerd
Program Manager
Indoor and Radiological Health Branch

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Jeffrey M. Eckerd, Program Manager
State of Hawai'i
Department of Health, Indoor and Radiological Health Branch
P.O. Box 3378
Honolulu, HI 96801-3378

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Eckerd:

Thank you for your comment letter dated May 17, 2017 concerning the Chapter 25, Revised Ordinances of Honolulu (ROH) Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project.

The project will comply with Chapter 11-46 and Chapter 11-501 of the Administrative Rules, in relation to Community Noise Control and Asbestos Requirements. A discussion on the information pertaining to noise is included in Section 3.15 of the Draft EIS.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

May 22, 2017

G70 International, Inc.
Attention: Mr. Jeffrey H. Overton
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

via email: jeff@group70int.com

Dear Mr. Overton:

SUBJECT: Environmental Impact Statement Preparation Notice (EISPN) for Pupukea Rural Community Commercial Center

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from the (a) Land Division – Oahu District, (b) Division of State Parks, (c) Engineering Division, (d) Office of Conservation & Coastal Lands, and (e) Division of Forestry & Wildlife on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Russell Y. Tsuji, Land Administrator
State of Hawai'i
Department of Land and Natural Resources, Land Division
P.O. Box 621
Honolulu, HI 96809

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Tsuji:

Thank you for forwarding comments of the Department of Land and Natural Resources Divisions in your cover letter dated May 22, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH).

We appreciate you consolidating comments from the Land Division – O'ahu District, Division of State Parks, Engineering Division, Office of Conservation & Coastal Lands, and Division of Forestry & Wildlife. We will provide responses to each respective office.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 26, 2017

RECEIVED
LAND DIVISION
2017 APR 27 PM 1:33
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
X Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Environmental Impact Statement Preparation Notice (EISPN) for Pupukea Rural Community Commercial Center
LOCATION: Pupukea, Island of Oahu; TMK No. (1) 5-9-011:068, 069, 070 & 016
APPLICANT: Hanapokahu LLC

Transmitted for your review and comment is information on the above-referenced EISPN. We would appreciate your comments on this EISPN. Please submit any comments by **May 19, 2017.**

The EISPN can be found on-line at: http://health.hawaii.gov/oeqc/ (Click on the Current Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
(x) We have no comments.
( ) Comments are attached.

Signed: Darlene Bryant-Takamatsu

Print Name: Darlene Bryant-Takamatsu
Date: 4/27/17

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Darlene Bryant-Takamatsu
State of Hawai'i
Department of Land and Natural Resources, Land Division O'ahu District
P.O. Box 621
Honolulu, HI 96809

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1) 5-9-011:068, 069, 070, 016
Pūpūkea, O'ahu, Hawai'i

Dear Ms. Bryant-Takamatsu:

Thank you for your comment dated May 27, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH).

We acknowledge that the Land Division - O'ahu District has no comments to offer on the project.

We will provide you a copy of the Draft EIS. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC.

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII

RECEIVED
STATE PARKS DIV
'17 APR 27 A11:03
DEPT OF LAND &
NATURAL RESOURCES

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 26, 2017

RECEIVED
LAND DIVISION
2017 MAY -4 AM 11:02
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
X Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Environmental Impact Statement Preparation Notice (EISPN) for Pupukea Rural Community Commercial Center
LOCATION: Pupukea, Island of Oahu; TMK No. (1) 5-9-011:068, 069, 070 & 016
APPLICANT: Hanapokahu LLC

Transmitted for your review and comment is information on the above-referenced EISPN. We would appreciate your comments on this EISPN. Please submit any comments by **May 19, 2017.**

The EISPN can be found on-line at: http://health.hawaii.gov/oeqc/ (Click on the Current Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed: _____

Print Name: CURT COTTRELL
Date: 5.2.17

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Curt Cottrell
State of Hawai'i
Department of Land and Natural Resources, Division of State Parks
P.O. Box 621
Honolulu, HI 96809

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Cottrell:

Thank you for your comment letter dated May 2, 2017 concerning the Chapter 25, Revised Ordinances of Honolulu (ROH) Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project.

We acknowledge that the Division of State Parks has no comments to offer on the project.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

'17 APR 26 AM 11:58 ENGINEERING

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE
MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 26, 2017

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
FROM: X Engineering Division
X Div. of Forestry & Wildlife
X Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Environmental Impact Statement Preparation Notice (EISPN) for Pupukea Rural Community Commercial Center
LOCATION: Pupukea, Island of Oahu; TMK No. (1) 5-9-011:068, 069, 070 & 016
APPLICANT: Hanapokahu LLC

Transmitted for your review and comment is information on the above-referenced EISPN. We would appreciate your comments on this EISPN. Please submit any comments by **May 19, 2017.**

The EISPN can be found on-line at: http://health.hawaii.gov/oeqc/ (Click on the Current Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed: _____

Print Name: Carty S. Chang, Chief Engineer
Date: 5/3/17

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Environmental Impact Statement Preparation Notice (EISPN) for Pupukea Rural Community Commercial Center

COMMENTS

The rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations (44CFR), are in effect when development falls within a designated Flood Hazard.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood Hazard Zone designations can be found using the Flood Insurance Rate Map (FIRM), which can be accessed through the Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT).

Be advised that 44CFR reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may take precedence over the NFIP standards as local designations prove to be more restrictive. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

- Oahu: City and County of Honolulu, Department of Planning and Permitting (808) 768-8098.
- Hawaii Island: County of Hawaii, Department of Public Works (808) 961-8327.
- Maui/Molokai/Lanai County of Maui, Department of Planning (808) 270-7253.
- Kauai: County of Kauai, Department of Public Works (808) 241-4846.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: 5/3/17

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Carty S. Chang, P.E., Chief Engineer
State of Hawai'i
Department of Land and Natural Resources, Engineering Division
P.O. Box 621
Honolulu, HI 96809

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Chang:

Thank you for providing comments to the Department of Land and Natural Resources' (DLNR) Land Division dated May 3, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH).

We acknowledge that the rules and regulations of the National Flood Insurance Program (NFIP), Title 44 of the Code of Federal Regulations, are in effect when development falls within a designated Flood Hazard. The Flood Hazard Zone designation for the project is described in *Section 3.3* of the Draft EIS.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

RECEIVED
OFFICE OF CONSERVATION AND COASTAL LANDS
2017 APR 26 A 11:42

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 26, 2017

MEMORANDUM

RECEIVED
LAND DIVISION
2017 MAY 11 AM 10:25
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
X Div. of State Parks
X Commission on Water Resource Management
X Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Environmental Impact Statement Preparation Notice (EISPN) for Pupukea Rural Community Commercial Center
LOCATION: Pupukea, Island of Oahu; TMK No. (1) 5-9-011:068, 069, 070 & 016
APPLICANT: Hanapokahu LLC

Transmitted for your review and comment is information on the above-referenced EISPN. We would appreciate your comments on this EISPN. Please submit any comments by **May 19, 2017.**

The EISPN can be found on-line at: http://health.hawaii.gov/oeqc/ (Click on the Current Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
(X) We have no comments. Not in Cons. District
( ) Comments are attached.

Signed: Michael Cain
Print Name: Michael Cain, OCCL
Date: 5.09.17

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Michael Cain
State of Hawai'i
Department of Land and Natural Resources, Office of Conservation & Coastal Lands
P.O. Box 621
Honolulu, HI 96809

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Cain:

Thank you for your comment dated May 9, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH).

We acknowledge that the Office of Conservation & Coastal Lands has no comments to offer for the project, as the project is not in the Conservation District.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF FORESTRY AND WILDLIFE
1151 PUNCHBOWL STREET, ROOM 325
HONOLULU, HAWAII 96813

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

KEKOA KALUHIWA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

RECEIVED
LAND DIVISION
2017 MAY 17 AM 7:56
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

May 16, 2017

TO: Russell Y. Tsuji, Administrator
Land Division

ATTN: Lydia Morikawa

FROM: James Cogswell
Wildlife Program Manager

SUBJECT: Division of Forestry and Wildlife Comments on the Environmental Impact Statement Preparation Notice (EISPN) for Pupukea Rural Community Commercial Center.

The Department of Forestry and Wildlife has received your inquiry regarding the proposed Pupukea Rural Community Commercial Center located along Kamehameha Highway, in Pupukea, Oahu, TMK (1) 5-9-011:068, 069, 070, 016. The proposed action involves construction of three new buildings, one to two stories high and approximately 30,000 square feet. Supporting infrastructure includes driveways, parking with solar panel canopies, drainage, water supply, and wastewater treatment facility.

The State and Federally listed Hawaiian hoary bat or 'Ōpe'ape'a (*Lasiurus cinereus semotus*) has the potential to occur in the vicinity of the proposed project. Therefore, DOFAW recommends avoiding using barbed wire, as bat mortalities have been documented as a result of becoming ensnared by barbed wire during flight. Hawaiian hoary bats roost in both exotic and native trees. If any trees are planned for removal during the bat breeding season there is a risk of injury or mortality to juvenile bats. To minimize the potential for impacts to this species, site clearing should be timed to avoid disturbance to breeding Hawaiian hoary bats; woody plants greater than 15 feet (4.6 meters) tall should not be disturbed, removed, or trimmed during the bat birthing and pup rearing season (June 1 through September 15).

Additionally, we note that artificial lighting can adversely impact seabirds that may pass through the area at night causing disorientation which could result in collision with manmade artifacts or grounding of birds. If nighttime lighting is required DOFAW recommends that any lights used be downward facing and fully shielded to minimize impacts.

We appreciate your efforts to work with our office for the conservation of native species. Should the scope of the project change significantly, or should it become apparent that threatened or endangered species may be impacted, please contact our staff as soon as possible. If you have any questions, please contact Kate Cullison, Conservation Initiatives Coordinator at (808) 587-4148 or Katherine.cullison@hawaii.gov.

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. James Cogswell, Wildlife Program Manager
State of Hawai'i
Department of Land and Natural Resources, Division of Forestry & Wildlife
1151 Punchbowl Street, Room 325
Honolulu, HI 96809

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Cogswell:

Thank you for providing comments to the Department of Land and Natural Resources' (DLNR) Land Division dated May 16, concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments.

1. **Hawaiian Hoary Bats:** We note that the State and Federally listed Hawaiian hoary bat ('ōpe'ape'a) has the potential to occur in the vicinity of the project. Use of barbed wire will be avoided in the project area. Site clearing and tree removal of woody plants greater than 15 feet tall will be scheduled to occur outside of the birthing and pup rearing season of June 1 through September 15. A statement regarding these mitigation measures for the Hawaiian hoary bat is included in Section 3.4 of the Draft EIS.
2. **Native Seabirds:** Lighting at the project site will be installed to shine downward and be fully shielded to minimize impacts to seabirds that may pass through the area at night. A statement regarding downward lighting for the project is included in *Section 3.17 Visual Environment* of the Draft EIS.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

FORD N. FUCHIGAMI
DIRECTOR

Deputy Directors
JADE T. BUTAY
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

IN REPLY REFER TO:
DIR 0577
HWY-PS 2.4778

May 18, 2017

Mr. Jeff Overton, AICP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813-4307

RECEIVED
MAY 19 2017
G70

Dear Mr. Overton:

Subject: Environmental Impact Statement Preparation Notice
Pupukea Rural Community Commercial Center
Pupukea, Koolauloa, Oahu, TMK: (1) 5-9-022:068, 069, 070, 016

The Hawaii Department of Transportation, Highways Division, Planning Branch appreciates the opportunity to comment on the subject project. We recommend that a Traffic Impact Report (TIR) be included in the Draft Environmental Impact Statement. The TIR should have a traffic circulation site plan with location of access points to Kamehameha Highway and the transportation facilities surrounding the project site. We are particularly interested in any changes that this project may have on the existing transportation infrastructure (i.e., additional vehicle trip generation). The TIR should consider not only vehicle trips, but operational and safety issues for all modes of transportation, such as bike and pedestrian facilities.

To coordinate the construction schedule of this project with our Highways Division and minimize possible conflicts with our scheduled highway and maintenance projects in the area, we request that any Construction Traffic Control Plans prepared for the subject project also be submitted to our office for review.

We look forward to working with the Applicant to ensure that any adverse impacts that the project may have on the State's highway facilities are adequately addressed and mitigation measures are identified through this environmental review process.

If you have any questions, please contact Ken Tatsuguchi, Engineering Program Manager, Highways Division, Planning Branch, at (808) 587-1830 or via email at ken.tatsuguchi@hawaii.gov. Please reference file review number PS 2017-067 in all contacts and correspondence regarding these comments.

Sincerely,

FORD N. FUCHIGAMI
Director of Transportation

c: City and County of Honolulu, Department of Planning and Permitting

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Ford N. Fuchigami, Director of Transportation
State of Hawai'i
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

DOT File Review Number PS 2017-067

Dear Mr. Fuchigami:

Thank you for your comment letter dated May 18, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following response is offered to your comments.

A Transportation Impact Analysis Report (TIAR) was prepared to evaluate the potential impact on roadways in the project area. The TIAR is included in *Appendix F* of the Draft EIS. A discussion on traffic and proposed mitigation measures are included in *Section 3.13* of the Draft EIS.

We acknowledge that any Construction Traffic Control Plans for the project are to be submitted to the Department of Transportation, Highways Division for review, to minimize possible conflicts with scheduled highway and maintenance projects in the area.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

cc: Ken Tatsuguchi, Engineering Program Manager DOT-HI

OFFICE OF
ENVIRONMENTAL QUALITY CONTROL
DEPARTMENT OF HEALTH | 235 South Beretania Street, Suite 702, Honolulu, HI 96813 | oeqchawaii@doh.hawaii.gov

DAVID Y. IGE
GOVERNOR
SCOTT GLENN
DIRECTOR
(808) 586-4185

May 10, 2017

Kathy Sokugawa, Acting Director
Department of Planning and Permitting
City and County of Honolulu
650 S. King St. 7th Floor
Honolulu, HI 96813

Attention: Ardis Shaw-Kim

Dear Ms. Sokugawa,

Subject: Chapter 25, Revised Ordinances of Honolulu Environmental Impact Statement (EIS) Preparation Notice (EISPN) for Pupukea Rural Community Commercial Center

We have reviewed the subject EISPN, and have the following comments.

Figure 4: Conceptual Plan of the EISPN depicts a limited area of "GrassPave Parking" in the northeast corner, suggesting that the proposed development will add a considerable amount of "non-GrassPave" or presumably impervious pavement to the site. Given the project's proximity to the shoreline and the adjacent Marine Life Conservation District, in the Draft EIS please show that the impervious pavement is necessary, to what degree the added impervious surface area would increase stormwater runoff, and how those effects will be mitigated.

The OEQC recommends incorporating low impact development (LID) strategies, including minimizing impervious surface areas to help groundwater recharge and decrease stormwater runoff, as well as ensuring source reduction, reuse, and recycling throughout the project life. Resources for LID and green buildings can be found at http://planning.hawaii.gov/lud/, as well as across the internet.

Noting the substantial increase in parking capacity of the proposal over current conditions, we believe the impact on traffic deserves careful analysis, with mitigation measures identified in the Draft EIS.

Thank you for your participation in the environmental review process. We look forward to a response that will also be included within the project's Draft EIS.

Should you have any questions regarding these comments, please contact our office as noted in the letterhead.

Sincerely,

Tom Eisen

Tom Eisen
Acting Director

cc: Andrew Yani, Jeff Overton

17-478

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Tom Eisen
State of Hawai'i
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 97813

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Eisen:

Thank you for your comment letter dated May 10, concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments.

1. **Impervious Surface and Low Impact Development Controls**

The owners of the rural center support the preparation of a thorough Environmental Impact Statement, given the site's proximity to the public beach park and the Marine Life Conservation District. The EIS is a disclosure document that presents detail on the rural center project, the existing environmental conditions, and identifies potential impacts and mitigative measures. *Chapter 3* of the Draft EIS is dedicated to evaluating impacts of the rural center on groundwater, the nearshore marine environment, and traffic, among other topics.

The current conceptual site plan is contained in Chapter 2.0. Technical studies were conducted to evaluate the proposed site plan design impacts to drainage, surface runoff, groundwater and connections to the nearshore marine area, as well as provide existing marine water quality conditions and a description of the nearshore marine environment. Through use of best management practices and current engineering compliant with the recently enacted Water Quality Rules (Hawai'i Administrative Rules §20-3), controls will be implemented to minimize effects to the marine environment.

2. **Traffic Impacts**

A Transportation Impact Analysis Report (TIAR) was prepared to evaluate the potential impact on roadways in the project area. The TIAR is included in *Appendix F* of the Draft EIS. A discussion on traffic, connectivity with existing multi-modal pathways in the area, and proposed improvements for the area are included in *Section 3.13* of the Draft EIS.

Thank you for your participation in the environmental review process. Your office will receive the Draft EIS when it is ready for publication.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

City and County of Honolulu Agencies

DEPARTMENT OF PARKS & RECREATION

CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 309, Kapolei, Hawaii 96707
Phone: (808) 768-3003 • Fax: (808) 768-3053
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR

MICHELE K. NEKOTA
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

June 28, 2017

RECEIVED
JUL 12 2017
G70

Mr. Jeff Overton, AICP, LEED AP
Group 70
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Overton:

SUBJECT: Environmental Impact Statement, Preparation Notice
Pupukea Rural Community Commercial Center
Pupukea, Haleiwa, Hawaii

Thank you for the opportunity to review and comment on the subject EIS Preparation Notice.

The Department of Parks and Recreation is concerned that there is inadequate parking being proposed for this development and that customers of the Community Commercial Center will utilize the limited (28) parking stalls at the nearby Pupukea Beach Park, which would significantly impact park users.

Please address this concern in the Environmental Impact Statement.

Should you have any questions, please contact Mr. John Reid, Planner at 768-3017.

Sincerely,

Michele K. Nekota
Director

MKN:jr
(687760)

cc: Miles Hazama, District IV
Department of Parks and Recreation

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Michele K. Nekota, Director
City and County of Honolulu
Department of Parks and Recreation
1000 Uluohia Street, Suite 309
Kapolei, HI 96707

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Nekota:

Thank you for your comment letter dated June 28, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following response is offered to your comment.

The City and County Land Use Ordinance requires one off-street parking stall per per 400 square feet of commerce and business space; applying this to the proposed 30,000 square-foot center results in a requirement for 75 spaces. The project anticipates providing approximately 126 parking spaces. Further, the project proposes to install curb and sidewalk along the makai property edge, which will narrow the shoulder of Kamehameha Highway and reduce parking along the highway fronting the parcels. Additional information can be found in the EIS *Chapter 2* and *Appendix H*.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

KIRK CALDWELL
MAYOR

KATHY K. SOKUGAWA
ACTING DIRECTOR

TIMOTHY F. T. HIU
DEPUTY DIRECTOR

RECEIVED
JUN 15 2017
G70

2017/ED-6(ASK)

June 9, 2017

Mr. Jeff Overton, AICP LEED AP
G70
925 Bishop Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Overton:

SUBJECT: Environmental Impact Statement Preparation Notice (EISPN) for
Pupukea Rural Community Commercial Center,
Pupukea, Haleiwa, Oahu
Tax Map Keys 5-9-011: 016, 068, 069, and 078

The Department of Planning and Permitting (DPP), has reviewed the above-named EISPN and offers the following comments:

1. Pages 3 and 12 of the EISPN indicate that the DPP is the "Approving Agency" for the Project. The Draft EIS should clarify that the DPP is the accepting authority for purposes of the Environmental Impact Statement, and the Honolulu City Council is the approving authority for the Special Management Area (SMA) Use Permit.

2. Page 6 of the EISPN states that "the existing Foodland grocery store property is tied to the Project through a 1996 development agreement." This implies that Foodland property is necessarily part of the Project site. If the Project concept is to have all four of the lots treated as one zoning lot, a Conditional Use Permit for a joint development will be required.

3. The Draft EIS should note the proposed interim plan for which the Applicant has submitted an SMA Minor Permit application. Through it, the Applicant seeks to gain authorization to continue certain uses and perform other site work until the site is completely redeveloped with the Project described in the EISPN.

4. The Draft EIS should discuss storm water runoff and noise during the construction period.

5. References to the zoning in the Draft EIS should be consistent. The property is within the B-1 Neighborhood Business District.

6. The Draft EIS should address exterior lighting and solid waste, and the potential impacts associated with these on the surrounding environment.

Should you have any questions, please contact Ardis Shaw-Kim of our staff at 768-8021 or ashaw@honolulu.gov.

Very truly yours,

For Kathy K. Sokugawa
Acting Director

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Kathy K. Sokugawa, Acting Director
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Sokugawa:

Thank you for your comment letter dated June 9, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments:

1. **Approving Agency.** The Draft EIS (*Chapter 1, Project Summary*) lists DPP as the accepting authority for the purposes of the EIS, and lists the Honolulu City Council as the approving authority for the Special Management Area (SMA) Use Permit. These authorities are also reflected in *Chapter 4, Relationship of Proposed Action to Land Use Plans, Policies and Controls for the Affected Area*.

2. **Conditional Use Permit.** As discussed in *Section 2.2*, the private development agreement among the four parcels was established to achieve mutual benefits of an integrated neighborhood shopping center. The *North Shore Sustainable Communities Plan* identifies the Foodland market as part of the Rural Community Commercial Center, as well as the parcels proposed for development by Hanapohaku. We acknowledge that a Conditional Use Permit for joint development would be needed, should it be desired to treat all four of the lots as one zoning unit. *Table 1-1, Required Reviews and Permits* in the EIS identifies the existing Conditional Use Permit joint development agreement among the three Hanapohaku-owned parcels was accepted by DPP in October 2017.

3. **SMA Minor Permit Application.** Section 2.2 of the Draft EIS notes that the existing commercial operations on the property are entitled under a Special Management Area (SMA) Use Permit – Minor (2017/SMA-21), along with corresponding site development and building permits.

4. **Stormwater Runoff and Noise.** Storm water runoff, for both the construction period and long-term controls, is covered under "*Drainage*" in EIS *Section 3.6 Surface Water and Drainage*. Noise during the construction period is covered in the EIS under *Section 3.15 Noise*.

5. **Zoning.** The EIS provides consistent reference to parcels' zoning as B-1 Neighborhood Business District.

6. **Exterior Lighting and Solid Waste.** *Section 3.17 Visual Environment* in the EIS discusses exterior lighting compliance with Section 2015-A71(b). Solid waste management will be addressed during the construction phase.

Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

KIRK CALDWELL
MAYOR

WES FRYSZTACKI
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

TP4/17-688272R

May 16, 2017

RECEIVED
MAY 17 2017
G70

Mr. Jeff Overton, AICP, LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Overton:

SUBJECT: Environmental Impact Statement Preparation Notice (EISPN) for Pupukea Rural Community Commercial Center, Pupukea, Oahu, Hawaii

In response to your letter dated April 21, 2017, we have the following comments:

1. The Draft Environmental Impact Statement (DEIS) should include a Traffic Management Plan, which discusses traffic impacts the project may have on any surrounding City roadways, including short-term impacts during construction and long-term impacts after construction with corresponding measures to mitigate these impacts by applying complete streets principles.

2. The DEIS should include a discussion of the existing safety and traffic operational issues from entering and exiting the loading area in back of Foodland off of Pupukea Road with measures to mitigate these issues.

3. We have the following comments regarding loading and unloading at the project site:

   a. All deliveries and refuse services should be handled on-site. A description of how the delivery and refuse vehicles will safely maneuver their vehicles on the property should be provided and the location marked on the site plan.

   b. The project should be designed to accommodate TheHandi-Van para-transit vehicles on-site, which require a minimum 31-foot turning radius, a 10-foot, 6-inch height clearance, and the ability to exit the site without reversing onto public roadways.

4. We have the following comments regarding the bus stop on Kamehameha Highway, fronting the existing Foodland Supermarket:

   a. Locate the bus stop, shelter, and bus bay on the site plan.

   b. The project should provide a continuous ADA accessible pathway from the "retail pad" to the existing bus stop and ending at the intersection of Kamehameha Highway and Pupukea Road.

   c. Construction notes should include the following note regarding transit services:

      "This project will affect bus operations, bus routes, bus stops, and para-transit operations. **At least two (2) weeks prior to construction**, the Contractor shall provide notification of the scope of work, location, detour, proposed closure of any street, traffic lane, sidewalk, or bus stop and duration of project to:

      Department of Transportation Services, Public Transit Division:
      768-8396 and TheBusStop@honolulu.gov
      Oahu Transit Services, Inc.:
      Bus Operations: 768-9520 and 848-4565 and
      Field_Operation_Mgr@thebus.org
      Para-transit Dispatch and Operations:
      454-5007 and 768-9852"

5. Best Management Practice controls should be included at construction site to prevent trailing of dirt and debris on City roadways.

6. All access driveways to the project site should be designed with the highest pedestrian and bicycle safety measures.

7. The EISPN states that there will be bicycle parking provided. Locate the bicycle parking on the site plan.

8. Any damage to the existing roadway and sidewalk area caused by the project should be repaired to current City standards.

9. The area Neighborhood Board, as well as the area residents, businesses, emergency personnel (fire, ambulance and police), Oahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should be kept apprised of the details of the proposed project and the impacts that the project may have on the adjoining local street area network.

10. Construction materials and equipment should be transferred to and from the project site during off-peak traffic hours (8:30 a.m. to 3:30 p.m.) to minimize any possible disruption to traffic on the local streets.

11. Plans should be reviewed and approved by the Disability and Communication Access Board to ensure full compliance with the Americans with Disabilities Act.

We reserve further comment pending review of the DEIS.

Thank you for the opportunity to review this matter. Should you have any questions, please contact Renee Yamasaki of my staff at 768-8383.

Very truly yours,

Wes Frysztacki
Director

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Wes Frysztacki, Director
City and County of Honolulu
Department of Transportation Services
650 South King Street, 3rd Floor
Honolulu, HI 96813

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Frysztacki:

Thank you for your comment letter dated May 16, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments:

1. **Traffic Management Plan**

A Transportation Impact Analysis Report (TIAR) was prepared to evaluate the potential impact on roadways in the project area. The TIAR is included in *Appendix F* of the Draft EIS. The TIAR identifies project-generated trips and impacts at peak hours, notes the lack of existing multi-modal pathways in the area, and proposes improvements. A summary of its findings is included in *Section 3.13* of the Draft EIS.

2. **Existing Safety and Traffic Operations**

The Draft EIS describes current operations at the loading area behind the existing Foodland and the occasional impacts to Pūpūkea Road in *Section 3.13 Traffic*. Various options to minimize impacts from deliveries to Foodland are under discussion. Consolidated access is proposed for vehicles from Kamehameha Highway to both the new rural center and the existing Foodland parking lot.

3. **Loading and Unloading at the Project Site**

Traffic circulation for the new construction will provide for delivery trucks and refuse services to maneuver on site without reversing onto Kamehameha Highway.

4. **Bus Stop on Kamehameha Highway**

Section 3.13 of the EIS includes a figure identifying potential new northbound bus stop locations, to be finalized with input from DTS. The project proposes an ADA-compliant sidewalk along Kamehameha Highway from the Pūpūkea Road to Pāhoe Road, with a new

crosswalk proposed at the northwest corner of the project site and Pāhoe Road. A multi-modal path is proposed around the center's central green to provide off-street access through the rural community commercial center with links to crosswalks to access Foodland.

We acknowledge your request that notification of bus stop disruption due to construction be provided to Oahu Transit Services prior to the construction period.

5. **Best Management Practice Controls**

Section 3.2 Geology, Topography, and Soils identifies soil erosion minimization measures and good housekeeping practices to prevent and minimize off site impacts such as dirt and debris on City roadways.

6. **Access Driveways**

To improve multi-modal safety, the project proposed to provide a pedestrian pathway along the makai edge of the rural center site. A single consolidated access driveway from a dedicated turn lane on Kamehameha Highway will improve safety for pedestrians and bicyclists.

7. **Bicycle Parking**

The location of bicycle parking will be included in the construction design phase.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

HONOLULU FIRE DEPARTMENT

CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

KIRK CALDWELL
MAYOR

MANUEL P. NEVES
FIRE CHIEF

LIONEL CAMARA JR.
DEPUTY FIRE CHIEF

RECEIVED
MAY 15 2017
G70

May 11, 2017

Mr. Jeff Overton, AICP, LEED AP
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Overton:

Subject: Environmental Impact Statement Preparation Notice
Pupukea Rural Community Commercial Center
Tax Map Keys: 5-9-022: 016, 068, 069, and 070

In response to your letter dated April 21, 2017, regarding the above-mentioned subject, the Honolulu Fire Department determined that there will be no significant impact to fire department services.

Should you have questions, please contact Battalion Chief Wayne Masuda of our Fire Prevention Bureau at 723-7151 or wmasuda@honolulu.gov.

Sincerely,

SOCRATES D. BRATAKOS
Assistant Chief

SDB/JL:bh

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Socrates D. Bratakos, Assistant Chief
City and County of Honolulu
Honolulu Fire Department
636 South Street
Honolulu, HI 96813-5007

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Bratakos:

Thank you for your comment letter dated May 11, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu.

We acknowledge that the Honolulu Fire Department has determined there will be no significant impact to fire department services as a result of the project.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

KIRK CALDWELL
MAYOR

~~LOUIS M. KEALOHA~~
CHIEF

CARY OKIMOTO
JERRY INOUYE
DEPUTY CHIEFS

OUR REFERENCE MT-DK

May 4, 2017

Mr. Jeff Overton, AICP, LEED AP
Principal
G70
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Overton:

This is in response to your letter of April 21, 2017, requesting comments on the Environmental Impact Statement Preparation Notice for the Pupukea Rural Community Commercial Center project.

The Honolulu Police Department has reviewed this project and has concerns regarding the safe flow of vehicular and pedestrian traffic along the project area.

We recommend that the developer evaluate and report the outcome of the traffic and pedestrian flow affected by the development at the property site. The developer should also consider the effects to the community caused by vehicles moving in and out of the area during the construction and after the completion of this project. The contractor should provide a traffic mitigation plan to implement traffic controls and management (e.g., flag persons, clear signage and cones, special duty officers, etc.) for construction vehicles driving to and from the work site, especially on Kamehameha Highway. This will ensure a safe means of ingress/egress for construction vehicles, motorists, and pedestrians in the vicinity.

If there are any questions, please call Major Darren Izumo of District 2 (Wahiawa) at 723-8703.

Thank you for the opportunity to review this project.

Sincerely,

CARY OKIMOTO
Acting Chief of Police

By
MARK TSUYEMURA
Management Analyst VI
Office of the Chief

Serving and Protecting With Aloha

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Cary Okimoto
Acting Chief of Police, Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, HI 96813

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Okimoto:

Thank you for your comment letter dated May 4, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments:

The Draft Environmental Impact Statement (EIS) describes proposed changes to improve traffic flow along Kamehameha Highway in *Section 3.13 Traffic*. The existing Foodland driveways off Kamehameha Highway will be consolidated to reduce the total number of access points and improve pedestrian safety. The existing driveway connection to Pūpūkea Road will be retained. A center two-way left-turn lane is proposed to provide a refuge area for traffic turning left into and out of the rural center. A Transportation Impact Analysis Report (TIAR) was prepared to analyze existing traffic and future traffic conditions with the project, and evaluates the proposed improvements to minimize traffic impacts. The TIAR is included in *Appendix F* of the EIS.

We acknowledge your request that traffic controls and management be implemented during construction.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

Elected Officials

The Senate

STATE CAPITOL
HONOLULU, HAWAII 96813

May 24, 2017

Honolulu City & County
Department of Planning and Permitting
650 s King St, 7th Floor
Honolulu, HI 96813

G70
925 Bethel Street, 5thFloor
Honolulu, HI 96813

Hanapohaku LLC
59-716 Kamehameha Hwy
Haleiwa, HI 96712

RE: Pupukea Rural Community Commercial Center EISPN

Dear Sir/Madame:

Please accept these comments and questions regarding the Environmental Impact Statement Preparation Notice for Pupukea Rural Community Commercial Center EISPN.

Section 1.2 Overview of Project Site
"The Hanapohaku LLC parcels contain a mix of commercial ocean recreational rental concessions including Seamaids Beach Boutique and North Shore Surf Shop, a real estate office, dentist office and mobile food trucks."

COMMENT 1: The description should include discussion of the existing violations that DPP has cited against the land and its owner. In particular, the ongoing violations regarding illegal grubbing and development without SMA permits should be discussed, as well as the number of mobile food trucks legally permitted and number presently onsite. The new food commissary and the recently installed wastewater treatment system should be noted and identified as permitted, or not permitted. The Overview of Project Site should accurately reflect the existing elements and uses of the subject property.

Section 1.3 Proposed Action and Purpose of EISPN
The Plan defines the Rural Community Center as a: "small cluster commercial and services businesses located on major thoroughfares that provide a range of goods and services to meet the needs of the surrounding residential communities."

COMMENT 2: Thorough analysis of direct and indirect impacts to residents of the surrounding communities is warranted. Particular attention should be paid to the estimated mix of residential versus visitor commerce and needs. To meet the spirit of the North Shore Communities Sustainable Plan guideline, benefits to area residents should exceed those of visitors. How will this be accomplished?

Section 2.1 Existing Conditions
The project site currently houses small surfboard rental and swimwear concession, a real estate office, and seven outdoor food truck establishments.

COMMENT 3: Why is this description different from Section 1.2? I restate Comment 1 about the Existing Conditions.

Page 10 Proposed Action
The planned floor area of the facilities will be approximately 27,500 sf of leasable area.
Page 14 Short Term Impacts
The project will include grubbing and grading of the current site, and development of the 29,000 sf (leasable floor area).

COMMENT 4: What is the correct leasable floor area?

Figure 4 Concept Plan

COMMENT 5: The visualization indicates parking in the Foodland parking lot over the leech field near the bus stop. Is that permitted? Will Foodland have less, the same mount, or more parking in its own parking lot, if the proposed access points between projects are built? What impacts will the proposed action have on traffic circulation and parking in the Foodland parking lot?

COMMENT 6: It looks like lunch wagons are planned for the project, but this is not clear because there is no discussion. There appears to be no provision for lunch trucks other than to locate them in available parking spaces. Is any commitment being made by the developer to have lunch wagons on the property for years to come? If lunch wagons are being contemplated, how much fresh water, electricity, gray water, wastewater, food waste, grease, and other garbage will be consumed or generated; and how will these be accommodated?

Section 2.3 Required Permits and Approvals

COMMENT 7: The EIS should clearly describe the status of existing violations, permits and actions required to get into compliance, and timeline to complete requires actions.

Section 5.1 No Action Alternative
The No Action Alternative would maintain the property in its existing condition, with limited allowed commercial uses per the existing SMA minor permit. The uses include the real estate office, dentist office, surf and clothing store, and one food truck establishment.

COMMENT 8: The existing conditions are not as described. Will Hanapohaku LLC return the property to the "existing condition," as described, before beginning to study impacts? How else can baseline impacts be measured for this alternative, if the actual use and activity on the site are different than stated? Accurate analysis of impacts now and projected in the future for the No Action Alternative is essential for credible comparison with the proposed action. Great care must be taken to accurately describe, measure and discuss impacts for this alternative.

If Hanapohaku LLC will not return the property to the "existing condition," a robust justification must be presented along with clarity on what is No Action Alternative.

Section 5.2 Commercial Shopping Center Alternative
This alternative would contemplate development of a 45,000 to 50,000 SF shopping center.

COMMENT 9: Page 10, Proposed Action states: The planned floor area of the facilities will be approximately 27,500 sf of leasable area (30,000 sf gross floor area). Are these numbers consistent with each other? Is the size of the shopping center synonymous with the gross floor area or does the 45,000 to 50,000 SF include more than gross floor area? Please clarify.

COMMENT 10: Should there be a third alternative? Is there no other contemplated outcome besides the "existing conditions" as described in the No Action Alternative and the Commercial Shopping Center Alternative?

Please include me as a consulted party. Thank you for this opportunity to share my thoughts.

Respectfully submitted,

Gil Riviere

Gil Riviere
Senator, District 23
Oahu's North and Windward Shores

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Senator Gil Riviere
The Senate, District 23
State of Hawai'i
1151 Punchbowl Street, Room 325
Honolulu, HI 96809

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1) 5-9-011:068, 069, 070, 016
Pūpūkea, O'ahu, Hawai'i

Dear Senator Riviere:

Thank you for your comment letter dated May 24, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center. The following responses are offered to your comments.

1. **Overview of Project Site**

The elements of the project site are described in Section 2.0 of the Draft EIS. The existing conditions are based on the commercial activities approved for this site by the City and County of Honolulu Department of Planning and Permitting (DPP) in the August 2017 Special Management Area (SMA) Use Permit Minor (SMA/2017-21).

2. **Direct and Indirect Impacts**

The North Shore Sustainable Communities Plan emphasizes the provision of goods and services to residents of the surrounding communities. As stated previously, the commercial tenants of the rural center will have a primary focus of delivering goods and services for the local community. The center will offer many of the goods and services which are not provided locally, such as medical services, pharmacy and financial services. Patronage of the commercial venues by local residents is a primary emphasis. However, as witnessed by the patronage of the Foodland Pūpūkea store, many are attracted to the area by Sharks Cove, Pūpūkea Beach Park, and the Marine Life Conservation District. The rural center must also serve the needs of these visitors to the area, consisting of other O'ahu residents and tourists. The Draft EIS Section 3.0 presents the potential impacts associated with the rural center, including both direct and indirect effects.

3. **Proposed Action and Purpose**

The elements of the proposed action are described in Chapter 2.0 of the Draft EIS, and we apologize for inconsistencies in the EISPN project description. The future project emphasizes consistency with the North Shore Sustainable Communities Plan (SCP) in the

creation of this Rural Community Commercial Center. The landowners are committed to pursuing Hawai'i-based businesses as tenants of the center. This commitment underlies the objectives of the owners to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community. The offering of goods and services to the surrounding community will include a second branch of the Waialua Federal Credit Union, an urgent care medical clinic, a pharmacy, professional services (dentistry, legal, chiropractic, etc.), fitness studio and child day care, as well as business center and health food market/deli.

4. Leasable Floor Area

A major emphasis is limiting the scale of development, in keeping with the surrounding rural community context. The planned gross building floor area of 30,000 square feet (SF) will yield a net leasable floor area of approximately 27,500 SF. This represents less than 25% of the allowable commercial floor area for the subject properties, reflecting a great sensitivity to establishing an appropriate scale for this rural center.

5. Concept Plan

Section 2.4.1 provides a description of the internal driveway circulation and parking, including the adjoining Foodland Pūpūkea property. The State of Hawai'i Department of Health allows for construction of a parking lot above a subsurface wastewater disposal field. With the closure of the current ingress and egress driveways off Kamehameha Highway, there will be some reconfiguration of the parking lot. The parking spaces in the Foodland lot are estimated to increase by eight stalls.

Internal circulation for the Foodland Pūpūkea parking lot will improve with the provision of two interconnections between the parking lot and the primary access driveway. Access to and from Kamehameha Highway will improve with a left-turn storage lane that will consolidate ingress to one driveway. A discussion on future traffic conditions is provided in Section 3.13 of the Draft EIS.

6. Food Trucks

The rural center will make provisions for supporting mobile food establishments ("food trucks") on the property. Mobile food trucks may be among the tenant mix periodically using the central gathering space. While in practice the number may be much lower, the wastewater and parking capacity for the rural center are sized to support up to eight mobile food trucks, their patrons, and employees. The food trucks will be fully mobile and compliant with DOH and DPP regulations. The trucks will not be connected to, nor utilize, the on-site wastewater system. Per current DOH rules, food trucks are required to have liquid wastes removed at an approved waste servicing area or by a licensed commercial pumping contractor. By rule, the mobile food establishment must operate in conjunction with a designated food establishment for servicing.

7. Required Permits and Approvals for Existing Use Compliance

The Draft EIS presents a summary of the land use plan approved in August 2017 for existing uses under a Special Management Area (SMA) Use Permit Minor (SMA/2017-21). This approval includes a listing of conditions to address prior violations on the property, and permits and actions required for compliance. Actions are being completed by the owners to meet the set of compliance requirements under the approved SMA Minor Permit.

8. Alternatives Descriptions/Third Alternative

The evaluation of alternatives presented in the Draft EIS Chapter 5.0 includes the No-Action Alternative, the Commercial Shopping Center Alternative, and the Alternative Development Timetable (Deferral). The No-Action Alternative is based on utilization of the subject properties in compliance with the existing SMA Minor Permit (SMA/2017-21). The Shopping Center Alternative is described as a viable project with a gross floor area of 46,000 SF, which is approximately 40% of the LUO development capacity under its B-1 commercial zoning. Such a center would provide a wider range of goods and services for residents of the surrounding neighborhoods and their visitors. Another alternative that is addressed is the Alternative for Deferred Action, which would delay the development of the rural center to some future date several years from now. Until future development, the property would continue operations under the existing SMA Minor Permit (SMA/2017-21).

We appreciate your service to the North Shore community for many years, and thank you for your participation in the environmental review process.

This letter serves as a response to your EISPN comment letter, and we will notify you of the availability of the Draft EIS and Final EIS. Please contact our office if you have questions or other issues you wish to be addressed during this process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

COMMUNITY INTEREST GROUPS AND ORGANIZATIONS

NORTH SHORE NEIGHBORHOOD BOARD NO. 27

c/o NEIGHBORHOOD COMMISSION • 530 SOUTH KING STREET ROOM 406 • HONOLULU, HAWAII 96813
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET: http://www.honolulu.gov/nco

April 18, 2016

Mr. George Atta
Director, Department of Planning and Permitting
630 S. King Street
Honolulu, HI 96813

Aloha Mr. Atta:

At the Wednesday, April 6, 2016 North Shore Neighborhood Board No. 27 Special Meeting, the board voted, 9-0-0 on the following motion regarding the Sharks Cove Development:

That the North Shore Neighborhood Board Strongly supports the statement of the Sharks Cove Coalition and urges the City & County of Honolulu Department of Planning & Permitting to fully enforce the Special Management Area ordinances and building code for the Sharks Cove Commercial Development.

Attached is the statement the Board supported. Please keep us informed regarding any actions the Department of Planning and Permitting takes on this project.

Please call or email if you have any questions.

Mahalo,

Kathleen M. Pahinui
Chair, North Shore Neighborhood Board No. 27

cc: Art Challacombe, Deputy Director, Department of Planning and Permitting
Council Chair Martin

Sharks Cove Coalition

is a network of community groups, neighbors, and individuals united

to protect and enhance the ecological integrity, natural beauty, and low-impact recreational uses of Sharks Cove, the jewel of Pūpūkea Beach Park and the Pūpūkea Marine Life Conservation District, for the benefit of local residents, visitors, and future generations.

Our statement is that Sharks Cove Coalition seeks to ensure that all federal, state, and county laws including the 1978 Unilateral Agreement are followed by **Hanapohaku LLC**, the owners developing the three contiguous B-1 "neighborhood commercial" properties on Kamehameha Highway and Pahoe Road, mauka of Sharks Cove.

The Coalition *does not oppose* current or future commercial uses or users on the property that fit the B-1 "neighborhood commercial" zoning, which is designed to serve the "daily retail and other business needs of the surrounding population," so long as:

(1) **proper planning and permitting processes** that protect the community and the environment are followed, starting now;

(2) **adequate environmental review** is completed prior to any further development to fully assess the **potentially significant and cumulative impacts** on the community, culture, and environment, especially Sharks Cove, the Pūpūkea Beach Park, and the Pūpūkea Marine Life Conservation District MLCD, including: litter, sanitation, surface and subsurface runoff, water or ocean contamination, traffic, pedestrian safety, noise, odors, and overuse of protected areas; and

(3) the owners engage immediately in **good faith hearings, presentations, and discussions** with the residents and community concerned about and affected by the present and future development.

For more information, go to: savesharkscove.org

- **Mālama Pūpūkea-Waimea**
- **Save Sunset Beach Coalition**
- **Friends of Sharks Cove**
- **Sierra Club – O'ahu Group**
- **Surfrider – O'ahu**
- **Defend O'ahu Coalition**
- **Hawai'i's Thousand Friends**
- **Life of the Land**
- **Keep the North Shore Country**
- **Pahoe Road Residents Hui**
- **Sunset Beach Community Association**
- **KAHEA – The Hawaiian-Environmental Alliance**

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Kathleen M. Pahinui, Chair
City and County of Honolulu
North Shore Neighborhood Board No. 27
530 South Street, Room 406
Honolulu, HI 96813

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Pahinui:

Thank you for your comment letter dated April 18, 2016 reflecting your view on the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments.

We acknowledge that the North Shore Neighborhood Board strongly supports the statement of the Sharks Cove Coalition. In August 2017, the Department of Planning and Permitting issued a Special Management Area (SMA) Use Permit Minor (SMA/2017-21) for existing uses. The approval includes a listing of conditions to address prior violations on the property, and permits and actions required for compliance. Actions are being completed by the owners to meet the set of compliance requirements under the approved SMA Minor Permit.

The nearby presence of the public beach park and the sensitive resources at the Marine Life Conservation District were examined by technical experts; findings are summarized in *Chapters 2.0* and *3.0*, and technical appendices to be published in the Draft EIS. The EIS is a disclosure document that presents detail on the rural center project, the existing environmental conditions, and identifies potential impacts and mitigative measures.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

MĀLAMA PŪPŪKEA-WAIMEA
PROTECTING OUR OCEAN'S RESOURCES

Mālama Pūpūkea-Waimea
Post Office Box 188
Hale'iwa, HI 96712

Board of Directors

Denise Antolini
Colette Coty
John Cutting
Bob Leinau
Laura Parsons
Jim Parsons

Advisory Council

Athline Clark
Dr. Alan Friedlander
Debbie Gowensmith
Bill Quinlan
Palakiko Yagodich

Staff

Maxx Elizabeth Phillips, Managing Director
Jenny Yagodich, Director of Educational Programs & Community Outreach

Federal Nonprofit Organization
501(c)(3) FEIN 27-0855937
www.pupukeawaimea.org

May 22, 2017

Ardis Shaw-Kim, (808) 768-8021, ashaw@honolulu.gov
Andrew Yani, (808) 779-5733, hanapohakullc@gmail.com
Jeff Overton, AICP LEED AP, (808) 523-5866, pupukea@g70.design

Re: Pūpūkea Rural Community Commercial Center EISPN Comments

Dear Ms. Shaw-Kim, Mr. Yani, and Mr. Overton:

Since 2005, Mālama Pūpūkea-Waimea (MPW) has worked "to replenish and sustain the natural and cultural resources of the Pūpūkea and Waimea ahupua'a for present and future generations through active community stewardship, education, and partnerships."

Our organization was created thirteen years ago in response to the serious threats to the community and marine ecosystem in these ahupua'a that arose from the commercial "mall" development by the Honu Group on the same parcels that are the subject of this EISPN.

We have since dedicated thousands of hours of volunteer and staff time, and substantial resources, in particular to protecting the State Marine Life Conservation District (MLCD) at Pūpūkea and stewarding Pūpūkea Beach Park.

We are deeply concerned about the environmental and community impacts of the proposed Pūpūkea Rural Community Commercial Center, and about the existing illegal development of the property, and therefore provide the following comments on the EISPN:

Consulted Party

MPW requests to be a formally consulted party in the EIS process going forward. Please provide all future documents and correspondence to both Denise Antolini (antolinid@gmail.com) and Maxx Elisabeth Phillips (maxxephillips@gmail.com) and mail hard copies to MPW address indicated.

Section 1.3 Proposed Action and Purpose of the EISPN

The North Shore Sustainable Communities Plan's definition of Rural Community Commercial Center requires that development of these parcels be "small cluster" and "meet the needs of the surrounding residential communities."

The Concept Plan presented by Hanapohaku LLC (HP) exceeds the "small cluster" level because the proposed development – through buildings, parking lots, roadways, and food trucks – takes up nearly all empty space on the three parcels. Sprawl is not small. The total proposed gross *floor* area is 30,000 (p. 10). But this number is a substantial under-estimate of the footprint because the EISPN does not provide information about the total footprint of the development from the proposed paved parking lots, paved roadways, drainage systems, and the food trucks (with associated tables, chairs, decks, walkways,

and spillover equipment areas).

The Concept Plan violates the spirit and letter of the NSSCP because it does not cater to "the needs of the surrounding residential communities." Instead, HP proposes a commercial center that is focused on attracting tourists and non-residential customers.

HP acknowledges that Rural Community Commercial Centers "also attracts residents and visitors outside the immediate community." (P. 10.) This is a gross under-statement of (a) the focus of the HP owners on the quick-turnover, drive-by tourism market as indicated by their past almost two years of kapahahi commercial activity with hundreds if not thousands of tourists a day (far outweighing resident customers), (b) the major impacts on the Pūpūkea community caused by the kind of development that will attract more tourism, more traffic, and more pollution to this small area, and (c) the conclusion that catering to tourists is not consistent with the NSSCP, which focuses on the needs of "*surrounding residential communities.*"

While HP may claim that they will rent to local businesses with local owners, and cater to local residents, this is an illusory promise. HP is not going to be bound to do any catering to local needs once the development is completed. All of the retail units can, and likely will be, flipped to high-traffic tourism-focused businesses on a dime.

2.1 Project Setting and Description

MPW notes that most of the existing commercial uses on the H property are not legal because HP does not have a Special Management Area (SMA) permit for the myriad of activities on the property that constitute development. The City and County of Honolulu Department of Planning & Permitting (DPP) has imposed fines for multiple violations of building codes and currently has HP under an Notice of Order whereby HP is accumulating fines of over $500 per day. This important information was omitted from this section and must be acknoweldged in the DEIS, accurately and fully.

In describing the proposed action, p. 10, the EISPN says "[b]uildings will be set back from the highway to provide a large park-like green space, walkways, and bicycle parking." Although that sounds attractive, it is not what is indicated by the Concept Plan, which shows a narrow setback from the Highway and no "large park-like green space," but rather eight crammed in food trucks, which are not drawn realistically because the canopies, decks, service counters, fake grass, picnic tables, umbrellas, garbage bins, hoses, electrical lines, pipes, outdoor lighting, signage, outside equipment, and other "spillover" from *each* of these trucks as currently operating on the property is not indicated. The other "green area" is overshadowed and surrounded by what looks like six two-story buildings. This is hardly the "community gathering space" suggested by the EISPN.

3.1 Physical and Natural Environment

The EISPN notes the project's proximity to "the ocean located a distance of 500 feet across Kamehahema Highway." Oddly, given that MPW has consistenly raised numerous concerns about the impact of the current and future development on the Pūpūkea MLCD and Pūpūkea Beach Park for over a year with HP, the EISPN *does not mention the direct runoff connection to the MLCD, the importance of the MLCD itself, or the sensitive nature of the marine environment and beach park.* A similar lack of appropriate focus and analysis of the sensitivity of this special marine protected area was a serious and fatal omission from the EA for the Honu project in 2004.

MPW also has concerns that HP will not conduct an adequate marine impact survey. MPW has already objected in communications with G70 to HP's decision to retain Steve Dollar as its marine consultant. MPW now makes that objection formal. Given his track record of always working for developers, and other questionable work in the past, Dollar does not appear to be impartial, capable, or inclined to conduct an accurate and credible survey of the potential impacts of this project or alternatives on the MLCD.

4.3 Significance Criteria

MPW does not agree with HP's statement (p. 14) that "Due to substantial environmental improvements to these properties, the project is anticipated to result in negligible adverse effects and beneficial impacts to the environment." MPW expects that the project will have major, long-term, and irreversible impacts to the MLCD, the Beach Park, and to litter, traffic, pedestrian hazard, noise, aesthetic, and the view planes. These impacts are not offset by proposed amenities such as a EV charging station for HP's owner or solar panels that offset the owner's electrical bill for substantial new consumptive uses on the property. The environment cannot be traded off in this manner like three-card Monte.

Indeed, most likely because G70 recognizes that there are significant potential impacts, G70 has made the wise decision advise HP to go "direct to the EIS" instead of claiming that the impacts can be mitigated down to the EA/FONSI level. However, the "no net negative impact" language of the EISPN does not match the fact that this is an EISPN and is therefore this section is misleading.

5.1 No Action Alternative

The No Action Alternative is incorrectly framed. This section incorrectly states that there is an "existing SMA Minor permit." (p. 17) No such permit exists for uses other than the pre-existing (pre-HP-purchase) buildings. The development currently on the property that is post-"baseline" (post-purchase by HP) *does not have a SMA permit*. This needs to be stated correctly.

If HP contends that "no action" refers to only those current uses with an SMA permit, then HP must take the property back to the baseline condition. This means removing all of the food trucks and related development on the property. In other words, No Action does not mean "leave all the current food trucks and mess" on the property. Under HEPA, No Action cannot mean an illegal action. Because HP's current development (post-purchase) is illegal due to the lack of an SMA, *No Action means taking the property back to the pre-purchase baseline conditions.*

5.2 Commercial Shopping Center Alternative

HP describes only one alternative, a Commercial Shopping Center, and this alternative is a false one because it is not feasible under the NSSCP, given that (as described on p. 6) the NSSCP limits development on these lots to a "small cluster" and a development that "meet the needs of the surrounding residential communities." This kind of straw-person alternative is not reasonable.

HP should come up with alternatives that conform to the NSSCP and that involve *less* not *more* development that proposed by the Concept Plan. These alternatives could include conservation of a substantial portion of the property and development that truly focuses on serving the needs of the immediate residential community.

Sincerely,

Denise Antolini
President

Cc: Maxx E. Phillips

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Denise Antolini, President
Mālama Pūpūkea-Waimea
via email: antolinid@gmail.com

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1) 5-9-011:068, 069, 070, 016
Pūpūkea, Oʻahu, Hawaiʻi

Dear Ms. Antolini:

Thank you for your comment letter dated May 22, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments.

1. **Consulted Party**

We thank you for your input to the EIS process and welcome your involvement. We will notify you via email, per your request, of the availability of the Draft EIS and Final EIS. This letter serves as a response to your EISPN comments. Please contact our office if you have questions or other issues you wish to be addressed in this process.

2. **Proposed Action and Project Purpose**

The elements of the proposed action are described in *Chapter 2.0* of the Draft EIS. The future project emphasizes consistency with the North Shore Sustainable Communities Plan (SCP) in the creation of this Rural Community Commercial Center. In keeping with the guidance of the SCP, the scale of development is approximately 25 percent of the allowable commercial floor area for the subject properties. The planned gross building floor area of 30,000 square feet (SF) will yield a net leasable floor area of approximately 27,500 SF. This reflects sensitivity to establishing an appropriate scale for this rural center.

The center will offer many of the goods and services which are not provided locally, such as medical services, pharmacy and banking. The committed tenants for the rural center reflect an offering of goods and services to the surrounding community that would otherwise require vehicle trips to commercial centers in Haleʻiwa or Central Oʻahu. The project will positively impact economic opportunities by adding business opportunity for Hawaiʻi entrepreneurs, and by adding jobs within the region. In turn, area residents that work at the center can avoid long commutes to job centers in urban areas of Oʻahu. Many of these businesses are Hawaiʻi-based, and some of these businesses are owned by North Shore residents.

Patronage of the commercial venues by local residents is a primary emphasis. However, as witnessed by the patronage of the Foodland Pūpūkea store, many are attracted to the area by Sharks Cove, Pūpūkea Beach Park, and the Marine Life Conservation District. The rural center must also serve the needs of these visitors to the area, consisting of other O'ahu residents and tourists.

Chapter 3 of the Draft EIS is dedicated to evaluating impacts of the rural center on groundwater, the nearshore marine environment, and traffic, among other topics. No significant impacts to these or other resources are anticipated.

3. Project Setting and Description

The Draft EIS presents a summary of the land use plan approved in August 2017 for existing uses under a Special Management Area (SMA) Use Permit Minor (SMA/2017-21). This approval includes a listing of conditions to address prior violations on the property, and permits and actions required for compliance. Actions are being completed by the owners to meet the set of compliance requirements under the approved SMA Minor Permit.

The themes for the rural center concept plan include the creation of a gathering place, a desired feature element which emerged from discussions with community members. The small-scale clustered buildings linked by meandering walkways and a central green landscaped area will provide a community gathering place for residents and visitors. Pathways will create pedestrian connectivity across the property from bike paths and bus stops along Kamehameha Highway to the Foodland grocery store, a frequent daily destination for area residents. The parking area is placed behind the buildings to deemphasize the vehicular environment. Pervious paving will be integrated, and permanent low impact development (LID) features such as bioswales, rain gardens, planter boxes, and sand filters will be installed to detain storm water on site and reduce and filter urban pollutants. An overview of the supporting elements of the property, such as walkways and infrastructure, are presented in *Chapter 2.0* of the Draft EIS; further details are provided in *Chapter 3.0*.

Sustainability is a core element reflected in the concept plan, and supports a core philosophy of North Shore residents. On-site solar energy production will occur with photovoltaic canopies erected over the parking spaces. Native plants will be used in the landscaping, and rain gardens will utilize storm water runoff thus reducing irrigation water demand. Building design will utilize shade elements to lower cooling demand, and integrate sustainable materials in the specifications. On-site recyclable materials collection will minimize solid waste production. Electric vehicle charging stations will be provided on-site. Locally raised food will be promoted in the food venues at the property. In short, the rural center seeks to become a living model example for sustainable principals.

4. Physical and Natural Environment

Chapter 3 of the Draft EIS evaluates environmental concerns that may have potential to affect the marine environment at the nearby Pūpūkea Beach Park and the Marine Life

Conservation District, as well as other environmental resources. Technical studies evaluate the proposed site plan design, and address drainage, surface runoff, groundwater and connections to the nearshore marine area, as well as provide existing marine water quality conditions and a description of the nearshore marine environment.

Through use of best management practices and current engineering compliant with the recently enacted Water Quality Rules (Hawai'i Administrative Rules §20-3), controls will be implemented to minimize effects to the marine environment.

5. Significance Criteria

The owners of the rural center support the preparation of a thorough Environmental Impact Statement. As discussed in Chapters 2.0 and 3.0 of the Draft EIS, the nearby presence of the public beach park and the sensitive resources at the Marine Life Conservation District, the EIS is a disclosure document that presents detail on the rural center project, the existing environmental conditions, and identifies potential impacts and mitigative measures. The impacts draw on the technical studies mentioned under #4, above.

6. Alternatives

The evaluation of alternatives in the Draft EIS Chapter 5.0 includes the No-Action Alternative, the Commercial Shopping Center Alternative, and the Alternative Development Timetable (Deferral). The No-Action Alternative is based on utilization of the subject properties in compliance with the existing SMA Minor Permit (SMA/2017-21). The Shopping Center Alternative is described as a viable project with a gross floor area of 46,000 SF, which is approximately 40 percent of the LUO development capacity under its B-1 commercial zoning. Such a center would provide a wider range of goods and services for residents of the surrounding neighborhoods and their visitors. Another alternative that is addressed is the Alternative for Deferred Action, which would delay the development of the rural center to some future date several years from now. Until future development, the property would continue operations under the existing SMA Minor Permit (SMA/2017-21).

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

cc: maxxephillips@gmail.com

Save Sunset Beach Coalition
DBA: Save Sharks Cove Coalition
P.O. Box 301
Haleiwa, HI 96712
savesharkscovecoalition@gmail.com

Ardis Shaw-Kim, (808) 768-8021, ashaw@honolulu.gov
Andrew Yani, (808) 779-5733, hanapohakullc@gmail.com
Jeff Overton, AICP LEED AP, (808) 523-5866, pupukea@g70.design

May 23, 2017

Re: Pūpūkea Rural Community Commercial Center EISPN Comments
regarding: TMK(s) (1) 5-9-011:068, 069, 070, 016

Dear Ms. Shaw-Kim, Mr. Yani, and Mr. Overton:

Since 2004, Friends Of Sharks Cove (FOSC) has followed a stated mission of Building Community Support For Protecting Sharks Cove" M.L.C.D. And To Preserve & Enhance The Environmental Integrity, Cultural Heritage, and Economic Well-Being Of Sunset Beach And The North Shore Of Oahu.

Our organization was expanded from the original Save Sunset Beach Coalition (incorporated in 1995) thirteen years ago in response to the serious threats to the community and marine ecosystem in these ahupua'a that arose from the Inappropriate proposed commercial development by the Honu Group on the same three parcels that are now the subject of this EISPN.

We [in conjunction with many North Shore residents] have since dedicated substantial volunteer time, and resources, in particular to protecting the State Marine Life Conservation District (MLCD) at Pūpūkea and stewarding Pūpūkea Beach Park.

Our organization is one of several organizations which are very concerned about the environmental and community impacts of the proposed Pūpūkea Rural Community Commercial Center, and the related existing illegal development of the property, and therefore provide the following comments on the EISPN:

Consulted Party

FOSC requests to be a formally consulted party in the EIS process going forward. Please provide all future documents and correspondence to FOSC Main email address (savesharkscovecoalition@gmail.com) and mail hard copies to FOSC mailing address indicated above.

Section 1.3 Proposed Action and Purpose of the EISPN

The North Shore Sustainable Communities Plan's (NSSCP) definition of Rural Community Commercial Center requires that development of these parcels be "small cluster" and "meet the needs of the surrounding residential communities."

The Concept Plan presented by Hanapohaku LLC (HPLLC) exceeds the "small cluster" level because the proposed development – through buildings, parking lots, roadways, and food trucks – takes up nearly all empty space on the three parcels. Sprawl is not small. The total proposed gross floor area is 30,000 (p. 10). But this number is a substantial under-estimate of the footprint because the EISPN does not provide information about the total footprint of the development from the proposed paved parking lots, paved roadways, drainage systems, and the food trucks (with associated tables, chairs, decks, walkways, and spillover equipment areas).

The Concept Plan violates the spirit and letter of the NSSCP because it does not cater to "the needs of the surrounding residential communities." Instead, HPLLC proposes a commercial center that is focused on attracting tourists and non-residential customers.

HPLLC acknowledges that Rural Community Commercial Centers "also attracts residents and visitors outside the immediate community." (P. 10.) This is a gross under-statement of (a) the focus of the HPLLC owners on the quick- turnover, drive-by tourism market as indicated by their past almost two years of "kapakahi" commercial activity with hundreds if not thousands of tourists a day (far outweighing resident customers), (b) the major impacts on the Pūpūkea community caused by the kind of development that will attract more tourism, more traffic, and more pollution to this small area, and (c) the conclusion that primarily catering to tourists is not consistent with the NSSCP, which focuses on the needs of "surrounding residential communities."

While HPLLC may claim that they will rent to local businesses with local owners, and cater to local residents, this is an illusory promise. HPLLC is not going to be bound to do any catering to local needs once the development is completed. All of the retail units can, and likely will be, flipped to high-traffic tourism-focused businesses on a dime.

2.1 Project Setting and Description

FOSC notes that most of the existing commercial uses on the H property are not legal because HPLLC does not have a Special Management Area (SMA) permit for the myriad of activities on the property that constitute development. The City and County of Honolulu Department of Planning & Permitting (DPP) has imposed fines for multiple violations of building codes and currently has HPLLC under an Notice of Order [C&C DPP Notice of Order: 2017/NOO-062] whereby HPLLC is accumulating fines of over $500 per day. This important information was omitted from this section and must be acknowledged in the DEIS, accurately and fully.

In describing the proposed action, p. 10, the EISPN says "[b]uildings will be set back from the highway to provide a large park-like green space, walkways, and bicycle parking." Although that sounds attractive, it is not what is indicated by the Concept Plan, which shows a narrow setback from the Highway and no "large park-like green space," but rather eight crammed in food trucks, which are not drawn realistically because the canopies, decks, service counters, fake grass, picnic tables, umbrellas, garbage bins, hoses, electrical lines, pipes, outdoor lighting, signage, outside equipment, and other "spillover" from each of these trucks as currently operating on the property is not indicated. The other "green area" is overshadowed and surrounded by what looks like six two-story buildings. This is hardly the "community gathering space" suggested by the EISPN.

3.1 Physical and Natural Environment

The EISPN notes the project's proximity to "the ocean located a distance of 500 feet across Kamehahema Highway." Oddly, given that FOSC has consistently raised numerous concerns about the impact of the current and future development on the Pūpūkea MLCD and Pūpūkea Beach Park for over a year with HPLLC, the EISPN does not mention the direct runoff connection to the MLCD, the importance of the MLCD itself, or the sensitive nature of the marine environment and beach park. A similar lack of appropriate focus and analysis of the sensitivity of this special marine protected area was a serious and fatal omission from the EA for the Honu project in 2004.

FOSC also has concerns that HPLLC will not conduct an adequate marine impact survey. FOSC [in conjunction with Mālama Pūpūkea-Waimea] has already objected in communications with G70 to HPLLC's decision to retain Steve Dollar as its marine consultant. FOSC now makes that objection formal. Given his track record of always working for developers, and other questionable work in the past, Dollar does not appear to be impartial, capable, or inclined to conduct an accurate and credible survey of the potential impacts of this project or alternatives on the MLCD.

4.3 Significance Criteria

FOSC does not agree with HPLLC's statement (p. 14) that "Due to substantial environmental improvements to these properties, the project is anticipated to result in negligible adverse effects and beneficial impacts to the environment." FOSC expects that the project will have major, long-term, and irreversible impacts to the MLCD, the Beach Park, and to litter, traffic, pedestrian hazard, noise, aesthetic, and the view planes. These impacts are not offset by proposed amenities such as a EV charging station for HPLLC's owner or solar panels that offset the owner's electrical bill for substantial new consumptive uses on the property. The environment cannot be traded off or repaired in this manner like a "band-aid over grenade wound".

Indeed, most likely because G70 recognizes that there are significant potential impacts, G70 has made the wise decision advise HPLLC to go "direct to the EIS" instead of claiming that the impacts can be mitigated down to the EA/FONSI level. However, the "no net negative impact" language of the EISPN does not match the fact that this is an EISPN and is therefore this section is misleading.

5.1 No Action Alternative

The No Action Alternative is incorrectly framed. This section incorrectly states that there is an "existing SMA Minor permit." (p. 17) No such permit exists for uses other than the pre-existing (pre-HPLLC-purchase) buildings. The development currently on the property that is post-"baseline" (post-purchase by HPLLC) does not have a SMA permit. This needs to be stated correctly.

If HPLLC contends that "no action" refers to only those current uses with an SMA permit, then HPLLC must take the property back to the baseline condition. This means removing all of the food trucks and related development on the property. In other words, No Action does not mean "leave all the current food trucks and mess" on the property. Under HEPA, No Action cannot mean an illegal action. Because HPLLC's current development (post-purchase) is illegal due to the lack of an SMA, No Action means taking the property back to the pre-purchase baseline conditions.

5.2 Commercial Shopping Center Alternative

HPLLC describes only one alternative, a Commercial Shopping Center, and this alternative is a false one because it is not feasible under the NSSCP, given that (as described on p. 6) the NSSCP limits development on these lots to a "small cluster" and a development that "meet the needs of the surrounding residential communities." This kind of straw-person alternative is not reasonable.

HPLLC should come up with alternatives that conform to the NSSCP and that involve LESS not more development than the proposed by the Concept Plan. These alternatives could include conservation of a substantial portion of the property and development that truly focuses on serving the needs of the immediate residential community.

Sincerely,

Ian Anderson, President
Save Sunset Beach Coalition
DBA: Save Sharks Cove Coalition
P.O. Box 301 Haleiwa, HI 96712
savehaleiwabeachpark.org@gmail.com

President: Ian Anderson / Vice President: Cora Sanchez / Treasurer: William Howes

Sharks Cove Coalition

is a network of community groups, neighbors, and individuals united

to protect and enhance the ecological integrity, natural beauty, and low-impact recreational uses of Sharks Cove, the jewel of Pūpūkea Beach Park and the Pūpūkea Marine Life Conservation District, for the benefit of local residents, visitors, and future generations.

Our statement is that Sharks Cove Coalition seeks to ensure that all federal, state, and county laws including the 1978 Unilateral Agreement are followed by **Hanapohaku LLC**, the owners developing the three contiguous B-1 "neighborhood commercial" properties on Kamehameha Highway and Pahoe Road, mauka of Sharks Cove.

The Coalition *does not oppose* current or future commercial uses or users on the property that fit the B-1 "neighborhood commercial" zoning, which is designed to serve the "daily retail and other business needs of the surrounding population," so long as:

(1) **proper planning and permitting processes** that protect the community and the environment are followed, starting now;

(2) **adequate environmental review** is completed prior to any further development to fully assess the **potentially significant and cumulative impacts** on the community, culture, and environment, especially Sharks Cove, the Pūpūkea Beach Park, and the Pūpūkea Marine Life Conservation District MLCD, including: litter, sanitation, surface and subsurface runoff, water or ocean contamination, traffic, pedestrian safety, noise, odors, and overuse of protected areas; and

(3) the owners engage immediately in **good faith hearings, presentations, and discussions** with the residents and community concerned about and affected by the present and future development.

For more information, go to: savesharkscove.org

- **Mālama Pūpūkea-Waimea**
- **Save Sunset Beach Coalition**
- **Friends of Sharks Cove**
- **Sierra Club – O'ahu Group**
- **Surfrider – O'ahu**
- **Defend O'ahu Coalition**
- **Hawai'i's Thousand Friends**
- **Life of the Land**
- **Keep the North Shore Country**
- **Pahoe Road Residents Hui**
- **Sunset Beach Community Association**
- **KAHEA – The Hawaiian-Environmental Alliance**

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Ian Anderson, President
Save Sunset Beach Coalition
P.O. Box 301
Haleiwa, HI 96712

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1) 5-9-011:068, 069, 070, 016
Pūpūkea, O'ahu, Hawai'i

Dear Mr. Anderson:

Thank you for your comment letter dated May 11, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments.

1. **Consulted Party**

We thank you for your input to the EIS process and welcome your involvement. This letter serves as a response to your EISPN comment letter, and we will notify you when the Draft EIS and Final EIS are available for review. Please contact our office if you have questions or other issues you wish to be addressed in this process.

2. **Proposed Action and Project Purpose**

The elements of the proposed action are described in Chapter 2.0 of the Draft EIS. The future project emphasizes consistency with the North Shore Sustainable Communities Plan (SCP) in the creation of this Rural Community Commercial Center. In keeping with the guidance of the SCP, the scale of development is approximately 25 percent of the allowable commercial floor area for the subject properties. The planned gross building floor area of 30,000 square feet (SF) will yield a net leasable floor area of approximately 27,500 SF. This reflects sensitivity to establishing an appropriate scale for this rural center.

The center will offer many of the goods and services which are not provided locally, such as medical services, pharmacy and banking services. The committed tenants for the rural center reflect an offering of goods and services to the surrounding community that would otherwise require vehicle trips to commercial centers in Hale'iwa or Central O'ahu. The project will positively impact economic opportunities by adding business opportunity for Hawai'i entrepreneurs, and by adding jobs within the region. In turn, area residents that work at the center can avoid long commutes to job centers in urban areas of O'ahu. Many of these businesses are Hawai'i-based, and some of these businesses are owned by North Shore residents.

Patronage of the commercial venues by local residents is a primary emphasis. However, as witnessed by the patronage of the Foodland Pūpūkea store, many are attracted to the area by Sharks Cove, Pūpūkea Beach Park, and the Marine Life Conservation District. The rural center must also serve the needs of these visitors to the area, consisting of other O'ahu residents and tourists.

3. **Project Setting and Description**

The Draft EIS presents a summary of the land use plan approved in August 2017 for existing uses under a Special Management Area (SMA) Use Permit Minor (SMA/2017-21). This approval includes a listing of conditions to address prior violations on the property, and permits and actions required for compliance. Actions are being completed by the owners to meet the set of compliance requirements under the approved SMA Minor Permit.

The themes for the rural center concept plan include the creation of a gathering place, a desired feature element which emerged from discussions with community members. The small-scale clustered buildings linked by meandering walkways and a central green landscaped area will provide a community gathering place for residents and visitors. Pathways will create pedestrian connectivity across the property from bike paths and bus stops along Kamehameha Highway to the Foodland grocery store, a frequent daily destination for area residents. The parking area is placed behind the buildings to deemphasize the vehicular environment. Pervious paving will be integrated, and permanent low impact development (LID) features such as bioswales, rain gardens, planter boxes, and sand filters will be installed to detain storm water on site and reduce and filter urban pollutants. An overview of the supporting elements of the property, such as walkways and infrastructure, are presented in Chapter 2.0 of the Draft EIS; further details are provided in Chapter 3.0.

Sustainability is a core element reflected in the concept plan, and supports a core philosophy of North Shore residents. On-site solar energy production will occur with photovoltaic canopies erected over the parking spaces. Native plants will be used in the landscaping, and rain gardens will utilize storm water runoff thus reducing irrigation water demand. Building design will utilize shade elements to lower cooling demand, and integrate sustainable materials in the specifications. On-site recyclable materials collection will minimize solid waste production. Electric vehicle charging stations will be provided on-site. Locally raised food will be promoted in the food venues at the property. In short, the rural center seeks to become a living model example for sustainable principals.

4. **Physical and Natural Environment**

Chapter 3 of the Draft EIS evaluates environmental concerns that may have potential to affect the marine environment at the nearby Pūpūkea Beach Park and the Marine Life Conservation District, as well as other environmental resources. Technical studies evaluate the proposed site plan design, and address drainage, surface runoff, groundwater and connections to the nearshore marine area, as well as provide existing marine water quality conditions and a description of the nearshore marine environment. Through use of best

management practices and current engineering compliant with the recently enacted Water Quality Rules (Hawai'i Administrative Rules §20-3), controls will be implemented to minimize effects to the marine environment. No significant impacts are anticipated to result from the rural center.

5. Significance Criteria

The owners of the rural center support the preparation of a thorough Environmental Impact Statement. As discussed in Chapters 2.0 and 3.0 of the Draft EIS, the nearby presence of the public beach park and the sensitive resources at the Marine Life Conservation District, the Draft EIS is a disclosure document that presents detail on the rural center project, the existing environmental conditions, and identifies potential impacts and mitigative measures. The impacts draw on the technical studies mentioned under #4, above.

6. Alternatives

The evaluation of alternatives in the Draft EIS Chapter 5.0 includes the No-Action Alternative, the Commercial Shopping Center Alternative, and the Alternative Development Timetable (Deferral). The No-Action Alternative is based on utilization of the subject properties in compliance with the existing SMA Minor Permit (SMA/2017-21). The Shopping Center Alternative is described as a viable project with a gross floor area of 46,000 SF, which is approximately 40% of the LUO development capacity under its B-1 commercial zoning. Such a center would provide a wider range of goods and services for residents of the surrounding neighborhoods and their visitors. Another alternative that is addressed is the Alternative for Deferred Action, which would delay the development of the rural center to some future date several years from now. Until future development, the property would continue operations under the existing SMA Minor Permit (SMA/2017-21).

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

cc: savesharkscovecoalition@gmail.com

PRIVATE ENTITIES

From: Thielst, John <Thielst@coffman.com>
Sent: Monday, May 22, 2017 2:58 PM
To: ashaw@honolulu.gov; pupukea
Cc: Maxx Phillips; Denise Antolini; Thielst, John
Subject: Pahoe Rd Resident Comments - Hanapohaku Sharks Cove Development Interim Plan & Pupukea EIS Prep

Attention: Jeff Overton

Firm: Group 70 International, Inc.

Subject: Comments on the:
- Hanapohaku Sharks Cove Development Interim Plan
- Pupukea EIS Prep

From: Pahoe Road Residents Hui

Hanapohaku Sharks Cove Development Interim Plan:

1. Does not comply with the DPP letter dated May 2, 2016 Revocation of Minor Special management Area Use Permit. Last paragraph states " Therefore. by this letter, the permits identified by File Numbers 2015/SMA-24. 2015/SMA-47 and 2015/SMA-61, **are hereby revoked**. Consequently, **all improvements which were authorized by these approvals must be removed, and the area restored to its pre-approval condition**. Any outstanding violations associated with those approvals must also be resolved (i.e., grading, etc.). As requested, we are also closing the application received on March 3, 2016 (File No. 2016/ELOG-511) for a Minor SMP for the Tax Map Key 5-9-11: 70."
   That is over a year ago and there has been no change to activity or removal of said improvements.

2. Until the community trust is regained and above is met to the letter of the law, development should be put on hold.

3. Interim plan is still much too dense for the area and is nothing less then what is in place now.

4. Currently and with interim plan traffic congestion, Pedestrian safety in the immediate area will remain the same, and build up mores so depending on time of year and season for tourism. All of which have significantly affected immediate local neighbors some of who have lived in the same spot for 60 years.

5. No noise or lighting attenuation has been addressed currently or in interim plan. Both the noise and increased lighting have significantly affected immediate local neighbors some of who have lived in the same spot for 60 years.

6. Interim plan should be scaled back to less than three food trucks at a maximum, with all remaining activity's significantly curtailed

7. Current set back need to be enlarged and currently and with interim plan significantly. Needs to be a clear view plane looking both North and South in front on Maki side of property mauka side of Kam Hwy for entrance to and from Pahoe road and Foodland parking lot

8. Any food truck that remains must be mobile and comply with all rules and regulations for DOH for food trucks

9. Security to ensure cars do not park long Kam hwy in no parking area from entrance to both side of Pahoe rd.

10. Plan needs secured fence along Pahoe Rd with no access.

11. No turning lanes of any kind are addressed in this plan and needs to be.

12. Assurances and a commitment the interim plan does not become the final plan! How will this be guaranteed?

13. The impact to the environment or the study that is to be conducted, will only be valid or accurate if the developers/business owners are realistic about their numbers regarding their projected customer traffic.
    For example: according to the Hanapohaku SMA minor permit application, currently, "the activity associated with each food truck varies 30-50 customers per day" However, according to declarations on Yelp on different days made by the owner of The Elephant Truck, they "typically cook over 250 dishes within 3 hours, so that's well-over one dish per minute"....."we were extremely busy yesterday and cooked for over 500 people".....
    That amount of customers for just that one food truck exceeds their estimate for 8 food trucks total. This is not just unrealistic, but wildly unrealistic. Can their waste water really handle 10x their projected estimate? We are sure the parking will not handle that many people.
    What other elements/facilities of the project are contingent on those numbers

Pupukea EIS Prep:

1. Design of new and final plan is still much too dense for the local rural areas and especially being directly across the street form a marine sanctuary.

2. Haleiwa is the business hub of the area and should remain that way as the infrastructure already in place. There is no infrastructure in place in the Sharks Cove area that can functionally and actually hand the load that this development would put on it and the surrounding area even with its own waste water treatment facility.

3. This development will serve more the visitors then the local community as is the agreement that is in the stainable area plan.

4. The North shore is a rural area and does not need a development of this size and scale to serve the local residents as is required by the original master plan.

5. This size development will significantly increase the noise, lighting and trash debris in the local area.

6. Significate traffic congestion, Pedestrian safety in the immediate area will increase, and build up mores so depending on time of year and season for tourism.

7. Two story business buildings are not something that belongs along Kam Hwy directly across from Sharks cove.

8. Although the local community might get a meal at a food truck every once in a while, 90% of the customers, now & in the future plan are & will be tourists

9. 5.1 No Action Alternative "Maintain the property in its existing condition, with limited allowed commercial uses per the existing SMA minor permit....."
   Why are they referring to the Elephant Shack as a dentist office? If they are calling it a dentist office and not recognizing/admitting it's been converted to a commercial kitchen, are they accurately showing building costs and permits? How can they misrepresent as fact in their official declaration of plans in the EIS draft.

Thank you,

John W. Thielst
58-081 Pahoe Rd
Haleiwa HI 96712
thielst@coffman.com
14 year Pahoe Rd owner & resident
TMK 5-9-11-066

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. John Thielst
Pāhoe Road Residents Hui
58-081 Pāhoe Road
Haleiwa, HI 96712

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Thielst:

Thank you for your comment letter dated May 22, 2017. The following responses are offered to your comments concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). As allowed under Hawaiʻi Administrative Rules §11-200 Environmental Impact Statement Rules, the draft EIS shall include reproductions of all substantive comments and responses made during the consultation process. The following responses are restricted to the comments in your letter specific to the EIS Preparation Notice.

1. **Design**

The elements of the proposed action are described in *Chapter 2.0* of the Draft EIS. The future project emphasizes consistency with the North Shore Sustainable Communities Plan (SCP) in the creation of this Rural Community Commercial Center. In keeping with the guidance of the SCP, the scale of development is approximately 25 percent of the allowable commercial floor area for the subject properties. The planned gross building floor area of 30,000 square feet (SF) will yield a net leasable floor area of approximately 27,500 SF. This reflects sensitivity to establishing an appropriate scale for this rural center.

2. **Infrastructure**

Because City sewer systems are limited to a small subdivision in the Waialua area, nearly all North Shore businesses and residents utilize on-site disposal systems. *Section 3.5 Groundwater* in the EIS identifies more than 500 wastewater systems upgradient of the project site, including 279 cesspools and 159 aerobic, septic and soil treatment systems. A conservative estimate of total wastewater volume from the residential area mauka of the site is greater than 100,000 gallons per day. The existing groundwater quality conditions at the site reflect the inputs from individual wastewater disposal systems serving the Pūpūkea and Sunset Beach community.

The site lies outside of the Honolulu Board of Water Supply No Pass zone, where installation of waste treatment facilities is allowed. An existing on-site individual wastewater system was permitted by the State of Hawai'i Department of Health (DOH) Wastewater Branch (WWB). The project includes removal and replacement of the existing system, which will require review and approval from DOH WWB. *Section 3.5 Groundwater* of the EIS presents an evaluation of the slight increase of nutrients anticipated from the new wastewater system compared to the existing nutrients from the upgradient residential wastewater systems and other area sources. *Section 3.7 Marine Environment* evaluates the impact of the small nutrient increase from the project on the nearshore environment.

3. Community Served

The center will offer many of the goods and services which are not provided locally, such as medical services, pharmacy and banking services. The committed tenants for the rural center reflect an offering of goods and services to the surrounding community that would otherwise require vehicle trips to commercial centers in Hale'iwa or Central O'ahu. The project will positively impact economic opportunities by adding business opportunity for Hawai'i entrepreneurs, and by adding jobs within the region.

Patronage of the commercial venues by local residents is a primary emphasis. However, as witnessed by the patronage of the Foodland Pūpūkea store, many are attracted to the area by Sharks Cove, Pūpūkea Beach Park, and the Marine Life Conservation District. The rural center must also serve the needs of these visitors to the area, consisting of other O'ahu residents and tourists.

4. Rural Area

Please see information provided under #1 above. The elements of the proposed action are described in *Chapter 2.0* of the Draft EIS. The future project emphasizes consistency with the North Shore Sustainable Communities Plan (SCP), and will occupy the area designated in the North Shore SCP for a rural community commercial retail center and is consistent with the policy of "infill." The three parcels to be developed, along with the existing Foodland grocery store, are commercially-zoned parcels zoned B-1 Neighborhood Business District. The North Shore SCP guidelines for a Rural Community Commercial Center limits the center to "existing zoned areas between Pūpūkea Road and Pāhoe Road that currently serve the commercial needs of residents and visitors." Additional land use policies and guidelines documented in the North Shore SCP supporting a rural center are shown in the EIS *Chapter 2* and *Chapter 4*.

5. Noise and Lighting

Section 3.15 Noise in the EIS addresses potential noise, as well as mitigation measures to minimize noise; *Section 3.17 Visual Environment* addresses night lighting. The project design is sensitive to the neighbors along Pāhoe Road.

6. Traffic and Pedestrian Safety

A Transportation Impact Analysis Report (TIAR) summarizes the evaluation potential impact from traffic related to the proposed project. The TIAR is included in *Appendix F* of the Draft EIS. A discussion on traffic, connectivity with existing multi-modal pathways in the area, and proposed improvements for the area are included in *Section 3.13* of the Draft EIS.

7. Building Scale

The design of the Rural Community Commercial Center will be consistent with the surrounding North Shore country setting. Under the North Shore SCP, rural community commercial centers are smaller in scale than a typical "Country Town," incorporating one- and two-story building heights and clustered rather than spread along the highway. The architectural design will reflect the area's rural character and surrounding beach homes that recall classic plantation-style architecture (*Section 2.4* of the EIS).

8. Mix of Patrons

Please see the response to #3, previous.

9. Alternatives

The Draft EIS presents the current uses of the site in Chapter 2.0.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

INDIVIDUALS

From: Alessandra Bezzi <alessandrabezzi@hotmail.com>
Sent: Wednesday, May 31, 2017 3:47 PM
To: ashaw@honolulu.gov; hanapohakullc@gmail.com; pupukea
Subject: Hanapohaku amazing project

Aloha!

I just would like to say I feel words regarding Hanapohaku amazing project.
I live on the sharks cove area and enjoy taking my family to have a meal in one of the food trucks over there, enjoying the beautiful view, tasty food next home, friendly staff, and so forth.
It would be super hard after a work day if my family and I had to go until Mililani just to have a relaxing meal at the end of the day or during the weekends.
So, I would like to let you know that this project is amazing and it is also a must have project to whom live there.

Thank you for your time and attention,

Alessandra Bezzi
(808)721-4398

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Alessandra Bezzi
via email: alessandrabezzi@hotmail.com

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Bezzi:

Thank you for your comment letter dated May 31, concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH).

We acknowledge your support for the project.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

PUPUKEA RURAL COMMUNITY COMMERCIAL CENTER

Environmental Impact Statement Preparation Notice

Hanapohaku LLC is proposing to develop a rural community commercial center in Pupukea, Oahu to provide a mix of goods and services to residents and visitors of the community. The property is in the Special Management Area and this EISPN is being prepared pursuant to Chapter 25-3.3, Revised Ordinances of Honolulu, related to procedural guidelines and assessment requirements. The Property is classified as Urban in the State Land Use Designation, is zoned in the B-1 Neighborhood Business District established by the City and County of Honolulu Zoning Maps, and is designated for a Rural Community Commercial Center in the North Shore Sustainable Communities Plan. The existing Foodland grocery store is included in the center. Three new buildings will be constructed, one to two stories in height, totaling approximately 30,000 square feet. The buildings will be set back from Kamehameha Highway with a park-like green space, walkways, and bicycle parking facing Kamehameha Highway. Mobile food trucks are also proposed. Supporting infrastructure will include driveways, parking with solar panel canopies, drainage, water supply, and wastewater treatment facility.

COMMENTS ON EIS PREPARATION NOTICE

Submitted comments will be published in the Draft EIS

Name: CHIP HARTMAN

Organization: SELF

Address: 59-208 B KAM. HWY HALEIWA 96712

Phone: 638 7210 Email:

Comments: I FEEL THE PROJECT IS TOO LARGE FOR OUR AREA / THAT LOCATION WITH BEACH PARK AND FOODLAND ALSO DRAWING SO MANY TO THAT LOCATION. HANAPOHAKU'S PROPOSAL FOR A COMMUNITY CENTER IS SIMILAR TO KAMEHAMEAN'S HALEIWA "IMPROVEMENTS", MEANING THE LOCAL POPULACE HAS LOST THEIR TOWN AND AVOID GOING MORE OFTEN THAN NOT. LET'S ALL BE HONEST AND SAY THAT THESE DEVELOPEMENTS ARE ABOUT $$$ AND NOT ABOUT KEEPING IT A COMMUNITY.

TRAFFIC CONJESTION, PEDESTRIANS, PARKING, WASTE WATER, WASTE, LITTER, LIGHTING AT NIGHT, NOISE AND LUNCH WAGONS ARE ALL CONCERNS NEEDING TO BE FIXED BEFORE MOVING AHEAD.

MAHALO

REQUESTED – Submit Tonight **DEADLINE: Email or US Mail - Postmarked by May 23, 2017 to the following:**

City/County Honolulu, Dept. of Planning and Permitting, 650 South King St, 7th Fl, Honolulu, HI 96816
Ardis Shaw-Kim, 768-8021, ashaw@honolulu.gov

G70, 925 Bethel Street, 5th Floor, Honolulu, HI 96813
Jeff Overton (808) 523-5866 Pupukea@g70.design

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Chip Hartman
59-208B Kamehameha Highway
Hale'iwa, HI 96712

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Hartman:

Thank you for your comment letter concerning the concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH).

The proposed project is described in *Chapter 2.0* of the Draft EIS, and its scale is consistent with the community's vision for the area, as documented in the *North Shore Sustainable Communities Plan* (SCP). The parcels to be used for the rural center are specifically designated in the North Shore SCP for a Rural Community Commercial Center, as they have been used for commercial purposes for decades and are appropriately zoned B-1 Neighborhood Business District. In keeping with the guidance of the SCP, the scale of development is approximately 25 percent of the allowable commercial floor area under the City and County of Honolulu Land Use Ordinance. Chapter 2.0 and *Section 3.10 Land Use* of the EIS provide additional information.

We acknowledge your concerns regarding traffic and pedestrian safety, parking, solid waste and wastewater, night lighting, noise, and food trucks. *Chapter 3.0* of the Draft EIS provides an evaluation of each environmental issue along with appropriate mitigation measures for foreseeable impacts.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

PŪPŪKEA RURAL COMMUNITY COMMERCIAL CENTER

Environmental Impact Statement Preparation Notice

Hanapohaku LLC is proposing to develop a rural community commercial center in Pupukea, Oahu to provide a mix of goods and services to residents and visitors of the community. The property is in the Special Management Area and this EISPN is being prepared pursuant to Chapter 25-3.3, Revised Ordinances of Honolulu, related to procedural guidelines and assessment requirements. The Property is classified as Urban in the State Land Use Designation, is zoned in the B-1 Neighborhood Business District established by the City and County of Honolulu Zoning Maps, and is designated for a Rural Community Commercial Center in the North Shore Sustainable Communities Plan. The existing Foodland grocery store is included in the center. Three new buildings will be constructed, one to two stories in height, totaling approximately 30,000 square feet. The buildings will be set back from Kamehameha Highway with a park-like green space, walkways, and bicycle parking facing Kamehameha Highway. Mobile food trucks are also proposed. Supporting infrastructure will include driveways, parking with solar panel canopies, drainage, water supply, and wastewater treatment facility.

COMMENTS ON EIS PREPARATION NOTICE

Submitted comments will be published in the Draft EIS

Name: Danielle Filmer

Organization: ~~[illegible]~~ resident

Address: 56-423 Lelehi St Kahuku HI 96731

Phone: 808-312-2130 Email: dhannig3@hotmail.com

Comments: I support this I think it will be good for the community providing jobs for residents and good for tursim. please pass this.

REQUESTED – Submit Tonight **DEADLINE: Email or US Mail - Postmarked by May 23, 2017 to the following:**

City/County Honolulu, Dept. of Planning and Permitting, 650 South King St, 7th Fl, Honolulu, HI 96816
Ardis Shaw-Kim, 768-8021, ashaw@honolulu.gov

G70, 925 Bethel Street, 5th Floor, Honolulu, HI 96813
Jeff Overton (808) 523-5866, Pupukea@g70.design

From: danielle hannig <dhannig3@hotmail.com>
Sent: Wednesday, May 31, 2017 3:35 PM
To: ashaw@honolulu.gov; hanapohakullc@gmail.com; pupukea
Subject: Pūpūkea Rural Community Commercial Center EISPN Comments

Hello,
Just writing in to express my interest in the Pupukea Community Commercial center. I think it is great. I enjoy all of what is there now. There isn't much on the north shore to choose from so these trucks are nice to have and great variety of foods to choose from. It is so convenient after getting out of the water at sharks cove to walk over and eat without having to pack food for a day at the beach. So good for locals that need employment. Close to home and not open too late for the younger kids that want to work. Please consider granting the permit for these so we can all continue to enjoy these great businesses.

Thank you!!

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Danielle Hannig Fullmer
via email: Dhannig3@hotmail.com

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Hannig Fullmer:

Thank you for the comments provided during a May 17, 2017 meeting and your letter dated May 31, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu. This response addresses both.

We acknowledge your interest in the Pūpūkea Rural Community Commercial Center and your support for food trucks in the area for food options and local employment.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

COMMENTS AND QUESTIONS ON EIS PREPARATION NOTICE FOR
"PUPUKEA RURAL COMMUNITY COMMERCIAL CENTER"

Overview

Hanapohaku LLC purchased a 2.7 acre lot at Sharks Cove in 2014 with plans to develop it into a commercial center. **They should have applied for appropriate permits and performed the necessary evaluations before they made any changes,** as required by the zoning and permitting rules and regulations that they were aware of.

They did not. Instead, they quickly turned the lot from a quiet, peaceful little area into a gaudy food truck carnival that is the loudest and most visible tourist trap all the way from Kahuku to Haleiwa. They did get some minor permits, but these were obviously insufficient and were subsequently withdrawn.

Why did Hanapohaku decide it was "easier to ask forgiveness than permission?" Perhaps it was because their lot lies within a Special Management Area right across the road from an important and sensitive marine conservation district that requires especially careful (and expensive) development. Or perhaps it was because a previous plan to develop the same lot had failed due to widespread community opposition and environmental concerns.

Whatever the reason, the current situation is clear: Hanapohaku continues to carry out illegal operations at Sharks Cove, has publicly stated that it has no intent of complying with DPP's directive to restore the area, and has not paid any of its fines.

And now they want permission for **more** development?

I realize that the DPP cannot send in bulldozers to rip down the illegal development at Sharks Cove, nor can they seize Hanapohaku's assets to pay fines, nor can they throw the owners or their consultants in jail for ignoring the law.

But DPP can do one very simple thing: **Please inform Hanapohaku that they cannot even begin to collect data for their EIS, much less apply for a major permit, until they are in full compliance with the law and have paid all fines.**

Once the area has been restored, the proper minor permits obtained, and the fines paid, it will be time to think about larger plans.

In addition to this over-riding concern, I have additional questions and comments pertaining to the initial development plan. Many of these require baseline data collection that should be started before a permit application is even considered.

1. Function of the Development

The North Shore Sustainable Communities Plane defines a rural community-based commercial center as one that "meet the needs of the surrounding residential communities." **A requirement for considering an SMA permit should be that the development will serve residents. This will require consideration of the precise retail activities planned and collecting external data on the likely customers.**

Current Questions: What percentage of customers at the site are expected to be residents? How does this break down in terms of each retail activity planned? What data sources and methods are you using for these projections?

Future Questions: What guarantee is there that the proposed retail activities are what will actually happen in the area? If a tenant leaves, what will be the requirements for the replacement? Does DPP currently enforce such regulations?

2. Congestion
The number of visitors to the site is of major importance for traffic hindrance by pedestrian crossings, potential pollution from toilet use, etc. **A requirement for considering an SMA permit should be an accurate projection of congestion caused by the development.**

Questions: What number of customers are expected to visit the site? How was this number determined, and for what specific times periods? How does this compare to the current number of visitors?

3. Traffic Control
Traffic is one of the most serious concerns of north shore resident. **A requirement for considering an SMA major permit should be accurate, data-based projections of traffic.**

Questions: What are the (1) total number of vehicles; (2) throughput; (3) time headway; (4) average and maximal delay period expected at the site of the development? How are these numbers determined and modeled, and for what specific times periods?

4. Environmental Concerns
There is considerable debate among marine conservationists about the appropriate means to measure and predict the environmental impacts of developments such as the prosed Sharks Cove commercial center that will exist and probably grow for many years past the immediate permitting period. For example, while the immediate effects of the development on water quality might be quantifiable, what about the long term effects of years and decades of car exhaust, runoff from commercial areas, etc etc?

Given Hanapohaku's recent history of ignoring the law, there is justifiable concern that they will select environmental evaluators that place more value of giving a "clean" recommendation than on those that have more long-term concerns and approaches.

Questions: Who will choose the evaluators for each section of the SMA permit? Would Hanapohaku allow environmental organizations to be involved in the process? Would Hanapohaku agree to accept recommendations from an outside, objectively chosen experts?

I hope these comments and questions will be useful as the DPP decides whether to consider Hanapohaku's application to permanently change the character of the rural north shore of O'ahu.

Sincerely yours,
Dean Hamer
Haleiwa, Hawai'i
email: deanhamer@aol.com

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Dean Hamer
via email: deanhamer@aol.com

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Hamer:

Thank you for your comment letter dated May 11, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments.

The Draft EIS presents a summary of the land use plan approved in August 2017 for existing uses under a Special Management Area (SMA) Use Permit Minor (SMA/2017-21). This approval includes a listing of conditions to address prior violations on the property, and permits and actions required for compliance. Actions are being completed by the owners to meet the set of compliance requirements under the approved SMA Minor Permit.

1. **Function of the Development**

Chapter 2.0 of the Draft EIS includes the specific language from the North Shore Sustainable Communities Plan (SCP) in its summary of policies and guidelines related to a Rural Community Commercial Center:

- Range of Goods & Services to Meet the Needs of Surrounding Residential Communities
- Center attracts Visitors & Residents from Outside the Immediate Community
- Commercial Establishments may Include: Grocery Stores, Sundries Stores, Restaurants, and Other Services and Shops Catering to Residents and Visitors

The center will offer many of the goods and services which are not provided locally, such as medical services, pharmacy and banking services. The committed tenants for the rural center reflect an offering of goods and services to the surrounding community that would otherwise require vehicle trips to commercial centers in Haleʻiwa or Central Oʻahu. The project will positively impact economic opportunities by adding business opportunity for Hawaiʻi entrepreneurs, and by adding jobs within the region. In turn, area residents that work at the center can avoid long commutes to job centers in urban areas of Oʻahu. Many of these businesses are Hawaiʻi-based, and some of these businesses are owned by North Shore residents.

Patronage of the commercial venues by local residents is a primary emphasis. However, as witnessed by the patronage of the Foodland Pūpūkea store, many are attracted to the area by Sharks Cove, Pūpūkea Beach Park, and the Marine Life Conservation District. The rural center must also serve the needs of these visitors to the area, consisting of other O'ahu residents and tourists.

2. Congestion and Traffic Control

Technical studies conducted for the EIS included an analysis of existing traffic in the area, and projected additional trips as a result of the rural center. *Section 3.13* of the Draft EIS summarizes the study's findings, and makes recommendations to improve flow in and out of the center and along Kamehameha Highway, as well as increase pedestrian safety. No significant impacts are anticipated as a result of the rural center's construction. Details of methods and data collected are contained in *Appendix F, Transportation Impact Analysis Report*.

3. Environmental Concerns

Chapter 3 of the Draft EIS evaluates environmental concerns that may have potential to affect the marine environment at the nearby Pūpūkea Beach Park and the Marine Life Conservation District, as well as other environmental resources. Technical studies evaluate the proposed site plan design, and address drainage, surface runoff, groundwater and connections to the nearshore marine area, as well as provide existing marine water quality conditions and a description of the nearshore marine environment. Through use of best management practices and current engineering compliant with the recently enacted Water Quality Rules (Hawai'i Administrative Rules §20-3), controls will be implemented to minimize effects to the marine environment.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Devon Dailey <hawaiipolo@gmail.com>
Sent: Thursday, May 11, 2017 11:20 AM
To: pupukea; ashaw@honolulu.gov
Cc: Michael Dailey; Mariah Dailey; Mike Gallagher[redacted]; Becca Dailey
Subject: Pupukea's descent into Kapolei.

The north shore community cannot afford to continue to expand into a larger and larger strip mall, the reason tourists come to this area is to get away from the overbuilt nature of the waikiki tourist trap that we all know too well. The North Shore is one of the last nice pieces of this island, our remaining 'un-overbuilt' areas need to be protected before more of our visitors bypass oahu entirely for a slice of 'old hawaii' on the outer-islands. The slow rot of our agricultural and residential areas into steadily higher-density use needs to stop. The population, growth, and use of these areas need to be controlled by the residents and their representatives, I don't drive past Haleiwa anymore for the traffic, imagine how many more locals will give up on the sunset side after this goes in (and the other 8 projects in line after that). When's the rail station going to go in connecting this to ala moana? The infinity growth model for the north shore economy isn't tenable even in the medium term.

Zoning needs to be better enforced.

It appears the fines for repeated non-compliance aren't high enough.

Aloha, Devon Dailey, north shore resident for life.

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Devon Dailey
via email: hawaiipolo@gmail.com

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Dailey:

Thank you for your comment letter dated May 11, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments.

The proposed project is described in *Chapter 2.0* of the Draft EIS, and its scale is consistent with the community's vision for the area as documented in the *North Shore Sustainable Communities Plan* (SCP). The parcels to be used for the rural center are specifically designated in the North Shore SCP for a Rural Community Commercial Center, as they have been used for commercial purposes for decades and are appropriately zoned B-1 Neighborhood Business District. In keeping with the guidance of the SCP, the scale of development is approximately 25 percent of the allowable commercial floor area under the City and County of Honolulu Land Use Ordinance.

The center will offer many of the goods and services which are not provided locally, such as medical services, pharmacy and banking services. The committed tenants for the rural center reflect an offering of goods and services to the surrounding community that would otherwise require vehicle trips to commercial centers in Hale'iwa or Central O'ahu. The project will positively impact economic opportunities by adding business opportunity for Hawai'i entrepreneurs, and by adding jobs within the region. In turn, area residents that work at the center can avoid long commutes to job centers in urban areas of O'ahu.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

PŪPŪKEA RURAL COMMUNITY COMMERCIAL CENTER

Environmental Impact Statement Preparation Notice

Hanapohaku LLC is proposing to develop a rural community commercial center in Pupukea, Oahu to provide a mix of goods and services to residents and visitors of the community. The property is in the Special Management Area and this EISPN is being prepared pursuant to Chapter 25-3.3, Revised Ordinances of Honolulu, related to procedural guidelines and assessment requirements. The Property is classified as Urban in the State Land Use Designation, is zoned in the B-1 Neighborhood Business District established by the City and County of Honolulu Zoning Maps, and is designated for a Rural Community Commercial Center in the North Shore Sustainable Communities Plan. The existing Foodland grocery store is included in the center. Three new buildings will be constructed, one to two stories in height, totaling approximately 30,000 square feet. The buildings will be set back from Kamehameha Highway with a park-like green space, walkways, and bicycle parking facing Kamehameha Highway. Mobile food trucks are also proposed. Supporting infrastructure will include driveways, parking with solar panel canopies, drainage, water supply, and wastewater treatment facility.

COMMENTS ON EIS PREPARATION NOTICE

Submitted comments will be published in the Draft EIS

Name: Ellen Allen
Organization: North Shore Foods
Address:
Phone: 808-293-4440 Email:

Comments: I support the Hanapohaku LLC proposing to develop comercial center in pupukea and also support the Food trucks

REQUESTED – Submit Tonight **DEADLINE: Email or US Mail - Postmarked by May 23, 2017 to the following:**

City/County Honolulu, Dept. of Planning and Permitting, 650 South King St, 7th Fl, Honolulu, HI 96816
Ardis Shaw-Kim, 768-8021, ashaw@honolulu.gov

G70, 925 Bethel Street, 5th Floor, Honolulu, HI 96813
Jeff Overton (808) 523-5866 Pupukea@g70.design

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Elen Atlas
c/o North Shore Tacos

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Atlas:

Thank you for the comments provided during a May 17, 2017 meeting concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu.

We acknowledge your support for the Hanapohaku LLC proposal to develop the Pūpūkea Rural Community Commercial Center, and your support for food trucks in the area.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

Comments on the Pupukea Rural Community Commercial Center
Environmental Impact Statement Preparation Notice
Special Management Area (SMA) – Minor & Major Permits
prepared by G70 on behalf of Applicant Hanapohaku LLC, April 2017

submitted by:
Joe Wilson
North Shore O'ahu
e: QwavesJoe@yahoo.com

May 22, 2017

I request to be a consulted party on all matters related to this development project.

While other community residents and respondents are likely focusing on the environmental, health, public safety, traffic, zoning, and design concerns associated with this Environmental Impact Statement Preparation Notice, I have questions regarding the process itself; unpermitted activities that have taken place, and continue, on the sites owned and operated by Hanapohaku LLC; and, whether, or NOT, Hanapohaku LLC is eligible to submit such permit applications before complying with the Feb. 27, 2017 Notice of Order from the City and County of Honolulu Department of Planning and Permitting.

These questions are an attempt to ascertain a broader understanding of the comprehensive physical and natural environmental impacts of this development scheme, the broader impacts on the community, and the precedent would set for future development bids on the North Shore, and across O'ahu.

An April 8, 2017 Honolulu Star-Advertiser article by business reporter Andrew Gomes stated that:

"A North Shore property owner that has racked up city fines for unpermitted construction and food truck operations is proposing to redevelop the site with more retail use after withdrawing a smaller development plan a year ago in the face of community opposition.

Development firm Hanapohaku LLC [led by Andrew Yani and Lawrence "Cully" McCully Judd III] wants to build several one- and two-story buildings, space for eight food trucks and covered parking in a new bid to redevelop the 2.7-acre property across from Sharks Cove in Pupukea."

The community opposition the article referred to was articulated by local environmental organization Malama Pupukea Waimea (MPW) in the December 2016 issue of Paumalu Press:

"In 2015, Hanapohaku LLC purchased three acres between the Pupukea Foodland and Pahoe Road – the old Niimi property, currently zoned as B-1 Neighborhood Commercial. Without warning or consultation with the community, and without proper permitting, the new owners began to develop in a haphazard, kapakahi style, with a wide range of unpermitted activities and violations. Ten food trucks appeared virtually overnight, and an unmanaged circus of customers and explosion in traffic followed them.

Despite having no valid Special Management Area permits for any activities on the property, for more than a year, Hanapohaku has illegally developed the property with unpermitted renovations, food trucks, lights, decks, utilities, commissaries, wastewater units, grading-grubbing, parking lots, fences, signs, and tents. Only recently, after months of community pressure, did Hanapohaku even put portable toilets on site, attempt to manage some of the parking problems, or hire a project coordinator or a professional planner. Hanapohaku has racked up a large number of apparent and reported

violations under federal, State, and County laws – many of which are resulting in double fines because they remain unresolved. The developer's deliberate strategy of seeking numerous after-the-fact permits, instead of complying with the law up front, and its disrespect for the community's voice have created significant problems for its neighbors, and posed reckless pollution threats to our environment."

On May 2, 2016, the City and County of Honolulu Department of Planning and Permitting (DPP) issued a letter stating:

"This responds to your request received April 13, 2016, to "cancel" the Minor SMA Use Permits issued to Hanapohaku LLC … and to withdraw a pending application seeking a site plan modification."

The DPP letter continued:

"Therefore, the permits identified by File Numbers 2015/SMA-24, 2015?SMA-47 and 2015/SMA-61, are hereby revoked. Consequently, ***all improvements which were authorized by these approvals must be removed, and the area restored to its pre-approval condition. Any outstanding violations associated with those approvals must also be resolved."***

Why did Hanapohaku LLC and owners Andrew Yani and Cully Judd not comply with that May 2, 2016 DPP directive?

Since then, over the past twelve months, as noted by reports on Hawaii News Now, KITV, and additional articles in the Honolulu Star-Advertiser and Pacific Business News, Hanapohaku LLC's illegal operations have continued, documented by the numerous Notices of Violation (NOV) issued by the City's DPP, with fines estimated to total more than $65,000.

When those NOVs were ignored, the City's DPP issued a Notice of Order (No. 2017/NOO-062) to Hanapohaku LLC on February 27, 2017 stating that:

"There are multiple violations in Special Management Area (SMA) without an SMA Use Permit. Structures include food trucks, shipping containers, loading trucks, septic tanks, wooden decks and stairs, tents, eating areas with tables and benches, signs and sheds, temporary toilets, fences, walls, parking areas, and all other unpermitted structures. Grading work was undertaken without the requires permit. Commercial activities lack an SMA Use Permit."

The Notice of Order continued:

"The Department of Planning and Permitting inspected the above-described structure(s) and/or premises and found a violation of one or more ordinances of the City and County of Honolulu. As a result, Notice of Violation 2016/NOV-12-137 was issued on January 23, 2017. As of the date of this order, the violation described in the NOV has not been corrected. Because this is a recurring violation, accordingly, pursuant to the authority granted by the Revised Ordinances of Honolulu, you are hereby ordered to 1) Pay a fine of $2,000 by March 30, 2017, and 2) Correct the violation by March 14, 2017. If corrective action has not been completed by this date, a daily fine of $500 will be assessed until the correction is completed."

Did Hanapohaku LLC and its owners, Andrew Yani and Cully Judd, comply with this Notice of Order?

If not, why not?

In a March 1, 2017 meeting, attended by Linda Schatz, Michael Hodge, Cully Judd, Andrew Yani, Dean Hamer, and myself, Yani told me that he *"needed to continue the [unpermitted] food truck operations in order to generate revenue to fund the cost of the SMA permit application process."*

Why does Yani believe that he is exempt from DPP zoning rules and regulations, ie. the law, in order to further his personal business interests?

If he and Hanapohaku LLC are exempted, why should other business owners who already, or want to, operate on the North Shore, or anywhere on O'ahu, comply with DPP zoning rules and regulations?

What should be the process to determine who is exempt and who is not? And who makes those decisions? Should there be community input into that process? If not, why not?

During his presentation on the development scheme at the May 17, 2017 meeting of the Sunset Beach Community Association, Hanapohaku LLC presentative Jeff Overton said:

"In 2014, Hanapohaku came and purchased the property and there were some changes on the property over the last couple years. They began to operate on the property. There were some food trucks added, some more commercial uses, structures that were built without permits there, other operations, and that's not the way things are supposed to be done … It was kind of the wild west there..."

What kind of precedent would be set for future development on the North Shore, or anywhere on O'ahu, if Hanapohaku LLC was not held accountable for its documented ("wild west") violations, ongoing illegal activities, and the disruptions it has caused to neighbors, pedestrian safety and vehicular traffic along the Kamehameha Highway corridor, as well as to the physical and natural environment surrounding the Pupukea Marine Life Conservation District?

Does Mr. Overton, and other project consultants paid by Hanapohaku LLC, including lawyer Terrence Lee, believe that such illegal behavior is acceptable and that Hanapohaku LLC should be exempt from compliance?

If so, why in this case? Should future development projects on the North Shore, or anywhere on O'ahu, also be exempt from the DPP's zoning rules and regulations? If not, why not?

In which circumstances should a developer comply with the law, and in which not? Who is to make such determinations?

If a developer was engaging in similar activities on parcels adjacent to Mr. Overton's, Mr. Lee's, Mr. Yani's, Mr. Judd's, and/or other paid project consultants' home properties, would they tolerate and support it? If so, why? If not, why not?

Now, well past the 30-day deadline set by the DPP in its February 27, 2017 Notice of Order, Hanapohaku LLC has still not paid its fine(s).

The DPP Notice of Order states:

"If the fine is not paid by the due date, this matter may be referred to the Department of the

Corporation Counsel for civil remedy and/or the Prosecuting Attorney's Office for criminal prosecution. When this order becomes final, all unpaid civil fines imposed by this order shall be added to the taxes, fees, and charges specified in Section 20-3-4 of the Department of Planning and Permitting's Rules Relating to Administration of Codes. Such taxes, fees, and charges include, but are not limited to, driver's license and vehicle registration fees, fees for permits issued under the City Land Use Ordinance (e.g. sign permits, conditional use permits, and variances) and fees for building, demolition, grading, grubbing, stockpiling, trenching, and excavation permits."

Why has Hanapohaku LLC not paid the fine(s)?

During his May 17, 2017 Sunset Beach Community Association presentation, Mr. Overton said "Tomorrow's not too soon. We've really got to get to these things because they're affecting people on a daily basis."

What's the delay?

Since Hanapohaku LLC is refusing to comply with the NOO, and refusing to pay the fine(s), why should this developer be allowed to continue in a Minor or Major SMA application process?

Would exempting Hanapohaku LLC from compliance with the DPP NOO and negotiating the fines down to a lower amount be fair to other businesses or developers who do follow the rules?

If the DPP allows Hanapohaku LLC to continue with its Minor and/or Major SMA permit applications despite its lack of compliance with the DPP NOO, how would Hanapohaku LLC's Environmental Impact Statement assess and quantify the environmental impacts and community disruptions that have occurred over the past year while the project was in violation?

In an April 13, 2017 Editorial titled "Shark's Cove Place Must Regain Trust," the Honolulu Star-Advertiser noted:

"*The developers have met with the community to draw up the new plans for a major permit, and that turnabout was a needed first step. But they have seemed unwilling to take the next step toward a legitimate operation by first ending the illicit activity.*

They have opposed shutting down the operations because the food trucks that are their tenants would lose business. That argument falls short. The developers fostered this situation. And, the truck owners are free to secure permits for a more mobile business elsewhere while the permit process proceeds. These are operations that are meant to be mobile after all.

Of course, Hanapohaku could no longer collect revenue from tenants during the interim. The whole purpose of land use regulations in the sensitive shoreline area is to allow careful review of environmental impacts before the activity is permitted – not to allow profit-taking in the meantime.

… There's a reason why the City takes a go-slow approach to development. Neighborhoods along the North Shore already are straining to cope with the crowds, including many tourists lured by the rustic charm and natural beauty of the place.

It takes time to define the boundaries for permitted activities. Hanapohaku needs to give the City that time, and the community the respect it deserves."

Since Hanapohaku LLC has chosen to disrespect the community and the City by ignoring DPP rules and regulations thus far, what guaranty does the community and the DPP have that Hanapohaku LLC and its consultants will follow rules and regulations going forward?

Based on Hanapohaku LLC's past actions, why should the community and the DPP trust Hanaophaku LLC and/or its consultants on this project going forward?

During his presentation at the May 17, 2017 Sunset Beach Community Association meeting, Hanapohaku LLC representative Jeff Overton asserted that *"Malama Pupukea Waimea... said to pull back, don't go to zero"* - in reference to the number of food trucks allowed to operate on the property.

When the accuracy of his statement was challenged by community member Larry McElheny, Overton tried to walk it back by saying: *"We have no stamped document that says exactly what was agreed to."*

When asked for comment on Overton's assertion, Malama Pupukea Waimea spokesperson Denise Antolini said: *"MPW has always said to go back to baseline (conditions at time of purchase) and then going forward, only what is legal."*

If Overton's statement was not verifiably accurate, and an arrangement had not been "agreed to," was he deliberately attempting to mislead or confuse the public on these details in order to achieve a more beneficial outcome for his client?

If not, what was the intention of the statement he made at the Sunset Beach Community Association meeting about Malama Pupukea's position?

Another misleading statement was included in the EISPN, prepared on behalf of Hanapohaku LLC by G70. Section 5.1 NO-ACTION ALTERNATIVE of the EISPN states: *"The No-Action Alternative would maintain the property in its existing condition, with the limited allowed commercial uses per the existing SMA Minor permit. The uses include the real estate office, dentist office, surf and clothing store, and one food truck establishment."*

As has been clearly established, the real estate office and dental office have been gone from the property for some time, replaced by approximately eight unpermitted food trucks.

What was the intent of including the inaccurate and misleading statement about the property's existing condition in the EISPN?

What other inaccuracies are contained within this EISPN? What is being done to correct them?

Should such inaccuracies negate this EISPN and require that the applicant go back to the drawing board, prepare, and submit a new one?

With such inaccuracies within the current EISPN, what trust can the public and the DPP place in the process going forward?

Based on these and other outstanding questions and concerns, the City and County of Honolulu Department of Planning and Permitting should NOT allow Hanapohaku LLC to proceed with SMA Minor or Major permit applications or EIS reviews until it complies in full with DPP's original May 2, 2016 directive, the February 27, 2017 Notice of Order, and pays the total amount of fines accrued for its numerous and ongoing violations.

As for the EISPN, I have additional questions and comments pertaining to the initial development plan. Many of these require baseline data collection that should be started before a permit application is even considered.

1. Function of the Development The North Shore Sustainable Communities Plane defines a rural community-based commercial center as one that "meet the needs of the surrounding residential communities." **A requirement for considering an SMA permit should be that the development will serve residents. This will require consideration of the precise retail activities planned and collecting external data on the likely customers.**

Current Questions: What percentage of customers at the site are expected to be residents? How does this break down in terms of each retail activity planned? What data sources and methods are you using for these projections?

Future Questions: What guarantee is there that the proposed retail activities are what will actually happen in the area? If a tenant leaves, what will be the requirements for the replacement? Does DPP currently enforce such regulations?

2. Congestion The number of visitors to the site is of major importance for traffic hindrance by pedestrian crossings, potential pollution from toilet use, etc. **A requirement for considering an SMA permit should be an accurate projection of congestion caused by the development.**

Questions: What number of customers are expected to visit the site? How was this number determined, and for what specific times periods? How does this compare to the current number of visitors?

3. Traffic Control Traffic is one of the most serious concerns of north shore resident. **A requirement for considering an SMA major permit should be accurate, data-based projections of traffic.**

Questions: What are the (1) total number of vehicles; (2) throughput; (3) time headway; (4) average and maximal delay period expected at the site of the development? How are these numbers determined and modeled, and for what specific times periods?

4. Environmental Concerns There is considerable debate among marine conservationists about the appropriate means to measure and predict the environmental impacts of developments such as the prosed Sharks Cove commercial center that will exist and probably grow for many years past the immediate permitting period. For example, while the immediate effects of the development on water quality might be quantifiable, what about the long term effects of years and decades of car exhaust, runoff from commercial areas, etc etc?

Given Hanapohaku's recent history of ignoring the law, there is justifiable concern that they will select environmental evaluators that place more value of giving a "clean" recommendation than on those that have more long-term concerns and approaches.

Questions: Who will choose the evaluators for each section of the SMA permit? Would Hanapohaku allow environmental organizations to be involved in the process? Would Hanapohaku agree to accept recommendations from an outside, objectively chosen experts?

With regard to an application for a Minor SMA permit:

1. Function of the Development The North Shore Sustainable Communities Plane defines a rural community-based commercial center as one that "meet the needs of the surrounding residential communities." However, the illegal development at Sharks Cove that Hanapohaku has carried out since 2014 has clearly resulted in attracting tourists rather than local residents, which is obvious from the large number of shiny rental cars that are parked in and across the highway from the development. **A requirement for granting the minor SMA permit should be that the planned activities are aimed at improving the property to meet the needs of residents. This in turn requires baseline data on the current usage of the facility and specific plan for bringing the development into compliance with zoning law.**

Data Questions: What percentage of customers at the site are residents? How was this number determined, and for what specific times periods? If these numbers have not been obtained, what are the developers plans to do so in the future? How and when?

Planning Questions: How will the prosed activities increase the proportion of residential users? How was your estimate obtained?

2. Congestion

The illegal post-2014 development at Sharks Cove has resulted in a large increase in the number of people visiting the site. This contributes to traffic hindrance by pedestrian crossings, potential pollution from toilet use, etc. **A requirement for granting the minor SMA permit should be that the planned activities are aimed at decreasing the congestion. This necessitates baseline data on customer use and demonstration of how the alterations will ameliorate the situation.**

Data Questions: What number of customers visit the site.? How was this number determined, and for what specific times periods? If these numbers have not been obtained, what are the developers plans to do so prior to the minor SMA permit activities? How and when?

Planning Questions: How do the proposed activities reduce congestion. How was your estimate obtained? (Please provide modeling details.)

3. Traffic Control Since the illegal post-2014 development at Sharks Cove there has been an obvious increase in traffic in the area, often resulting in long delays just to get to the stoplight at Pupakea Road. **A requirement for granting the minor SMA permit should be that the planned activities are aimed at decreasing the traffic that has been increased by the illegal development. This necessitates baseline traffic data and quantitative evidence for improvement..**

Data Questions: What number of care visit the site? How was this number determined, and for what specific times periods? If these numbers have not been obtained, what are the developers plans to do so prior to construction activities.

Planning Questions: How will the prosed activities effect (1) total number of vehicles; (2) throughput; (3) time headway; (4) average and maximal delay period? (Please provide modeling details.)

4. Parking Lot The SMA minor permit request includes permission for an asphalt parking lot. Developers state this is necessary for the amount of traffic they are generating. **This is a classic example of using illegal development as a quasi-rationale for further development.** That is, the developers build a bunch of stuff illegally, then ask for permission to build yet more to satisfy the demand they have generated in violation of the rules and regulations.

Question: If the major SMA permit is not granted (as appears likely based on previous history at this site), will the parking lot be removed? How will the land be restored?

5. Process Issues It is well known, both from multiple articles in the press and from the DPP's publication of multiple violations, that the current mess at Sharks Cove was the result of improperly or

unpermitted, illegal activities. In fact, the owners and developers have confessed and apologized for this at public meetings. They have also openly admitted that they have no intent to comply with the clear May 3, 2016 DPP directive that "*all improvements which were authorized by these (prior) approvals must be removed, and the area restored to its pre-approval condition.*"

I asked the owners, at a private meeting at their offices, why **they are flaunting the law**. The answer was simple: **to generate the cash needed to apply for legal permits**.

This raises a serious question of process going forward. If the DPP allows Hanapohaku to obtain *any* permit for development at Sharks Cove at the current point in time, even while they are in violation of DPP regulations, and making money from it, it sends a clear message to other developers: "*The best way to develop on the north shore is to ignore the law and do it yourself.... You can always fix it up later.*"

Questions: If Hanapohaku is exempt from DPP regulations, why should other business owners on the North Shore, or anywhere on O'ahu, comply with DPP zoning rules and regulations?

Given Hanapohaku's disrespect for the community and the City by ignoring DPP rules and regulations thus far, what guaranty does the community and the DPP have that Hanapohaku and its consultants will follow rules and regulations going forward?

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Joe Wilson
via email: QwavesJoe@yahoo.com

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Wilson:

Thank you for your comment letter dated May 22, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). As allowed under Hawaiʻi Administrative Rules §11-200 Environmental Impact Statement Rules, the draft EIS shall include reproductions of all substantive comments and responses made during the consultation process. The following responses are restricted to the comments in your letter specific to the EIS Preparation Notice.

We thank you for your input to the EIS process and welcome your involvement. You have been added to the list of consulted parties, and will notify you via email (per your request) of the availability of the Draft EIS and Final EIS.

1. **Status of Land Use Permits**

The Draft EIS presents a summary of the land use plan approved in August 2017 for existing uses under a Special Management Area (SMA) Use Permit Minor (SMA/2017-21). This approval includes a listing of conditions to address prior violations on the property, and permits and actions required for compliance. Actions are being completed by the owners to meet the set of compliance requirements under the approved SMA Minor Permit.

2. **Function of the Development**

Chapter 2.0 of the Draft EIS includes the specific language from the North Shore Sustainable Communities Plan (SCP) in its summary of policies and guidelines related to a Rural Community Commercial Center:

- Range of Goods & Services to Meet the Needs of Surrounding Residential Communities
- Center attracts Visitors & Residents from Outside the Immediate Community
- Commercial Establishments may Include: Grocery Stores, Sundries Stores, Restaurants, and Other Services and Shops Catering to Residents and Visitors

The center will offer many of the goods and services which are not provided locally, such as medical services, pharmacy and banking. The committed tenants for the rural center reflect an offering of goods and services to the surrounding community that would otherwise

require vehicle trips to commercial centers in Hale'iwa or Central O'ahu. The project will positively impact economic opportunities by adding business opportunity for Hawai'i entrepreneurs, and by adding jobs within the region. In turn, area residents that work at the center can avoid long commutes to job centers in urban areas of O'ahu. Many of these businesses are Hawai'i-based, and some of these businesses are owned by North Shore residents.

Patronage of the commercial venues by local residents is a primary emphasis. However, as witnessed by the patronage of the Foodland Pūpūkea store, many are attracted to the area by Sharks Cove, Pūpūkea Beach Park, and the Marine Life Conservation District. The rural center must also serve the needs of these visitors to the area, consisting of other O'ahu residents and tourists.

3. **Congestion and Traffic Control**

Technical studies conducted for the EIS included an analysis of existing traffic in the area, and projected additional trips as a result of the rural center. *Section 3.13* of the Draft EIS summarizes the study's findings, and makes recommendations to improve flow in and out of the center and along Kamehameha Highway, as well as increase pedestrian safety. No significant impacts are anticipated as a result of the rural center's construction. Details of methods and data collected are contained in *Appendix F, Transportation Impact Analysis Report*.

4. **Environmental Concerns**

Chapter 3 of the Draft EIS evaluates environmental concerns that may have potential to affect the marine environment at the nearby Pūpūkea Beach Park and the Marine Life Conservation District, as well as other environmental resources. Technical studies evaluate the proposed site plan design, and address drainage, surface runoff, groundwater and connections to the nearshore marine area, as well as provide existing marine water quality conditions and a description of the nearshore marine environment. Through use of best management practices and current engineering compliant with the recently enacted Water Quality Rules (Hawai'i Administrative Rules §20-3), controls will be implemented to minimize effects to the marine environment.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Larry McElheny <lkmcelheny@gmail.com>
Sent: Tuesday, May 23, 2017 7:50 PM
To: ashaw@honolulu.gov; hanapohakullc@gmail.com; pupukea
Subject: EISPN
Attachments: MPW EISPN Comments HP Project - 5.22.17 DEA.pdf

May 23, 2017

Ardis Shaw-Kim, (808) 768-8021, ashaw@honolulu.gov

Andrew Yani, (808) 779-5733, hanapohakullc@gmail.com

Jeff Overton, AICP LEED AP, (808) 523-5866, pupukea@g70.design

Re: Pūpūkea Rural Community Commercial Center EISPN Comments

Dear Ms. Shaw-Kim, Mr. Yani, and Mr. Overton:

Please consider the attached letter as my comments on the EISPN noted above.

Sincerely

Larry McElheny
59-272 Pupukea Road
Haleiwa, Hawaii
96712
(808) 638-8484
(808) 237-9354

MĀLAMA PŪPŪKEA-WAIMEA
PROTECTING OUR OCEAN'S RESOURCES

Mālama Pūpūkea-Waimea
Post Office Box 188
Haleʻiwa, HI 96712

Board of Directors

Denise Antolini
Colette Coty
John Cutting
Bob Leinau
Laura Parsons
Jim Parsons

Advisory Council

Athline Clark
Dr. Alan Friedlander
Debbie Gowensmith
Bill Quinlan
Palakiko Yagodich

Staff

Maxx Elizabeth Phillips, Managing Director
Jenny Yagodich, Director of Educational Programs & Community Outreach

Federal Nonprofit Organization
501(c)(3) FEIN 27-0855937
www.pupukeawaimea.org

May 22, 2017

Ardis Shaw-Kim, (808) 768-8021, ashaw@honolulu.gov
Andrew Yani, (808) 779-5733, hanapohakullc@gmail.com
Jeff Overton, AICP LEED AP, (808) 523-5866, pupukea@g70.design

Re: Pūpūkea Rural Community Commercial Center EISPN Comments

Dear Ms. Shaw-Kim, Mr. Yani, and Mr. Overton:

Since 2005, Mālama Pūpūkea-Waimea (MPW) has worked "to replenish and sustain the natural and cultural resources of the Pūpūkea and Waimea ahupuaʻa for present and future generations through active community stewardship, education, and partnerships."

Our organization was created thirteen years ago in response to the serious threats to the community and marine ecosystem in these ahupuaʻa that arose from the commercial "mall" development by the Honu Group on the same parcels that are the subject of this EISPN.

We have since dedicated thousands of hours of volunteer and staff time, and substantial resources, in particular to protecting the State Marine Life Conservation District (MLCD) at Pūpūkea and stewarding Pūpūkea Beach Park.

We are deeply concerned about the environmental and community impacts of the proposed Pūpūkea Rural Community Commercial Center, and about the existing illegal development of the property, and therefore provide the following comments on the EISPN:

Consulted Party

MPW requests to be a formally consulted party in the EIS process going forward. Please provide all future documents and correspondence to both Denise Antolini (antolinid@gmail.com) and Maxx Elisabeth Phillips (maxxephillips@gmail.com) and mail hard copies to MPW address indicated.

Section 1.3 Proposed Action and Purpose of the EISPN

The North Shore Sustainable Communities Plan's definition of Rural Community Commercial Center requires that development of these parcels be "small cluster" and "meet the needs of the surrounding residential communities."

The Concept Plan presented by Hanapohaku LLC (HP) exceeds the "small cluster" level because the proposed development – through buildings, parking lots, roadways, and food trucks – takes up nearly all empty space on the three parcels. Sprawl is not small. The total proposed gross *floor* area is 30,000 (p. 10). But this number is a substantial under-estimate of the footprint because the EISPN does not provide information about the total footprint of the development from the proposed paved parking lots, paved roadways, drainage systems, and the food trucks (with associated tables, chairs, decks, walkways,

and spillover equipment areas).

The Concept Plan violates the spirit and letter of the NSSCP because it does not cater to "the needs of the surrounding residential communities." Instead, HP proposes a commercial center that is focused on attracting tourists and non-residential customers.

HP acknowledges that Rural Community Commercial Centers "also attracts residents and visitors outside the immediate community." (P. 10.) This is a gross under-statement of (a) the focus of the HP owners on the quick-turnover, drive-by tourism market as indicated by their past almost two years of kapahahi commercial activity with hundreds if not thousands of tourists a day (far outweighing resident customers), (b) the major impacts on the Pūpūkea community caused by the kind of development that will attract more tourism, more traffic, and more pollution to this small area, and (c) the conclusion that catering to tourists is not consistent with the NSSCP, which focuses on the needs of "*surrounding residential communities.*"

While HP may claim that they will rent to local businesses with local owners, and cater to local residents, this is an illusory promise. HP is not going to be bound to do any catering to local needs once the development is completed. All of the retail units can, and likely will be, flipped to high-traffic tourism-focused businesses on a dime.

2.1 Project Setting and Description

MPW notes that most of the existing commercial uses on the H property are not legal because HP does not have a Special Management Area (SMA) permit for the myriad of activities on the property that constitute development. The City and County of Honolulu Department of Planning & Permitting (DPP) has imposed fines for multiple violations of building codes and currently has HP under an Notice of Order whereby HP is accumulating fines of over $500 per day. This important information was omitted from this section and must be acknoweldged in the DEIS, accurately and fully.

In describing the proposed action, p. 10, the EISPN says "[b]uildings will be set back from the highway to provide a large park-like green space, walkways, and bicycle parking." Although that sounds attractive, it is not what is indicated by the Concept Plan, which shows a narrow setback from the Highway and no "large park-like green space," but rather eight crammed in food trucks, which are not drawn realistically because the canopies, decks, service counters, fake grass, picnic tables, umbrellas, garbage bins, hoses, electrical lines, pipes, outdoor lighting, signage, outside equipment, and other "spillover" from *each* of these trucks as currently operating on the property is not indicated. The other "green area" is overshadowed and surrounded by what looks like six two-story buildings. This is hardly the "community gathering space" suggested by the EISPN.

3.1 Physical and Natural Environment

The EISPN notes the project's proximity to "the ocean located a distance of 500 feet across Kamehahema Highway." Oddly, given that MPW has consistenly raised numerous concerns about the impact of the current and future development on the Pūpūkea MLCD and Pūpūkea Beach Park for over a year with HP, the EISPN *does not mention the direct runoff connection to the MLCD, the importance of the MLCD itself, or the sensitive nature of the marine environment and beach park.* A similar lack of appropriate focus and analysis of the sensitivity of this special marine protected area was a serious and fatal omission from the EA for the Honu project in 2004.

MPW also has concerns that HP will not conduct an adequate marine impact survey. MPW has already objected in communications with G70 to HP's decision to retain Steve Dollar as its marine consultant. MPW now makes that objection formal. Given his track record of always working for developers, and other questionable work in the past, Dollar does not appear to be impartial, capable, or inclined to conduct an accurate and credible survey of the potential impacts of this project or alternatives on the MLCD.

4.3 Significance Criteria

MPW does not agree with HP's statement (p. 14) that "Due to substantial environmental improvements to these properties, the project is anticipated to result in negligible adverse effects and beneficial impacts to the environment." MPW expects that the project will have major, long-term, and irreversible impacts to the MLCD, the Beach Park, and to litter, traffic, pedestrian hazard, noise, aesthetic, and the view planes. These impacts are not offset by proposed amenities such as a EV charging station for HP's owner or solar panels that offset the owner's electrical bill for substantial new consumptive uses on the property. The environment cannot be traded off in this manner like three-card Monte.

Indeed, most likely because G70 recognizes that there are significant potential impacts, G70 has made the wise decision advise HP to go "direct to the EIS" instead of claiming that the impacts can be mitigated down to the EA/FONSI level. However, the "no net negative impact" language of the EISPN does not match the fact that this is an EISPN and is therefore this section is misleading.

5.1 No Action Alternative

The No Action Alternative is incorrectly framed. This section incorrectly states that there is an "existing SMA Minor permit." (p. 17) No such permit exists for uses other than the pre-existing (pre-HP-purchase) buildings. The development currently on the property that is post-"baseline" (post-purchase by HP) *does not have a SMA permit*. This needs to be stated correctly.

If HP contends that "no action" refers to only those current uses with an SMA permit, then HP must take the property back to the baseline condition. This means removing all of the food trucks and related development on the property. In other words, No Action does not mean "leave all the current food trucks and mess" on the property. Under HEPA, No Action cannot mean an illegal action. Because HP's current development (post-purchase) is illegal due to the lack of an SMA, *No Action means taking the property back to the pre-purchase baseline conditions.*

5.2 Commercial Shopping Center Alternative

HP describes only one alternative, a Commercial Shopping Center, and this alternative is a false one because it is not feasible under the NSSCP, given that (as described on p. 6) the NSSCP limits development on these lots to a "small cluster" and a development that "meet the needs of the surrounding residential communities." This kind of straw-person alternative is not reasonable.

HP should come up with alternatives that conform to the NSSCP and that involve *less* not *more* development that proposed by the Concept Plan. These alternatives could include conservation of a substantial portion of the property and development that truly focuses on serving the needs of the immediate residential community.

Sincerely,

Denise Antolini
President

Cc: Maxx E. Phillips

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Larry McElheny
via email: lkmcelheny@gmail.com

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. McElheny:

Thank you for your comment letter dated May 23, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments, which are the same as those provided by Malama Pūpūkea Waimea:

1. **Consulted Party**

We thank you for your input to the EIS process and welcome your involvement. This letter serves as a response to your EISPN comment letter, and we will provide you with copies of the Draft EIS and Final EIS. Please contact us if you have questions or other issues you wish to be addressed in this process.

2. **Proposed Action and Project Purpose**

The elements of the proposed action are described in *Chapter 2.0* of the Draft EIS. The future project emphasizes consistency with the North Shore Sustainable Communities Plan (SCP) in the creation of this Rural Community Commercial Center. In keeping with the guidance of the SCP, the scale of development is approximately 25 percent of the allowable commercial floor area for the subject properties. The planned gross building floor area of 30,000 square feet (SF) will yield a net leasable floor area of approximately 27,500 SF. This reflects sensitivity to establishing an appropriate scale for this rural center.

The center will offer many of the goods and services which are not provided locally, such as medical services, pharmacy and banking. The committed tenants for the rural center reflect an offering of goods and services to the surrounding community that would otherwise require vehicle trips to commercial centers in Hale'iwa or Central O'ahu. The project will positively impact economic opportunities by adding business opportunity for Hawai'i entrepreneurs, and by adding jobs within the region. In turn, area residents that work at the center can avoid long commutes to job centers in urban areas of O'ahu. Many of these businesses are Hawai'i-based, and some of these businesses are owned by North Shore residents.

Patronage of the commercial venues by local residents is a primary emphasis. However, as witnessed by the patronage of the Foodland Pūpūkea store, many are attracted to the area by Sharks Cove, Pūpūkea Beach Park, and the Marine Life Conservation District. The rural center must also serve the needs of these visitors to the area, consisting of other O'ahu residents and tourists.

Chapter 3 of the Draft EIS is dedicated to evaluating impacts of the rural center on groundwater, the nearshore marine environment, and traffic, among other topics. No significant impacts to these or other resources are anticipated.

3. **Project Setting and Description**

The Draft EIS presents a summary of the land use plan approved in August 2017 for existing uses under a Special Management Area (SMA) Use Permit Minor (SMA/2017-21). This approval includes a listing of conditions to address prior violations on the property, and permits and actions required for compliance. Actions are being completed by the owners to meet the set of compliance requirements under the approved SMA Minor Permit.

The themes for the rural center concept plan include the creation of a gathering place, a desired feature element which emerged from discussions with community members. The small-scale clustered buildings linked by meandering walkways and a central green landscaped area will provide a community gathering place for residents and visitors. Pathways will create pedestrian connectivity across the property from bike paths and bus stops along Kamehameha Highway to the Foodland grocery store, a frequent daily destination for area residents. The parking area is placed behind the buildings to deemphasize the vehicular environment. Pervious paving will be integrated, and permanent low impact development (LID) features such as bioswales, rain gardens, planter boxes, and sand filters will be installed to detain storm water on site and reduce and filter urban pollutants. An overview of the supporting elements of the property, such as walkways and infrastructure, are presented in *Chapter 2.0* of the Draft EIS; further details are provided in *Chapter 3.0*.

Sustainability is a core element reflected in the concept plan, and supports a core philosophy of North Shore residents. On-site solar energy production will occur with photovoltaic canopies erected over the parking spaces. Native plants will be used in the landscaping, and rain gardens will utilize storm water runoff thus reducing irrigation water demand. Building design will utilize shade elements to lower cooling demand, and integrate sustainable materials in the specifications. On-site recyclable materials collection will minimize solid waste production. Electric vehicle charging stations will be provided on-site. Locally raised food will be promoted in the food venues at the property. In short, the rural center seeks to become a living model example for sustainable principals.

4. **Physical and Natural Environment**

Chapter 3 of the Draft EIS evaluates environmental concerns that may have potential to affect the marine environment at the nearby Pūpūkea Beach Park and the Marine Life

Conservation District, as well as other environmental resources. Technical studies evaluate the proposed site plan design, and address drainage, surface runoff, groundwater and connections to the nearshore marine area, as well as provide existing marine water quality conditions and a description of the nearshore marine environment. Through use of best management practices and current engineering compliant with the recently enacted Water Quality Rules (Hawai'i Administrative Rules §20-3), controls will be implemented to minimize effects to the marine environment.

5. Significance Criteria

The owners of the rural center support the preparation of a thorough Environmental Impact Statement. As discussed in Chapters 2.0 and 3.0 of the Draft EIS, the nearby presence of the public beach park and the sensitive resources at the Marine Life Conservation District, the EIS is a disclosure document that presents detail on the rural center project, the existing environmental conditions, and identifies potential impacts and mitigative measures. The impacts draw on the technical studies mentioned under #4, above.

6. Alternatives

The evaluation of alternatives in the Draft EIS Chapter 5.0 includes the No-Action Alternative, the Commercial Shopping Center Alternative, and the Alternative Development Timetable (Deferral). The No-Action Alternative is based on utilization of the subject properties in compliance with the existing SMA Minor Permit (SMA/2017-21). The Shopping Center Alternative is described as a viable project with a gross floor area of 46,000 SF, which is approximately 40 percent of the LUO development capacity under its B-1 commercial zoning. Such a center would provide a wider range of goods and services for residents of the surrounding neighborhoods and their visitors. Another alternative that is addressed is the Alternative for Deferred Action, which would delay the development of the rural center to some future date several years from now. Until future development, the property would continue operations under the existing SMA Minor Permit (SMA/2017-21).

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Nancy Salemi <salsalemi@gmail.com>
Sent: Tuesday, May 23, 2017 2:51 PM
To: pupukea; Andrew Yani; ashaw@honolulu.gov
Cc: Denise Antolini; Maxx Phillips
Subject: Sharks Cove Development

As a resident I find it appalling that Hanapohaku, LLC feels they still can bamboozle the community with their smoke and mirrors. For the past four years they have continually and blatantly ignored laws and requests to fix or change their operations and instead have made flimsy and unmet promises to correct them.

As a business owner I am disgusted and appalled that they seem to receive lenient reprimands and skirt the laws time after time when brick and mortar businesses such as retail stores and restaurants would be heavily fined for the same offenses, such as lack of building permits and illegal structures. It has taken them four years to remove only *some* of these illegal structures.

Lastly but most importantly, environmentally it is shamefully and morally wrong that only now they are talking about and doing something about their wastewater. Sharks Cove is a marine life conservation district. What was being done before? And what damage has already been done? It seems that only now they are supposedly adhering to the laws of having their wastewater pumped on a regular basis. If it took this much community opposition to make them pay attention, how can we trust them to follow any plans to protect the environment in the future? If this is indeed passed, how long will it take? And while we wait for this alleged "community" center to be built, is it all just another ruse for the lunch wagons to continue in a carnival fashion?

Unfortunately, in cases such as this, personal gain must take a backseat. As the North Shore is changing rapidly it is imperative that we ensure its natural beauty and resources do not get destroyed, as once the damage is done it is irreparable.

Respectfully,
Nancy Salemi, Cholos Homestyle Mexican

From: Nancy Salemi <salsalemi@gmail.com>
Sent: Wednesday, May 10, 2017 12:35 PM
To: ashaw@honolulu.gov; hanapohakullc@gmail.com; pupukea
Cc: antolinid@gmail.com; maxxephillips@gmail.com
Subject: Shark's Cove Development 30 Day Comment period

To Whom it May Concern:

I believe that the development that is being proposed at Shark's Cove eventually would have the potential to harm the reef, which is a conservation area. Many promises have been made and broken by the owners throughout the previous years, so it is doubtful they would suddenly comply to a brand new plan to make everyone happy, but meanwhile are still breaking rules by continuing to run businesses that were ordered to cease and desist three times already.

Sincerely,

Nancy Salemi
Cholo's Homestyle Mexican
Owner

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Nancy Salemi, Owner
Cholo's Homestyle Mexican
via email: salsalemi@gmail.com

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Salemi:

Thank you for your comment letters dated May 10 and 23, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments from both letters.

The Draft EIS presents a summary of the land use plan approved in August 2017 for existing uses under a Special Management Area (SMA) Use Permit Minor (SMA/2017-21). This approval includes a listing of conditions to address prior violations on the property, and permits and actions required for compliance. Actions are being completed by the owners to meet the set of compliance requirements under the approved SMA Minor Permit.

Chapter 3 of the Draft EIS evaluates environmental concerns that may have potential to affect the marine environment at the nearby Pūpūkea Beach Park and the Marine Life Conservation District, as well as other environmental resources. Because City sewer systems are limited to a small subdivision in the Waialua area, nearly all North Shore businesses and residents utilize on-site disposal systems. *Section 3.5 Groundwater* in the EIS identifies more than 500 wastewater systems upgradient of the project site, including 279 cesspools and 159 aerobic, septic and soil treatment systems. A conservative estimate of total wastewater volume from the residential area mauka of the site is greater than 100,000 gallons per day.

The existing groundwater quality conditions at the site reflect the inputs from individual wastewater disposal systems serving the Pūpūkea and Sunset Beach community. Through use of best management practices and current engineering compliant with the recently enacted Water Quality Rules (Hawaiʻi Administrative Rules §20-3), controls will be implemented to minimize effects to the marine environment.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

Ms. Nancy Salemi, Owner
Cholo's Homestyle Mexican
via email: salsalemi@gmail.com
October 11, 2017
Page 2 of 2

The existing groundwater quality conditions at the site reflect the inputs from individual wastewater disposal systems serving the Pūpūkea and Sunset Beach community. Through use of best management practices and current engineering compliant with the recently enacted Water Quality Rules (Hawai'i Administrative Rules §20-3), controls will be implemented to minimize effects to the marine environment.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

PUPUKEA RURAL COMMUNITY COMMERCIAL CENTER

Environmental Impact Statement Preparation Notice

Hanamohaku LLC is proposing to develop a rural community commercial center in Pupukea, Oahu to provide a mix of goods and services to residents and visitors of the community. The property is in the Special Management Area and this EISPN is being prepared pursuant to Chapter 25-3.3, Revised Ordinances of Honolulu, related to procedural guidelines and assessment requirements. The Property is classified as Urban in the State Land Use Designation, is zoned in the B-1 Neighborhood Business District established by the City and County of Honolulu Zoning Maps, and is designated for a Rural Community Commercial Center in the North Shore Sustainable Communities Plan. The existing Foodland grocery store is included in the center. Three new buildings will be constructed, one to two stories in height, totaling approximately 30,000 square feet. The buildings will be set back from Kamehameha Highway with a park-like green space, walkways, and bicycle parking facing Kamehameha Highway. Mobile food trucks are also proposed. Supporting infrastructure will include driveways, parking with solar panel canopies, drainage, water supply, and wastewater treatment facility.

COMMENTS ON EIS PREPARATION NOTICE

Submitted comments will be published in the Draft EIS

Name: Phyllis Shipman
Organization: Resident
Address: 59-054 Paumalu Pl
Phone: 619-395-1184 Email: olyarch@hotmail.com

Comments:
- Waste water - How handled.
- Egress / entrance exits - Block traffic
- Need turn off like Foodland
Where is seating - ? Next to Pahoe Road?
- Archeological Survey? First for Burials etc.

REQUESTED – Submit Tonight **DEADLINE: Email or US Mail - Postmarked by May 23, 2017 to the following:**

City/County Honolulu, Dept. of Planning and Permitting, 650 South King St, 7th Fl, Honolulu, HI 96816
Ardis Shaw-Kim, 768-8021, ashaw@honolulu.gov

G70, 925 Bethel Street, 5th Floor, Honolulu, HI 96813
Jeff Overton (808) 523-5866 Pupukea@g70.design

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Ms. Phyllis Shipman
59-054 Paumalu Pl.
Haleʻiwa, HI 96712

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Shipman:

Thank you for the comments you provided during the May 17, 2017 meeting regarding the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments.

Chapter 3 of the Draft EIS evaluates environmental concerns that may have potential to affect the marine environment at the nearby Pūpūkea Beach Park and the Marine Life Conservation District, as well as other environmental resources. Because City sewer systems are limited to a small subdivision in the Waialua area, nearly all North Shore businesses and residents utilize on-site disposal systems. *Section 3.5 Groundwater* in the EIS identifies more than 500 wastewater systems upgradient of the project site, including 279 cesspools and 159 aerobic, septic and soil treatment systems. A conservative estimate of total wastewater volume from the residential area mauka of the site is greater than 100,000 gallons per day.

The existing groundwater quality conditions at the site reflect the inputs from individual wastewater disposal systems serving the Pūpūkea and Sunset Beach community. Through use of best management practices and current engineering compliant with the recently enacted Water Quality Rules (Hawaiʻi Administrative Rules §20-3), controls will be implemented to minimize effects to the marine environment. The wastewater treatment system proposed for the site will be reviewed and approved by the Department of Health Wastewater Branch.

The Draft Environmental Impact Statement (EIS) describes proposed changes to improve traffic flow along Kamehameha Highway in *Section 3.13 Traffic*. The existing Foodland driveways off Kamehameha Highway will be consolidated to reduce the total number of access points and improve pedestrian safety. The existing driveway connection to Pūpūkea Road will be retained. A center two-way left-turn lane is proposed to provide a refuge area for traffic turning left into and out of the rural center. A Transportation Impact Analysis Report (TIAR) was prepared to analyze existing traffic and future traffic conditions with the project, and evaluates the proposed improvements to minimize traffic impacts. The TIAR is included in *Appendix F* of the EIS.

The elements of the proposed project are described in *Chapter 2.0* of the Draft EIS. The rural center includes creation of a gathering place, a desired feature element which emerged from discussions with community members. Small-scale clustered buildings will be linked by meandering walkways, and a central green landscaped area will provide a community gathering place for residents and visitors. Pathways will connect across the property from bike paths and bus stops along Kamehameha Highway to the Foodland grocery store, a frequent daily destination for area residents. The parking area is placed behind the buildings to deemphasize the vehicular environment. Pervious paving will be integrated, and permanent low impact development (LID) features such as bioswales, rain gardens, planter boxes, and sand filters will be installed to detain storm water on site and reduce and filter urban pollutants.

Sections 3-8 and *3-9* of the Draft EIS provide a summary of the cultural assessment and archaeological inventory studies conducted for the EIS. The archaeological study included a review of all such studies conducted in the region, and the site survey included sub-surface trenching. No archaeological features were found in the survey. The State Historic Preservation Division (SHPD) reviewed and accepted the findings of the survey. The cultural assessment and the archaeological assessment reports, along with the letter from SHPD, are included as Appendices E and F of the Draft EIS.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: wnwcsurf@aim.com
Sent: Sunday, May 21, 2017 10:28 AM
To: pupukea
Subject: "Shark's Cove"

Gentlemen,
After seeing your presentation at the Sunset Beach Community Association last week, I am concerned that what your development is doing is making a road that runs between the Foodland parking lot and the entrance to Foodland. To get into the Foodland parking lot you will have to make a left hand turn accross this road, To get in and out of Foodland, you will have to cross this road two times.
Foodland is a store that is definitely servicing the community. Your parking plan will make it harder to use. It may be easier to drive to Laie.
Sincerely,
Warner R, Wacha

G70

925 Bethel Street
5th Floor
Honolulu, HI 96813
808.523.5866
www.g70.design

November 1, 2017

Mr. Warner Wacha
wnwcsurf@aim.com

Subject: Responses to Comments on EIS Preparation Notice
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Wacha:

Thank you for your comment letter dated May 21, 2017 concerning the Environmental Impact Statement Preparation Notice (EISPN) for the Pūpūkea Rural Community Commercial Center project, prepared pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). The following responses are offered to your comments.

The Draft Environmental Impact Statement (EIS) describes proposed changes to improve traffic flow along Kamehameha Highway in *Section 3.13 Traffic*. The existing Foodland driveways off Kamehameha Highway will be consolidated to reduce the total number of access points and improve pedestrian safety. The existing driveway connection to Pūpūkea Road will be retained. A center two-way left-turn lane is proposed to provide a refuge area for traffic turning left into and out of the rural center. A Transportation Impact Analysis Report (TIAR) was prepared to analyze existing traffic and future traffic conditions with the project, and evaluates the proposed improvements to minimize traffic impacts. The TIAR is included in *Appendix F* of the EIS.

Thank you for your participation in the environmental review process. We will notify you of the availability of the Draft EIS.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

2017 DRAFT EIS
COMMENTS AND RESPONSE LETTERS

FEDERAL AGENCIES

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

In Reply Refer To:
01EPIF00-2018-TA-0062

RECEIVED
JAN - 2 2018
G70

DEC 2 8 2017

Mr. Jeff Overton
Principal
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Subject: Review of the Draft Environmental Impact Statement for the Proposed Pupukea Community Commercial Center, Haleiwa, Oahu

Dear Mr. Overton:

The U.S. Fish and Wildlife Service (Service) received your letter, dated November 21, 2017, requesting our comments on the Draft Environmental Impact Statement (DEIS) for the Pupukea Rural Community Commercial Center project located on a 4.56 acre parcel in Pupukea, Haleiwa, Oahu [TMK: (1) 5-9-011: 068, 069, 070, and 016]. We understand Group 70 International, Inc., has prepared the DEIS for the project in accordance with chapter 343, Hawaii Revised Statutes on behalf of Hanapohaku LLC. The project involves constructing a new Community Commercial Center to expand the availability of goods and services for residents of Oahu's North Shore community. The center will consist of multiple one or two story buildings, a parking area, and walking paths connecting the buildings. The buildings will house local businesses, surf and sport shops, restaurants, an urgent care facility, and other professional businesses. Infrastructure to support the new facilities will include driveways, parking shaded by solar panel canopies, storm water runoff controls, a water supply, and wastewater management.

The Service offers the following comments so that impacts to trust resources can be avoided. Our comments are provided under the authorities of the Endangered Species Act of 1973 (ESA), as amended (16 U.S.C. 1531 *et seq.*), the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712) (MBTA), and the National Environmental Policy Act of 1969 [42 U.S.C. 4321 *et seq.*; 83 Stat. 401] (NEPA), among others.

The DEIS addresses the majority of potential impacts of the proposed project on federally listed threatened and endangered species that may be present in the vicinity of the project area. However, the DEIS does not consider all potential listed species that may occur within the project area and the information provided on the species covered in the DEIS is outdated or lacking. In addition, the Service has additional concerns we recommend be addressed in the Final EIS.

We have reviewed the information you provided and pertinent information in our files, including data compiled by the Hawai'i Biodiversity and Mapping Program as it pertains to listed species and designated critical habitat in accordance with the ESA. There is no federally designated critical habitat within the immediate vicinity of the proposed project. Our data indicate that the following are known threatened or endangered species that may occur or transit through the vicinity of your proposed project area: the federally endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*); the endangered band-rumped storm-petrel (*Oceanodroma castro*), the endangered Hawaiian petrel (*Pterodroma sandwichensis*), and the threatened Newell's shearwater (*Puffinus auricularis newelli*), and the wedge-tailed shearwater (*Ardenna pacificus*), a seabird species federally protected under the MBTA (hereafter collectively referred to as Hawaiian seabirds); the endangered Hawaiian stilt (*Himantopus mexicanus knudseni*) and the endangered Hawaiian gallinule (*Gallinula galeata sandvicensis*) (hereafter collectively referred to as Hawaiian waterbirds); and the endangered Hawaiian goose (*Branta sandvicensis*).

Hawaiian hoary bat

Page 3-9, paragraph 4 of the DEIS states that Hawaiian hoary bats were not detected during the survey on the project site and have been infrequently documented on the island of Oahu. The method used to conduct the vertebrate surveys for the DEIS (*i.e.*, one point count conducted during daylight hours in April) is inadequate to detect the possible presence of bats within the project area since it was conducted during the day and Hawaiian hoary bats are nocturnal. In addition, acoustic recorders are used to detect the presence of bats by recording the ultrasonic sounds emitted by bats. Acoustic recorders were not used during the survey of the project site.

Recent information is available regarding the presence of the Hawaiian hoary bat on Oahu and in particular for the north shore. Recent surveys conducted in the northern Koolau Mountains using acoustic and video recording technology indicate bats are present in this region (Gorresen *et al.* 2015). Other sites along the north shore of Oahu have documented the presence of Hawaiian hoary bats (*e.g.*, James Campbell National Wildlife Refuge, Kahuku and Kawailoa Wind Farms, Proposed Na Pua Makani Wind Farm, Ukoa Wetland) (SWCA 2011, p. 31 & 35; Kawailoa Wind, LLC 2013, p. 49; Kahuku Wind Power, LLC 2016, p. 9; Tetra Tech 2016, p. 19). Hawaiian hoary bats have been documented to roost in various native as well as non-native tree species such as kukui (*Aleurites moluccana*), ironwood (*Casuarina equisetifolia*), eucalyptus (*Eucalyptus sp.*), mango (*Mangifera indica*), and lychee (*Litchi chinensis*)(Bryan 1955, p. 64; Bonaccorso 2010, p. 11; Kawailoa Wind, LLC 2013, p. 49). According to the *Natural Resources Assessment for Improvements Proposed for the Pupukea Rural Community Commercial Center, Island of Oahu* (Appendix A of the DEIS), mango and ironwood are present within the proposed project area. Based upon the above information, the Service believes Hawaiian hoary bats may occur within the vicinity of the proposed project and potential roosting trees are present.

The Hawaiian hoary bat roosts in both exotic and native woody vegetation and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. To minimize potential impacts to the Hawaiian hoary bat, the DEIS states that vegetation greater than 15 feet or taller will not be disturbed during the bat pupping season (June 1 through September 15). In addition, Hawaiian hoary bats forage for insects from as low as three feet to higher than 500 feet above the ground

and can become entangled in barbed wire used for fencing. The Service recommends you consider not using barbed wire for fencing as part of the proposed project.

Hawaiian seabirds

Page 3-10, paragraph 7 of the DEIS states that Newell's shearwaters were not detected during the avian survey on the project site and they are not known to nest on Oahu. Recent research utilizing audio recording technology has revealed that both Newell's shearwater and the Hawaiian petrel may be nesting on Oahu (Young pers. comm. 2017). In addition, there are fallout records of all three listed Hawaiian seabirds from various locations on Oahu. Based upon the information available, the Service believes the three listed Hawaiian seabirds may traverse the project area at night during the breeding season (March 1 to December 15).

Outdoor lighting associated with the construction phase or the project infrastructure could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable. The DEIS states that outdoor lighting will be shielded and directed downward. In addition, the Service recommends you consider avoiding nighttime construction during the seabird fledging period (September 15 through December 15) and installing automatic motion sensor switches and controls on all outdoor lights or turning off lights when human activity is not occurring in the lighted area to avoid and minimize impact to listed seabirds, and provide all project staff and businesses with information about seabird fallout and let them know that downed seabirds can be taken to Sea Life Park for rehabilitation. The Service recommends the Final EIS evaluate potential impacts from the proposed project on Hawaiian seabirds, and identify measures to avoid and minimize such impacts.

Wedge-tailed shearwater

Page 3-9, paragraph 7 of the DEIS indicated that no native avian species were detected during the survey on the project site. The avian point count survey conducted for the DEIS (*i.e.*, one point count conducted during late morning hours in April) is inadequate to detect the possible presence of a wedge-tailed shearwater colony within the project area since a walk through was not done to search for burrows. The Service recommends conducting surveys throughout the project area during the species' breeding season (March through November) to determine the presence and location of nesting areas (*i.e.*, burrows) in the vicinity of the project area.

Unlike other Hawaiian seabird species, wedge-tailed shearwaters nest in littoral vegetation along coastlines. Nesting adults, eggs, and chicks are particularly susceptible to impacts from human disturbance and predators. If it is found that wedge-tailed shearwaters nest within the proposed project area and the project involves ground disturbance, time the project construction outside of the breeding season. If outdoor lighting is used, use light shields that are completely opaque, appropriately sized, and positioned so that the bulb is only visible from below and that light from the shielded source cannot be seen from the beach. The Service recommends the Final EIS

evaluate potential impacts from the proposed project on the wedge-tailed shearwater, and identify measures to avoid and minimize such impacts.

Hawaiian Waterbirds

Hawaiian waterbirds are found in fresh and brackish-water marshes, natural or man-made ponds. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur, including standing water created during the construction phase of the project. Hawaiian waterbirds are known to be found at various locations within the vicinity of the proposed project area such as; Waimea River and valley, Ukoa Marsh, Turtle Bay, and James Campbell National Wildlife Refuge. Hawaiian stilt nesting occurs from mid-February through August. Hawaiian common gallinule nest year-round, but mostly from March through August. Threats to these species include non-native predators, habitat loss, and habitat degradation.

Hawaiian waterbirds, in particular, the Hawaiian stilt, is known to nest in sub-optimal locations (*e.g.*, any ponding water) if present. Hawaiian waterbirds attracted to sub-optimal habitat may suffer adverse impacts, such as predation, reduced reproductive success due to disturbance within the vicinity of a nest, injury or death from being hit by a vehicle and thus the project may create an attractive nuisance. Therefore, we recommend you design the proposed project in a manner that minimizes the amount of time standing water is present, thereby, reducing the potential to attract waterbirds.

The DEIS does not evaluate impacts of the proposed project on listed Hawaiian waterbirds. The Service is concerned with the potential for standing/ponding water to occur within the project area during construction and/or implementation of the project. We understand the intention of the bioswales is to address the management of storm water runoff; however we are concerned with the potential for standing/ponding water to attract Hawaiian waterbirds. The Service recommends the Final EIS evaluate potential impacts from the proposed project on Hawaiian waterbirds, and identify measures to avoid and minimize such impacts.

Hawaiian goose

Hawaiian geese have been documented at various sites on Oahu and have been seen regularly traversing between Mililani at the Agricultural Park and at a local golf course and to the North Shore of Oahu at James Campbell National Wildlife Refuge and Turtle Bay Resort. They are observed in a variety of habitats, but prefer open areas, such as natural grasslands and shrublands, pastures, wetlands, golf courses, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

The DEIS does not evaluate impacts of the proposed project on the Hawaiian goose. The Service recommends the Final EIS evaluate potential impacts from the proposed project on the Hawaiian goose, and identify measures to avoid and minimize such impacts. We recommend you consider incorporating the following applicable measures into your project description to avoid and minimize impacts to the Hawaiian goose:

- Do not approach, feed, or otherwise disturb Hawaiian geese.
- If Hawaiian geese are observed loafing or foraging within the project area during the Hawaiian goose breeding season (September through April), have a biologist familiar

with the nesting behavior of the Hawaiian goose survey for nests in and around the project area prior to the resumption of any work. Repeat surveys after any subsequent delay of work of three or more days (during which the birds may attempt to nest).

- Cease all work immediately and contact the Service for further guidance if a nest is discovered within a radius of 150 feet of proposed work, or a previously undiscovered nest is found within said radius after work begins.

- In areas where Hawaiian geese are known to be present, post and implement reduced speed limits, and inform project personnel and contractors about the presence of endangered species on-site.

Green sea turtle

The green sea turtle (*Chelonia mydas*) is known to occur in the near shore waters in proximity to the proposed project site, but they are not known to nest in this area. The Service consults on sea turtles and their use of terrestrial habitats (beaches where nesting and/or basking is known to occur), whereas the National Marine Fisheries Service (NMFS) consults on sea turtles and their use of off-shore and open ocean habitats. We recommend that you consult with NMFS regarding the potential impacts from the proposed project to green sea turtles in near-shore and open ocean habitats.

If additional information becomes available, or it is determined that the proposed project may affect federally listed species, we recommend you coordinate with our office so that we may further assist you with ESA compliance.

We thank you for the opportunity to comment on your proposed project and look forward to reviewing the Final EIS. Please contact Stacey Lowe, Fish and Wildlife Biologist (phone: 808-792-9400, email: stacey_lowe@fws.gov) should you have any questions pertaining to this response or require further guidance. When referring to this project, please include this reference number: 01EPIF00-2018-TA-0062.

Sincerely,

Leila Nagatani

for Aaron Nadig
Island Team Manager
Oahu, Kauai, Northwestern
Hawaiian Islands and American Samoa

Literature Cited

Bonaccorso, F. J. 2010. Ope`ape`a: Solving the puzzles of Hawaii's only bat. *Bats: Bat Conservation International* 28: 10-12.

Bryan, E. H., Jr. 1955. The Hawaiian Bat. *The Elepaio* 15(11): 63-64.

Gorresen, P. M., P. M. Cryan, M. M. P. Huso, C. D. Hein, M. Schirmacher, J. H. Johnson, K. Montoya-Aiona, K. W. Brinck, and F. Bonaccorso. 2015. Behavior of the Hawaiian hoary bat (*Lasiurus cinereus semotus*) at wind turbines and its distribution across the North Koolau Mountains, Oahu. Technical Report. University of Hawaii at Hilo. 68pp.

Kahuku Wind Power LLC. 2016. Draft Kahuku Wind Power Habitat Conservation Plan Annual Report FY 2016. Kahuku, Hawaii 19 pp.

Kawailoa Wind Power, LLC. 2013. Kawailoa habitat conservation plan – ITL 14 FY-2013 annual report – year 1. Honolulu, Hawaii. 53 pp.

SWCA Environmental Consultants. 2011. Kawailoa Wind Power Final Habitat Conservation Plan. Prepared for Kawailoa Wind Power, LLC. Honolulu, Hawaii. 151 pp. + Appendices.

Tetra Tech, Inc. 2016. Na Pua Makani Wind Energy Project Habitat Conservation Plan. Prepared for Na Pua Makani Power Partners, LLC. 224 pages + Appendices.

Young, L. 2017. Personal Communication. Preliminary data regarding Newell's shearwater and Hawaiian Petrel calls picked up on song meters on Oahu. Executive Director, Pacific Rim Conservation.

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Aaron Nadig
Island Team Manager
Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)
USFWS Reference: 01EPIF00-2018-TA-0062

Dear Mr. Nadig:

Thank you for your comment letter dated December 28, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *The Service offers the following comments so that impacts to trust resources can be avoided. Our comments are provided under the authorities of the Endangered Species Act of 1973 (ESA), as amended (16 U S.C. 1531 et seq.), the Migratory Bird Treaty Act of 1918 (16 U.S.C. 703-712) (MBTA), and the National Environmental Policy Act of 1969 [42 U.S.C. 4321 et seq.; 83 Stat. 401] (NEPA), among others.*

The DEIS addresses the majority of potential impacts of the proposed project on federally listed threatened and endangered species that may be present in the vicinity of the project area. However, the DEIS does not consider all potential listed species that may occur within the project area and the information provided on the species covered in the DEIS is outdated or lacking. In addition, the Service has additional concerns we recommend be addressed in the Final EIS.

We have reviewed the information you provided and pertinent information in our files, including data compiled by the Hawai'i Biodiversity and Mapping Program as it pertains to listed species and designated critical habitat in accordance with the ESA. There is no federally designated critical habitat within the immediate vicinity of the proposed project. Our data indicate that the following are known threatened or endangered species that may occur or transit through the vicinity of your proposed project area: the federally endangered Hawaiian hoary bat (Lasiurus cinereus semotus), the endangered band-rumped storm-petrel (Oceanodroma castro), the endangered Hawaiian petrel (Pterodroma sandwichensis), and the threatened Newell's shearwater (Puffinus auricularis newelli), and the wedge-tailed shearwater (Puffinus pacificus), a seabird species federally protected under the MBTA (hereafter collectively referred to as Hawaiian seabirds); the endangered Hawaiian stilt

(Himantopus mexicanus knudseni) and the endangered Hawaiian gallinule (Gallinula galeata sandvicensis) (hereafter collectively referred to as Hawaiian waterbirds); and the endangered Hawaiian goose (Branta sandvicensis).

Hawaiian hoary bat

Page 3-9, paragraph 4 of the DEIS states that Hawaiian hoary bats were not detected during the survey on the project site and have been infrequently documented on the island of Oahu. The method used to conduct the vertebrate surveys for the DEIS (i.e., one point count conducted during daylight hours in April) is inadequate to detect the possible presence of bats within the project area since it was conducted during the day and Hawaiian hoary bats are nocturnal. In addition, acoustic recorders are used to detect the presence of bats by recording the ultrasonic sounds emitted by bats. Acoustic recorders were not used during the survey of the project site.

Recent information is available regarding the presence of the Hawaiian hoary bat on Oahu and in particular for the north shore. Recent surveys conducted in the northern Koolau Mountains using acoustic and video recording technology indicate bats are present in this region (Gorresen et al. 2015). Other sites along the north shore of Oahu have documented the presence of Hawaiian hoary bats (e.g., James Campbell National Wildlife Refuge, Kahuku and Kawailoa Wind Farms, Proposed Na Pua Makani Wind Farm, Ukoa Wetland) (SWCA 2011, p. 31 & 35. Kawailoa Wind, LLC 2013, p. 49; Kahuku Wind Power. LLC 2016, p. 9. Tetra Tech 2016, p. 19). Hawaiian hoary bats have been documented to roost in various native as well as non-native tree species such as kukui (Aleurites moluccana), ironwood (Casuarina equisetifolia), eucalyptus (Eucalyptus sp.), mango (Mangifera indica), and lychee (I.itchi chinesis) (Bryan 1955, p. 64; Bonaccorso 2010, p. 11; Kawailoa Wind, LLC 2013, p. 49). According to the Natural Resources Assessment for Improvements Proposed for the Pūpūkea Rural Community Commercial Center, Island of O'ahu (Appendix A of the DEIS), mango and ironwood are present within the proposed project area. Based upon the above information, the Service believes Hawaiian hoary bats may occur within the vicinity of the proposed project and potential roosting trees are present.

Response: Thank you for the updated information on Hawaiian hoary bat presence on O'ahu. *Section 3.4.1* of the Final EIS has been updated to note its potential presence:

> While the 'ope'ape'a had been considered extirpated on Moloka'i and O'ahu with breeding limited to the islands of Kaua'i and Hawai'i, within the last 15 years this presumption was determined to be incorrect (Bonaccorso et al. 2015 in David 2018). ~~has been seen on Hawai'i, Maui, Moloka'i, O'ahu and Kaua'i, it may only live on Hawai'i, Maui, and Kaua'i. A large population might have lived on O'ahu before the early 19th century, but it is based on a single observation of an unknown number of bats (USFWS 2017).~~ Research by U.S. Geological Survey biologists and others reveals that the bat occurs and breeds on all of the main Hawaiian Islands with the exception of Ni'ihau and Kaho'olawe. The species roosts primarily in woody vegetation exceeding 15 feet in height.

Comment: *The Hawaiian hoary bat roosts in both exotic and native woody vegetation and will leave young unattended in trees and shrubs when they forage. If trees or shrubs 15 feet or*

taller are cleared during the pupping season, there is a risk that young bats could inadvertently be harmed or killed since they are too young to fly or may not move away. To minimize potential impacts to the Hawaiian hoary bat, the DEIS states that vegetation greater than 15 feet or taller will not be disturbed during the bat pupping season (June I through September 15). In addition, Hawaiian hoary bans forage for insects from as low as three feet to higher than 500 feet above the ground can become entangled in barbed wire used for fencing. The Service recommends you consider not use barbed wire for fencing as part of the proposed project.

Response: The Final EIS (*Section 3.4.2*) reflects the potential that bats may forage seasonally in the project vicinity, and identifies the steps to be taken to minimize potential impacts to bats:

While it is within the realm of possibility that bats may forage above the project site on a seasonal basis, given the level of disturbance, activity, and the highly manicured trees on site, in the opinion of the avian biologist it is unlikely that a bat would roost within the project site (David 2018). Nonetheless, ~~S~~special care will be taken during construction and when trimming or clearing woody plants taller than 15 feet to minimize any potential adverse effects to the Hawaiian hoary bat (*Lasiurus cinereus semotus*). Between June 1 to September 15, woody vegetation and trees taller than 15 feet will not be disturbed.

No barbed wire fencing will be used on site.

Comment: Hawaiian seabirds
Page 3-10, paragraph 7 of the DEIS states that Newell's shearwaters were not detected during the avian survey on the project site and they are not known to nest on Oahu. Recent research utilizing audio recording technology has revealed that both Newell's shearwater and the Hawaiian petrel may be nesting on Oahu (Young pers. comm. 2017). In addition, there are fallout records of all three listed Hawaiian seabirds from various locations on Oahu. Based upon the information available, the Service believes the three listed Hawaiian seabirds may traverse the project area at night during the breeding season (March 1 to December 15).

Response: In addition to the natural resource survey conducted in April 2017, a supplemental avian survey was conducted in March 2018 to ascertain whether any potential nesting habitat for seabirds occurred on or near the project area. The survey results have been added to the Final EIS (*Section 3.4.1*). The conclusion of the avian biologist has been added to the Final EIS (*Section 3.4.2*):

… a survey of the coastline in the general project area did not record any seabirds, or more importantly any evidence of previous seabird nesting in the area. The coastline between Shark Cove, south past the Sunset Beach Fire Station is an extremely busy area, with very little suitable ground cover for seabird nesting and no evidence that it has been used for burrowing in the recent past.

Comment: *Outdoor lighting associated with the construction phase or the project infrastructure could result in seabird disorientation, fallout, and injury or mortality. Seabirds are attracted to lights and after circling the lights they may become exhausted and collide with*

nearby wires, buildings, or other structures or they may land on the ground. Downed seabirds are subject to increased mortality due to collision with automobiles, starvation, and predation by dogs, cats, and other predators. Young birds (fledglings) traversing the project area between September 15 and December 15, in their first flights from their mountain nests to the sea, are particularly vulnerable. The DEIS states that outdoor lighting will be shielded and directed downward. In addition, the Service recommends you consider avoiding nighttime construction during the seabird fledging period (September 15 through December 15) and installing automatic motion sensor switches and controls on all outdoor lights or turning off lights when human activity is not occurring in the lighted area to avoid and minimize impact to listed seabirds, and provide all project staff and businesses with information about seabird fallout and let them know that downed seabirds can be taken to Sea Life Park for rehabilitation. The Service recommends the Final EIS evaluate potential impacts from the proposed project on Hawaiian seabirds, and identify measures to avoid and minimize such impacts.

Response: EIS *Section 3.17 Visual Resources* provides the lighting guidance to be followed by the rural center: There will be no nighttime construction, with limited lighting for site security. Temporary lights for night will utilize 100 percent cutoff, fully shielded luminaires that are mounted high enough off the ground to be directed perpendicular to the ground.

Exterior lighting at the rural center will comply with Section 205A-71(b), which requires all outdoor lights to be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights and man-made structures. Wall-mounted lights will be downlights or otherwise shielded, and lights used in open or parking areas will full cutoff or fully shielded.

Comment: Wedge-tailed shearwater
Page 3-9, paragraph 7 of the DEIS indicated that no native avian species were detected during the survey on the project site. The avian point count survey conducted for the DEIS (i.e., one point count conducted during late morning hours in April) is inadequate to detect the possible presence of a wedge-tailed shearwater colony within the project area since a walk through was not done to search for burrows. The Service recommends conducting surveys throughout the project area during the species' breeding season (March through November) to determine the presence and location of nesting areas (i.e., burrows) in the vicinity of the project area.

Unlike other Hawaiian seabird species, wedge-tailed shearwaters nest in littoral vegetation along coastlines. Nesting adults, eggs, and chicks are particularly susceptible to impacts from human disturbance and predators. If it is found that wedge- tailed shearwaters nest within the proposed project area and the project involves ground disturbance, time the project construction outside of the breeding season. If outdoor lighting is used, use light shields that are completely opaque, appropriately sized, and positioned so that the bulb is only visible from below and that light from the shielded source cannot be seen from the beach. The Service recommends the Final EIS evaluate potential impacts from the proposed project on the wedge-tailed shearwater, and identify measures to avoid and minimize such impacts.

Response: Please see prior responses. The supplemental avian survey revealed no evidence of previous nesting or burrows in the project area. The lighting scheme to be

followed for the project will minimize impacts to any overflying seabird including the wedge-tailed shearwater.

Comment: Hawaiian waterbirds
Hawaiian waterbirds are found in fresh and brackish-water marshes, natural or man—made ponds. Hawaiian stilts may also be found wherever ephemeral or persistent standing water may occur, including standing water created during the construction phase of the project. Hawaiian waterbirds are known to be found at various locations within the vicinity of the proposed project area such as; Waimea River and valley, Ukoa Marsh, Turtle Bay, and James Campbell National Wildlife Refuge. Hawaiian stilt nesting occurs from mid-February through August Hawaiian common gallinule nest year-round, but mostly from March through August. Threats to these species include non-native predators, habitat loss, and habitat degradation.

Hawaiian waterbirds, in particular, the Hawaiian stilt, is known to nest in sub-optimal locations (e.g., any ponding water) if present. Hawaiian waterbirds attracted to sub-optimal habitat may suffer adverse impacts. such as predation, reduced reproductive success due to disturbance within the vicinity of a nest, injury or death from being hit by a vehicle and thus the project may create an attractive nuisance. Therefore, we recommend you design the proposed project in a manner that minimizes the amount of time standing water is present, thereby, reducing the potential to attract waterbirds.

The DEIS does not evaluate impacts of the proposed project on listed Hawaiian waterbirds. The Service is concerned with the potential for standing/ponding water to occur within the project area during construction and/of implementation of the project. We understand the intention of the bioswales is to address the management of storm water runoff; however we are concerned with the potential for standing/ponding water to attract Hawaiian waterbirds. The Service recommends the Final EIS evaluate potential impacts from the proposed project on Hawaiian waterbirds, and identify measures to avoid and minimize such impacts.

Response: The project will be designed to prevent ponding of water (See Final EIS Figure 2-3 Conceptual Site Plan). Low impact development (LID) bioswales will be vegetated and sited within the core developed area along the buildings, walkways, and access driveways. No standing water will be allowed to persist on site to the point that it becomes an attractive nuisance to Hawaiian waterbirds.

Comment: Hawaiian Goose
Hawaiian geese have been documented at various sites on Oahu and have been seen regularly traversing between Mililani at the Agricultural Park and at a local golf course and to the North Shore of Oahu at James Campbell National Wildlife Refuge and Turtle Bay Resort. They are observed in a variety of habitats, but prefer open areas, such as natural grasslands and shrublands, pastures, wetlands, golf courses, and lava flows. Threats to the species include introduced mammalian and avian predators, wind facilities, and vehicle strikes.

The DEIS does not evaluate impacts of the proposed project on the Hawaiian goose. The Service recommends the Final EIS evaluate potential impacts from the proposed project on the Hawaiian goose, and identify measures to avoid and minimize such impacts. We recommend

you consider incorporating the following applicable measures into your project description to avoid and minimize impacts to the Hawaiian goose:

- *Do not approach, feed, or otherwise disturb Hawaiian geese.*
- *If Hawaiian geese are observed loafing or foraging within the project area during the Hawaiian goose breeding season (September through April), have a biologist familiar with the nesting behavior of the Hawaiian goose survey for nests in and around the project area prior to the resumption of any work. Repeat surveys after any subsequent delay of work of three or more days (during which the birds may attempt to nest).*
    - Cease all work immediately and contact the Service for further guidance if a nest is discovered within a radius of 150 feet of proposed work, or a previously undiscovered nest is found within said radius after work begins.
- *In areas where Hawaiian geese are known to be present, post and implement reduced speed limits and inform project personnel and contractors about the presence of endangered species on-site.*

Response: The DEIS does not evaluate impacts of the proposed project on the Hawaiian goose as there is not suitable habitat and no geese have been reported in the area. Should any geese be found on site, the landowner will have a biologist familiar with the nesting behavior of the Hawaiian goose survey the area, and the Service will be contacted. At that time, protocols to avoid and minimize impacts to the Hawaiian geese will be followed. As there are no Hawaiian geese known to be present, it is unnecessary to implement speed limits or implement the recommendations of the Service.

Comment: Green Sea Turtle
The green sea turtle (Chelonia mydas) is known to occur in the near shore water's in proximity to the proposed project site, but they are not known to nest in this area. The Service consults on sea turtles and their use of terrestrial habitats (beaches where nesting and/or basking is known to occur), whereas the National Marine Fisheries Service (NMFS) consults on sea turtles and their use of off-shore and open ocean habitats. We recommend that you consult with NMFS regarding the potential impacts from the proposed project to green sea turtles in near-shore and open ocean habitats.

Response: The EIS discloses existing groundwater conditions and describes the interaction between groundwater and the nearshore marine environment. The existing groundwater quality conditions at the site reflect the inputs from individual wastewater disposal systems serving the Pūpūkea and Sunset Beach community directly upgradient and by natural processes. The EIS depicts properties served by individual wastewater systems registered by DOH Wastewater Branch (WWB), located within a 3,000-foot wide mauka-makai corridor extending to the upper reach of the Pūpūkea Highlands subdivision (EIS *Figure 3-4*). Over 500 wastewater systems are upgradient of the project site including 279 cesspools, plus 159 aerobic, septic, and soil treatment systems. Using a conservative estimate of 250 gpd of wastewater production per residence, the total wastewater volume being disposed daily through this 3,000-foot wide corridor is more than 100,000 gpd.

Applying average groundwater concentrations of nitrogen and phosphorus identified in monitoring wells created on the project site for the EIS groundwater and marine water quality studies, nitrogen and phosphorus discharges from the upgradient and project site area into the marine environment are estimated at 8.16 and 0.73 pounds daily, respectively. The total groundwater flow along the 560-feet shoreline makai of the project area is estimated at 790,000 gpd (*Appendix B* of the EIS). With dispersion, the flow potentially affects a 760-foot span of coastline.

The marine analysis quantified current nutrient content of water samples (both at the surface and at 40-foot depth) from the shoreline up to 400 meters offshore. The potential increase in nutrients that may result from the project was calculated for the project, and the small increase is likely within the natural variability of the groundwater discharged at the shoreline (*Section 3.7.2*). No short-term or long-term impacts to marine water quality are anticipated from the project.

We contacted National Marine Fisheries Service (NMFS) to request the most recent research findings related to turtle health and water quality. Decades of research into Fibropapillomatosis in green sea turtles has not resulted in a correlation between water quality and this disease that affects sea turtles world-wide. Further, as shown from the EIS analyses conducted, the project is not anticipated to cause short- or long-term impacts to water quality of the offshore area to any discernible extent.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

STATE OF HAWAIʻI AGENCIES

DAVID Y. IGE
GOVERNOR

RODERICK K. BECKER
Comptroller

AUDREY HIDANO
Deputy Comptroller

STATE OF HAWAII
DEPARTMENT OF ACCOUNTING AND GENERAL SERVICES
P.O. BOX 119, HONOLULU, HAWAII 96810-0119

DEC - 5 2017

(P)1380.7

RECEIVED
DEC - 7 2017
G70

Mr. Jeff Overton, AICP, LEED AP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Overton:

Subject: Draft Environmental Impact Statement
Pupukea Rural Community Commercial Center
TMK: (1) 5-9-022:068, 069, 070, and 016

Thank you for the opportunity to comment on the subject project. Based on the information provided we have no comments to offer at this time as the proposed project does not impact any of the Department of Accounting and General Services' projects or existing facilities.

If you have any questions, your staff may call Ms. Gayle Takasaki of the Planning Branch at 586-0584.

Sincerely,

KEITH S. KOGACHI
Acting Public Works Administrator

GT:lnn

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Keith Kogachi
Acting Public Works Administrator
State of Hawai'i
Department of Accounting and General Services
P.O. Box 119
Honolulu, HI 96810-0119

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Kogachi:

Thank you for your comment letter dated December 5, 2017, concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project.

We acknowledge your comment that the Department of Accounting and General Services has no comments at this time as the proposed project does not impact any DAGS projects or existing facilities.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF
HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET, ROOM 330
HONOLULU, HAWAII 96813

Date: 12/26/17
DAR # 5645

RECEIVED
DEC 28 2017
G70

MEMORANDUM

TO: Bruce S. Anderson, PhD
DAR Administrator

FROM: Ryan Okano, PhD, Aquatic Biologist

SUBJECT: Draft Environmental Impact Statement for the Pupukea Rural Community CCommercial Center Project

Request Submitted by: Group 70 International, Inc. and Department of Planning and Permitting

Location of Project: Pupukea, North Shore, Oahu

Brief Description of Project:

The subject project involves four parcels of real property on the North Shore of Oahu mauka of Pupukea Beach Park and Sharks Cove, totaling 2.72 acres and located directly north of the Foodland grocery store.

The project will develop a Rural Community Commercial Center to expand the mix of goods and services available to residents of the Pūpūkea, Waimea, and Kawailoa communities and the region's visitors.

(continued on next page)

Comments:
☐ No Comments ☒ Comments Attached

Thank you for providing DAR the opportunity to review and comment on the proposed project. Should there be any changes to the project plan, DAR requests the opportunity to review and comment on those changes.

Comments Approved: _____ Date: 12/26/17
Bruce S. Anderson, PhD
DAR Administrator

DAR# 5645

Brief Description of Project

The types of businesses and services may include urgent medical care services, credit union, professional services, surf shop and action sports, fitness studio, child care, health food market/deli, mobile food establishments, and restaurant.

One- to two-story buildings will be set back from the highway with parking sited behind to create an open, park-like space along Kamehameha Highway. The small-scale clustered buildings linked by meandering walkways and a central green landscaped area will provide a community gathering place for residents and visitors. Pathways will create pedestrian connectivity across the property from bike paths and bus stops along Kamehameha Highway to the Foodland grocery store, a frequent daily destination for area residents.

Infrastructure to support the new facilities will include driveways, parking shaded by solar panel canopies, storm water runoff controls, water supply, and wastewater management. The planned floor area of the facilities will be approximately 27,000 SF of leasable area (30,000 SF gross floor area).

DAR# 5645

Comments

The Division of Aquatic Resources (DAR) appreciates the work carried out in producing the Draft Environmental Impact Statement for the Pupukea Rural Community Center. This effort depicts the current state of water quality and aquatic biological resources, further more it covers the potential impacts and benefits to these public resources. Detailed examples of Best Management Practices are provided for the construction phase and for the project in its completed state. However, DAR does have a few concerns relevant to the proposed developement.

Although the proposed waste water disposal system seems to be in line with the Department of Health's rules and regulations, DAR is concerned about impacts to the near environments that may results from increases in nutrient concentration, that stem from the proposed on site waste water disposal system. Therefore we pose this question:

Will the proposed on site waste disposal system have adverse impacts on the nearshore marine environment?

In addition to aquatic biological resources, DAR is also interested in access for fishermen and ocean users. For this project in particular we would like more information pertaining to parking. at times parking can be a limited for the Pupukea Marine Life Conservation District. Our concern is if parking within Pupukea Rural Community Center were to become exhausted then patrons of the Pupukea Rural Community Center may end up parking in the parking lot that is traditional used by visitors of the Pupukea Marine Life Conservation District. Therefore, we pose these question:

Is there enough parking to service the anticipated volume of patrons that will visit the Pupukea Rural Community Center?

Will this project ultimately decrease the available parking for the ocean users of this area?

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Bruce S. Anderson, PhD
Administrator
Division of Aquatic Resources
Department of Land and Natural Resources
1151 Punchbowl Street, Room 330
Honolulu, Hawaii 96813

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Dr. Anderson:

Thank you for your comment letter dated December 26, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *The Division of Aquatic Resources (DAR) appreciates the work carried out in producing the Draft Environmental Impact Statement for the Pupukea Rural Community Center. Thiseffort depicts the current state of water quality and aquatic biological resources, further more it covers the potential impacts and benefits to these public resources. Detailed examples of Best Management Practices are provided for the construction phase and for the project in its completed state. However, DAR does have a few concerns relevant to the proposed development. Although the proposed waste water disposal system seems to be in line with the Department of Health's rules and regulations, DAR is concerned about impacts to the near environments that may results from increases in nutrient concentration, that stem from the proposed on site waste water disposal system. Therefore we pose this question: Will the proposed on site waste disposal system have adverse impacts on the nearshore marine environment?*

Response: The EIS discloses existing groundwater conditions and describes the interaction between groundwater and the nearshore marine environment. The existing groundwater quality conditions at the site reflect the inputs from individual wastewater disposal systems serving the Pūpūkea and Sunset Beach community directly upgradient and by natural processes. The EIS depicts properties served by individual wastewater systems registered by DOH Wastewater Branch (WWB), located within a 3,000-foot wide mauka-makai corridor extending to the upper reach of the Pūpūkea Highlands subdivision (EIS *Figure 3-4*). Over 500 wastewater systems are upgradient of the project site including 279 cesspools, plus 159 aerobic, septic, and soil treatment systems. Using a conservative estimate of 250 gpd of wastewater production per residence, the total wastewater volume being disposed daily through this 3,000-foot wide corridor is more than 100,000 gpd.

Applying average groundwater concentrations of nitrogen and phosphorus identified in

monitoring wells created on the project site for the EIS groundwater and marine water quality studies, nitrogen and phosphorus discharges from the upgradient and project site area into the marine environment are estimated at 8.16 and 0.73 pounds daily, respectively. The total groundwater flow along the 560-feet shoreline makai of the project area is estimated at 790,000 gpd (*Appendix B* of the EIS). With dispersion, the flow potentially affects a 760-foot span of coastline.

The marine analysis quantified current nutrient content of water samples (both at the surface and at 40-foot depth) from the shoreline up to 400 meters offshore. The potential increase in nutrients that may result from the project was calculated for the project, and the small increase is likely within the natural variability of the groundwater discharged at the shoreline (*Section 3.7.2*). No short-term or long-term impacts to marine water quality are anticipated from the project.

Comment: *In addition to aquatic biological resources, DAR is also interested in access for fishermen and ocean users. For this project in particular we would like more information pertaining to parking. At times parking can be a* [sic] *limited for the Pupukea Marine Life Conservation District. Our concern is if parking within Pupukea Rural Community Center were to become exhausted then patrons of the Pupukea Rural Community Center may end up parking in the parking lot that is traditional used by visitors of the Pupukea Marine Life Conservation District. Therefore, we pose these question: Is there enough parking to service the anticipated volume of patrons that will visit the Pupukea Rural Community Center? Will this project ultimately decrease the available parking for the ocean users of this area?*

Response: The number of parking spaces to be provided at the rural community commercial center will meet the Honolulu Land Use Ordinance (LUO), Revised Ordinances of Honolulu Chapter 21. Additional spaces will be provided in accord with anticipated requirements for parking associated with food trucks. Parking will be managed and enforced at the site, with time limits for patrons while shopping.

Parking along Kamehameha Highway and at the City and County's Pupukea Beach Park is beyond the jurisdiction of the rural community commercial center's landowner. The 2015 *Pūpūkea Beach Park Master Plan*, which evaluated parking and other resource issues at the park, states: "The City recognizes that demand for shoreline parks may exceed their capacity at times. For parks, capacity is often limited by the availability of parking, although the perception of 'crowdedness' may impact user experience and discourage use." One of the key planning implications of the master plan's Resource Use section is: "The current levels of use seems to be hovering at the balance point between satisfying demand for shoreline recreation and becoming overused and thus impacting user experience and natural resources. Access to the Park (i.e., parking availability) should be maintained as is."

Correspondence with the City Parks Department through the EIS process indicated no concerns to the future effects of the rural center on parks facilities and recreational resources (see EIS Chapter 6 *Agencies and Parties Consulted)*. The Parks Department cited the project's provisions for on-site parking per City LUO requirements.

The proposed project does not include any design features or mitigation measures that specifically eliminate any opportunities for parking on the makai side of Kamehameha Highway. It should be noted that parking on the shoulder of the highway is technically illegal in that it limits access to the grass shoulder area, which is legally a path/sidewalk or would be used to temporarily store a disabled vehicle.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

January 4, 2018

G70 International, Inc.
Attention: Mr. Jeffrey H. Overton, Principal
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

via email: pupukea@g70.design

Dear Mr. Overton:

SUBJECT: Draft Environmental Impact Statement (DEIS) for the Pupukea Rural Community Commercial Center

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comments.

At this time, enclosed are comments from the (a) Engineering Division and (b) Land Division – Oahu District on the subject matter. Should you have any questions, please feel free to call Lydia Morikawa at 587-0410. Thank you.

Sincerely,

Russell Y. Tsuji
Land Administrator

Enclosure(s)
cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

RECEIVED
LAND DIVISION
2017 DEC -1 AM 10:57
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

'17 NOV 27 AM 10:45 ENGINEERING

November 27, 2017

MEMORANDUM

TO:

FROM:

DLNR Agencies:
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
X Div. of State Parks
X Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Draft Environmental Impact Statement (DEIS) for the Pupukea Rural Comminuty Commercial Center
LOCATION: Pupukea, Island of Oahu; TMK Nos. (1) 5-9-022:068, 069, 070 & 016
APPLICANT: City and County of Honolulu, Department of Planning & Permitting

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **January 4, 2018.**

The DEIS can be found on-line at: http://health.hawaii.gov/oeqc/ (Click on the Current Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
(✓) We have no additional comments.
( ) Comments are attached.

Signed:

Print Name: Carty S. Chang, Chief Engineer
Date: 11/29/17

cc: Central Files

DAVID Y. IGE
GOVERNOR OF HAWAII

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

RECEIVED
LAND DIVISION
2017 DEC -4 PM 2:52
DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

November 27, 2017

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division
X Div. of Forestry & Wildlife
X Div. of State Parks
X Commission on Water Resource Management
__Office of Conservation & Coastal Lands
X Land Division – Oahu District
X Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator
SUBJECT: Draft Environmental Impact Statement (DEIS) for the Pupukea Rural Comminuty Commercial Center
LOCATION: Pupukea, Island of Oahu; TMK Nos. (1) 5-9-~~022~~ 011:068, 069, 070 & 016
APPLICANT: City and County of Honolulu, Department of Planning & Permitting

Transmitted for your review and comment is information on the above-referenced project. We would appreciate your comments on this project. Please submit any comments by **January 4, 2018.**

The DEIS can be found on-line at: http://health.hawaii.gov/oeqc/ (Click on the Current Environmental Notice in the middle of the page.)

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Lydia Morikawa at 587-0410. Thank you.

Attachments

( ) We have no objections.
(x) We have no comments.
( ) Comments are attached.

Signed: Darlene Bryant-Takamatsu
Print Name: Darlene Bryant-Takamatsu
Date: 11/30/17

cc: Central Files

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Russell Y. Tsuji
Land Administrator, Land Division
State of Hawai'i
Department of Land and Natural Resources
P.O. Box 621
Honolulu, HI 96809

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Tsuji:

Thank you for coordinating review among the DLNR Divisions of the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. Per your letter dated January 4, 2018, the Engineering Division and Land Division – Oahu District responded to the request for comment. The Engineering Division had no additional comments beyond those provided on the project during the EIS Preparation Notice period when the division sent the National Flood Insurance Maps and links to the Flood Insurance Rate Maps.

The Land Division – O'ahu District had no comments.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR

DR. CHRISTINA M. KISHIMOTO
SUPERINTENDENT

STATE OF HAWAI'I
DEPARTMENT OF EDUCATION
P.O. BOX 2360
HONOLULU, HAWAI'I 96804

OFFICE OF SCHOOL FACILITIES AND SUPPORT SERVICES

RECEIVED
JAN - 3 2018
G70

December 29, 2017

Mr. Jeff Overton, AICP, LEED AP
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96713-4307

Re: Draft Environmental Impact Statement for the Proposed
Pupukea Rural Community Commercial Center Project
Pupukea, Oahu, Hawaii, TMK: 5-9-022: 068, 069, 070, 016

Dear Mr. Overton:

The Department of Education (DOE) has the following comments for the Draft Environmental Impact Statement (DEIS) for the proposed Pupukea Rural Community Center Project (Project). According to the DEIS, the proposed Project is for the development of a commercial complex and associated improvements on approximately 4.56 acres of land located at Pupukea, Haleiwa, Island of Oahu, TMK: 5-9-022: 068, 069, 070, 016.

The DOE has a school bus pick up and drop off location on Pupukea Road, in front of Foodland, near the intersection with Kamehameha Highway. Two buses transport DOE students during the school week. One bus transports students to and from Waialua High School while the other bus transports students to and from Sunset Beach Elementary as well as Kahuku Intermediate and High Schools. The DOE requests your consultation and coordination with DOE Student Transportation Services Branch Manager, James Kauhi, to ensure that there are no impacts to existing DOE transportation services.

Thank you for the opportunity to comment. Should you have any questions, please contact Heidi Meeker of the Planning Section of the Facilities Development Branch at 784-5094.

Respectfully,

Kenneth G. Masden II
Public Works Manager

KGM:jmb

c: James, Kauhi, Student Transportation Services Branch
Ardis Shaw Kim, City & County of Honolulu Department of Planning and Permitting

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Kenneth G. Masden II
Public Works Manager
State of Hawaii
Department of Education
Office of School Facilities and Support Services
P.O. Box 2360
Honolulu, HI 96804

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Masden:

Thank you for your comment letter dated December 29, 2017, concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project.

Comment: *The DOE has a school bus pick up and drop off location on Pupukea Road, in front of Foodland, near the intersection with Kamehameha Highway. Two buses transport DOE students during the school week. One bus transports students to and from Waialua High School while the other bus transports students to and from Sunset Beach Elementary as well as Kahuku Intermediate and High Schools. The DOE requests your consultation and coordination with DOE Student Transportation Services Branch Manager, James Kauhi, to ensure that there are no impacts to existing DOE transportation services.*

Response: We acknowledge that the Department of Education (DOE) has a school bus pick up and drop off location on Pūpūkea Road in front of Foodland near the intersection with Kamehameha Highway. Two buses transport DOE students during the week to and from Sunset Beach Elementary, and to Kahuku Intermediate and High Schools.

G70 will consult and coordinate with DOE Student Transportation Services Branch Manager as requested to ensure the project will not impact existing DOE transportation services.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

EPO 17-299

December 18, 2017

Mr. Jeff Overton
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307
Email: pupukea@g70.design

Dear Mr. Overton:

SUBJECT: Draft Environmental Impact Statement (DEIS) for Pupukea Rural Community Commercial Center, Pupukea, Oahu
TMK: (1) 5-9-022:068, 069, 070, 016

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your DEIS to our office via the OEQC link:
http://oeqc2.doh.hawaii.gov/Other_TEN_Publications/2017-11-23-OA-Chapter-25-DEIS-Pupukea-Rural-Community-Commercial-Center.pdf

We understand from the OEQC publication form project summary that *"Hanapohaku LLC is proposing to develop a rural community commercial center in Pupukea, Oahu to provide a mix of goods and services to residents and visitors of the community. The property is in the Special Management Area and this Draft EIS is being prepared pursuant to Chapter 25-3.3, Revised Ordinances of Honolulu, related to procedural guidelines and assessment requirements. The Property is classified as Urban in the State Land Use Designation, is zoned B-1 Neighborhood Business District established by the City and County of Honolulu Zoning Maps, and is designated for a Rural Community Commercial Center in the North Shore Sustainable Communities Plan. The existing Foodland grocery store is included in the center. Three new buildings will be constructed, one to two stories in height, totaling approximately 30,000 square feet. The small-scale clustered buildings will be set back with a park-like green space, walkways, and bicycle paths fronting Kamehameha Highway. This gathering place can be utilized by mobile food trucks and pedestrian friendly community gatherings and cultural events. Supporting infrastructure will include driveways, parking with solar panel canopies, drainage, water supply, and wastewater treatment facility."*

Hawaii's environmental review laws require Environmental Assessments (EAs) and Environmental Impact Statements (EISs) to consider health in the discussion and the mitigation measures to reduce negative impacts. In its definition of 'impacts,' §11-200-2, Hawaii Administrative Rules (HAR) includes health effects, whether primary (direct), secondary (indirect), or cumulative. Further, §11-200-12(b)(5), HAR, lists public health as one of the criteria for determining whether an action may have a significant impact on the environment.

We advocate that you consider health from a broad perspective; one that accounts for the social, economic, and environmental determinants of health and wellbeing. Community well-being can be impacted by access to physical activity, health care, feelings of social connectedness and safety. Design solutions that take these factors into consideration positively contribute to the social determinants of health in a community, improving the well-being of those who live there by influencing health promoting behaviors. Social determinants contribute to preventable chronic diseases such as asthma, diabetes, obesity, and cardiovascular disease.

In the development and implementation of all projects, EPO strongly recommends regular review of State and Federal environmental health land use guidance. State standard comments to support sustainable healthy design are provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments.

We suggest you review the requirements of the Clean Water Branch (Hawaii Administrative Rules {HAR}, Chapter 11-54-1.1, -3, 4-8) and/or the National Pollutant Discharge Elimination System (NPDES) permit (HAR, Chapter 11-55) at: http://health.hawaii.gov/cwb. If you have any questions, please contact the Clean Water Branch (CWB), Engineering Section at (808) 586-4309 or cleanwaterbranch@doh.hawaii.gov. If your project involves waters of the U.S., it is highly recommended that you contact the Army Corps of Engineers, Regulatory Branch at: (808) 835-4303.

Please note that all wastewater plans must conform to applicable provisions (HAR, Chapter 11-62, "Wastewater Systems"). We reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please review online guidance at: http://health.hawaii.gov/wastewater and contact the Planning and Design Section of the Wastewater Branch (WWB) at (808) 586-4294.

If temporary fugitive dust emissions could be emitted when the project site is prepared for construction and/or when construction activities occur, we recommend you review the need and/or requirements for a Clean Air Branch (CAB) permit (HAR, Chapter 11-60.1 "Air Pollution Control"). Effective air pollution control measures need to be provided to prevent or minimize any fugitive dust emissions caused by construction work from affecting the surrounding areas. This includes the off-site roadways used to enter/exit the project. The control measures could include, but are not limited to, the use of water wagons, sprinkler systems, and dust fences. For questions contact the Clean Air Branch via e-mail at: Cab.General@doh.hawaii.gov or call (808) 586-4200.

Any waste generated by the project (that is not a hazardous waste as defined in state hazardous waste laws and regulations), needs to be disposed of at a solid waste management facility that complies with the applicable provisions (HAR, Chapter 11-58.1 "Solid Waste Management Control"). The open burning of any of these wastes, on or off site, is strictly prohibited. You may wish you review the Minimizing Construction & Demolition Waste Management Guide at: http://health.hawaii.gov/shwb/files/2016/05/constdem16.pdf Additional information is accessible at: http://health.hawaii.gov/shwb. For specific questions call (808) 586-4226.

If noise created during the construction phase of the project may exceed the maximum allowable levels (HAR, Chapter 11-46, "Community Noise Control") then a noise permit may be required and needs to be obtained before the commencement of work. Relevant information is online at: http://health.hawaii.gov/irhb/noise EPO recommends you contact the Indoor and Radiological Health Branch (IRHB) at (808) 586-4700 with any specific questions.

Owners/tenants must comply with State Law (HRS, Chapter 128D, "Environmental Response Law", Chapter 451, "State Contingency Plan"). To identify HEER records related to the property, visit http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/public-records. For information on site assessment and cleanup programs review: http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/site-assessment-and-cleanup-programs. Any specific questions should be directed to the HEER office at (808) 586-4249.

EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal at: https://eha-cloud.doh.hawaii.gov. This site provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings.

The Hawaii Disability and Communication Access Board (DCAB) recommends the inclusion of access for persons with disabilities through all phases of design and construction. New construction and alteration work shall comply with all applicable accessibility requirements. Projects covered by §103-50, Hawaii Revised Statutes, and Hawaii Administrative Rules Title 11 Chapter 216 shall seek advice and recommendations from DCAB on any construction plans prior to commencing with construction. If you have any questions please contact DCAB at (808) 586-8121 or dcab@doh.hawaii.gov.

An example of social influences include access to safe pedestrian corridors such as pathways, sidewalks, bike lanes, greenways and open space. §11-200-17(h), HAR, says EISs must discuss how proposed actions may conform or conflict with any policies for the affected area. This includes Hawaii's 2009 Complete Streets law, which requires the state and counties to establish policies to accommodate all users of the road, no matter age, ability, or mode of transportation.

In 2015, Hawaii passed Act 97 which amended Hawaii's Renewable Portfolio Standards by setting a goal for Hawaii to become one hundred percent renewable by the year 2045. To reach this goal Hawaii should transform its transportation sector from the use of fossil fuels to renewable fuel, electric vehicles (EV)s, and public transit systems including bikeshare programs. To address "range anxiety" and facilitate the adoption of EVs, it is essential that EV charging stations be added to any planned parking areas open to the EV driving public. All future plans should strive to encourage the use of personal bicycles though the development of designated bike lanes and class A bike trails. All efforts should be made to reduce harmful vehicle emissions, reduce vehicle miles travelled (VMT's), encourage alternative modes of transport and increase physical activity.

To better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed an environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: http://www.epa.gov/ejscreen.

We hope this information is helpful. If you have any questions please contact us at DOH.epo@doh.hawaii.gov or call us at (808) 586-4337. Thank you for the opportunity to comment.

Mahalo nui loa,

Laura Leialoha Phillips McIntyre, AICP
Environmental Planning Office

LM:nn

c: Andrew Yani, Hanapohaku LLC (via email: hanapohakullc@gmail.com)
Ardis Shaw-Kim, Dept. of Planning and Permitting (via email: ashaw@honolulu.gov)
DOH: WWB, CWB, IRHB, CAB, PHP, DCAB (via email only)

Attachment: U.S. EPA EJSCREEN Report for Project Area

Please be advised:
The Environmental Planning Office (EPO), along with the Clean Air, Clean Water, and Wastewater Branches moved to Waimano Ridge. The new address, for EPO, **as of December 1, 2017**, is:
Environmental Planning Office, DOH, Hale Ola, 2827 Waimano Home Road #109, Pearl City, Hawaii 96782
Please feel free to come and visit our new offices anytime. Please note that there is a security guard at the bottom of the hill (before entering DOH property). Our office phone numbers, email and website will all remain the same.

Attachment: U.S. EPA EJSCREEN Report for Project Area

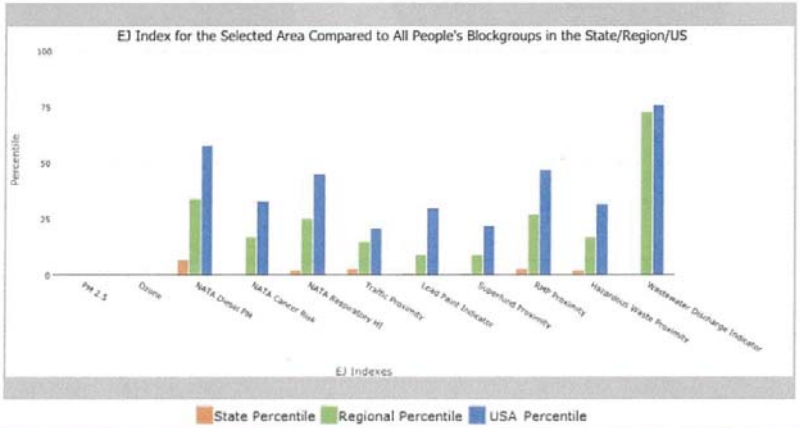
EJSCREEN Report (Version 2017)

1 mile Ring Centered at 21.648803,-158.061491, HAWAII, EPA Region 9

Approximate Population: 1,557

Input Area (sq. miles): 3.14

Selected Variables	State Percentile	EPA Region Percentile	USA Percentile
EJ Indexes			
EJ Index for PM2.5	N/A	N/A	N/A
EJ Index for Ozone	N/A	N/A	N/A
EJ Index for NATA* Diesel PM	7	34	58
EJ Index for NATA* Air Toxics Cancer Risk	0	17	33
EJ Index for NATA* Respiratory Hazard Index	2	25	45
EJ Index for Traffic Proximity and Volume	3	15	21
EJ Index for Lead Paint Indicator	1	9	30
EJ Index for Superfund Proximity	1	9	22
EJ Index for RMP Proximity	3	27	47
EJ Index for Hazardous Waste Proximity	2	17	32
EJ Index for Wastewater Discharge Indicator	N/A	73	76



This report shows the values for environmental and demographic indicators and EJSCREEN indexes. It shows environmental and demographic raw data (e.g., the estimated concentration of ozone in the air), and also shows what percentile each raw data value represents. These percentiles provide perspective on how the selected block group or buffer area compares to the entire state, EPA region, or nation. For example, if a given location is at the 95th percentile nationwide, this means that only 5 percent of the US population has a higher block group value than the average person in the location being analyzed. The years for which the data are available, and the methods used, vary across these indicators. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports.

EJSCREEN Report (Version 2017)

1 mile Ring Centered at 21.648803,-158.061491, HAWAII, EPA Region 9

Approximate Population: 1,557

Input Area (sq. miles): 3.14

Sites reporting to EPA	
Superfund NPL	0
Hazardous Waste Treatment, Storage, and Disposal Facilities (TSDF)	0

EPA United States Environmental Protection Agency

EJSCREEN Report (Version 2017)

1 mile Ring Centered at 21.648803,-158.061491, HAWAII, EPA Region 9

Approximate Population: 1,557

Input Area (sq. miles): 3.14

Selected Variables	Value	State Avg.	%ile in State	EPA Region Avg.	%ile in EPA Region	USA Avg.	%ile in USA
Environmental Indicators							
Particulate Matter (PM 2.5 in µg/m³)	N/A	N/A	N/A	9.9	N/A	9.14	N/A
Ozone (ppb)	N/A	N/A	N/A	41.8	N/A	38.4	N/A
NATA* Diesel PM (µg/m³)	0.00653	0.149	2	0.978	<50th	0.938	<50th
NATA* Cancer Risk (lifetime risk per million)	25	34	9	43	<50th	40	<50th
NATA* Respiratory Hazard Index	0.5	1	9	2	<50th	1.8	<50th
Traffic Proximity and Volume (daily traffic count/distance to road)	150	1000	49	1100	41	590	57
Lead Paint Indicator (% Pre-1960 Housing)	0.13	0.16	54	0.24	49	0.29	41
Superfund Proximity (site count/km distance)	0.067	0.1	59	0.15	48	0.13	53
RMP Proximity (facility count/km distance)	0.057	0.39	9	0.98	3	0.73	6
Hazardous Waste Proximity (facility count/km distance)	0.029	0.1	30	0.12	24	0.093	31
Wastewater Discharge Indicator (toxicity-weighted concentration/m distance)	0	0.04	N/A	13	59	30	40
Demographic Indicators							
Demographic Index	27%	51%	2	47%	21	36%	44
Minority Population	41%	77%	5	59%	31	38%	61
Low Income Population	13%	26%	25	36%	16	34%	17
Linguistically Isolated Population	0%	6%	22	9%	19	5%	44
Population With Less Than High School Education	3%	9%	24	17%	16	13%	18
Population Under 5 years of age	3%	6%	16	7%	18	6%	20
Population over 64 years of age	12%	16%	34	13%	55	14%	45

* The National-Scale Air Toxics Assessment (NATA) is EPA's ongoing, comprehensive evaluation of air toxics in the United States. EPA developed the NATA to prioritize air toxics, emission sources, and locations of interest for further study. It is important to remember that NATA provides broad estimates of health risks over geographic areas of the country, not definitive risks to specific individuals or locations. More information on the NATA analysis can be found at: https://www.epa.gov/national-air-toxics-assessment.

For additional information, see: www.epa.gov/environmentaljustice

EJSCREEN is a screening tool for pre-decisional use only. It can help identify areas that may warrant additional consideration, analysis, or outreach. It does not provide a basis for decision-making, but it may help identify potential areas of EJ concern. Users should keep in mind that screening tools are subject to substantial uncertainty in their demographic and environmental data, particularly when looking at small geographic areas. Important caveats and uncertainties apply to this screening-level information, so it is essential to understand the limitations on appropriate interpretations and applications of these indicators. Please see EJSCREEN documentation for discussion of these issues before using reports. This screening tool does not provide data on every environmental impact and demographic factor that may be relevant to a particular location. EJSCREEN outputs should be supplemented with additional information and local knowledge before taking any action to address potential EJ concerns.

December 18, 201 3/3

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Laura Leialoha Phillips McIntyre, AICP, Program Manager
State of Hawai'i
Department of Health, Environmental Planning Office
P.O. Box 3378
Honolulu, HI 96801-3378

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Phillips McIntyre:

Thank you for your comment letter dated December 18, 2017 concerning the Draft Environmental Impact Statement for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *Hawaii's environmental review laws require Environmental Assessments (EAs) and Environmental Impact Statements (EISs) to consider health in the discussion and the mitigation measures to reduce negative impacts. In its definition of 'impacts,' §11-200-2, Hawaii Administrative Rules (HAR) includes health effects, whether primary (direct), secondary (indirect), or cumulative. Further, §11-200-12(b)(5), HAR, lists public health as one of the criteria for determining whether an action may have a significant impact on the environment.*

Response: The project has been designed to minimize potential negative impacts. The EIS document meets the content and procedural requirements of Chapter 343 HRS and §11-200 HAR. Chapter 3 of the EIS addresses primary, secondary and cumulative effects.

Comment: *We advocate that you consider health from a broad perspective; one that accounts for the social, economic, and environmental determinants of health and wellbeing. Community well-being can be impacted by access to physical activity, health care, feelings of social connectedness and safety. Design solutions that take these factors into consideration positively contribute to the social determinants of health in a community, improving the well-being of those who live there by influencing health promoting behaviors. Social determinants contribute to preventable chronic diseases such as asthma, diabetes, obesity, and cardiovascular disease.*

Response: Design solutions to be incorporated into the rural community commercial center small-scale clustered buildings linked by meandering walkways and a central green landscaped area that will provide a community gathering place for residents and visitors. Walkways will create pedestrian connectivity across the property from bike paths and bus

stops along Kamehameha Highway to the Foodland grocery store, a frequent daily destination for area residents. Vehicle access can periodically be blocked from the hardscaped area adjacent to the central green to allow for periodic pedestrian-friendly community gatherings and cultural events, such as art shows, farmers' markets, mobile food trucks, and music and dance performances.

A pedestrian walkway will be added along the Kamehameha Highway frontage to improve access by pedestrians and bicyclists to the bus stops, beach park, and signaled intersection at Pūpūkea Road.

Comment: *In the development and implementation of all projects, EPO strongly recommends regular review of State and Federal environmental health land use guidance. State standard comments to support sustainable healthy design are provided at: http://health.hawaii.gov/epo/landuse. Projects are required to adhere to all applicable standard comments.*

Response: We appreciate the reference you have provided for standard comments to support sustainable and healthy design. We have reviewed the relevant standard comments, particularly those related to water, wastewater. Discussions on relevant comments are included in *Chapter 3.0* of the Final EIS.

Comment: *We suggest you review the requirements of the Clean Water Branch (Hawaii Administrative Rules {HAR}, Chapter 11-54-1.1, -3, 4-8) and/or the National Pollutant Discharge Elimination System (NPDES) permit (HAR, Chapter 11-55) at: http://health.hawaii.gov/cwb. If you have any questions, please contact the Clean Water Branch (CWB), Engineering Section at (808) 586-4309 or cleanwaterbranch@doh.hawaii.gov. If your project involves waters of the U.S., it is highly recommended that you contact the Army Corps of Engineers, Regulatory Branch at: (808) 835-4303.*

Response: As discussed in *Sections 3.5 and 3.6* of the EIS, the project will comply with the requirements of the Clean Water Branch. A National Pollutant Discharge Elimination System permit for construction will be obtained for the project prior (refer to *Table 1-1 Required Reviews and Permits* in the EIS).

Comment: *Please note that all wastewater plans must conform to applicable provisions (HAR, Chapter 11-62, "Wastewater Systems"). We reserve the right to review the detailed wastewater plans for conformance to applicable rules. Should you have any questions, please review online guidance at: http://health.hawaii.gov/wastewater and contact the Planning and Design Section of the Wastewater Branch (WWB) at (808) 586-4294.*

Response: The project team has met with the Department of Health Wastewater Branch (WWB) to discuss the recommended wastewater treatment system planned for the project location. This information is presented in the EIS *Section 2.4.1 Infrastructure Components*, *Section 3.5 Groundwater*, and *Appendix H*. The wastewater treatment system will comply with all requirements of HAR Chapter 11-62 and will undergo review prior to approval by the WWB.

Comment: *If temporary fugitive dust emissions could be emitted when the project site is prepared for construction and/or when construction activities occur, we recommend you review the need and/or requirements for a Clean Air Branch (CAB) permit (HAR, Chapter 11-60.1 "Air Pollution Control"). Effective air pollution control measures need to be provided to prevent or minimize any fugitive dust emissions caused by construction work from affecting the surrounding areas. This includes the off-site roadways used to enter/exit the project. The control measures could include, but are not limited to, the use of water wagons, sprinkler systems, and dust fences. For questions contact the Clean Air Branch via e-mail at: Cab.General@doh.hawaii.gov or call (808) 586-4200.*

Response: Project construction will comply with Clean Air Branch requirements. Specific dust control will be documented in a dust control plan for the project, to prevent fugitive dust from becoming airborne and crossing the property line (EIS *Section 3.14 Air Quality*).

Comment: *Any waste generated by the project (that is not a hazardous waste as defined in state hazardous waste laws and regulations), needs to be disposed of at a solid waste management facility that complies with the applicable provisions (HAR, Chapter 11-58.1 "Solid Waste Management Control"). The open burning of any of these wastes, on or off site, is strictly prohibited. You may wish you review the Minimizing Construction & Demolition Waste Management Guide at: http://health.hawaii.gov/shwb/files/2016/05/constdem16.pdf. Additional information is accessible at: http://health.hawaii.gov/shwb. For specific questions call (808) 586-4226.*

Response: Construction waste generated by the project will be disposed of at a solid waste disposal facility in compliance with applicable provisions.

Comment: *If noise created during the construction phase of the project may exceed the maximum allowable levels (HAR, Chapter 11-46, "Community Noise Control") then a noise permit may be required and needs to be obtained before the commencement of work. Relevant information is online at: http://health.hawaii.gov/irhb/noise EPO recommends you contact the Indoor and Radiological Health Branch (IRHB) at (808) 586-4700 with any specific questions.*

Response: A Noise Assessment for the project was conducted for the EIS. Noise minimization and mitigation for both the construction phase, and long-term operations, are documented in the EIS (*Section 3.15 Noise*).

Comment: *Owners/tenants must comply with State Law (HRS, Chapter 128D, "Environmental Response Law", Chapter 451, "State Contingency Plan"). To identify HEER records related to the property, visit http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/public-records. For information on site assessment and cleanup programs review: http://eha-web.doh.hawaii.gov/eha-cma/Leaders/HEER/site-assessment-and-cleanup-programs. Any specific questions should be directed to the HEER office at (808) 586-4249.*

Response: There are no HEER records for any parcels associated with the project.

Comment: *EPO also encourages you to examine and utilize the Hawaii Environmental Health Portal at: https://eha-cloud.doh.hawaii.gov, This site provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings*.

Response: We appreciate the resource you have provided through the Hawai'i Environmental Health Portal. Applicable information has been incorporated into the EIS.

Comment: *The Hawaii Disability and Communication Access Board (DCAB) recommends the inclusion of access for persons with disabilities through all phases of design and construction. New construction and alteration work shall comply with all applicable accessibility requirements. Projects covered by §103-50, Hawaii Revised Statutes, and Hawaii Administrative Rules Title 11 Chapter 216 shall seek advice and recommendations from DCAB on any construction plans prior to commencing with construction. If you have any questions, please contact DCAB at (808) 586-8121 or dcab@doh.hawaii.gov.*

Response: The DCAB will review the traffic plan to be submitted in the development permit reviews.

Comment: *An example of social influences include access to safe pedestrian corridors such as pathways, sidewalks, bike lanes, greenways and open space. §11-200-17(h), HAR, says EISs must discuss how proposed actions may conform or conflict with any policies for the affected area. This includes Hawaii's 2009 Complete Streets law, which requires the state and counties to establish policies to accommodate all users of the road, no matter age, ability, or mode of transportation.*

Response: Chapter 4 of the Final EIS has been updated to include Hawaii's Complete Streets policy as codified in HRS 264-20.5 Complete Street, and the Revised Ordinances of Honolulu 12-15 implementing the State policy for the City and County of Honolulu.

Comment: *In 2015, Hawaii passed Act 97 which amended Hawaii's Renewable Portfolio Standards by setting a goal for Hawaii to become one hundred percent renewable by the year 2045. To reach this goal Hawaii should transform its transportation sector from the use of fossil fuels to renewable fuel, electric vehicles (EV)s, and public transit systems including bikeshare programs. To address "range anxiety" and facilitate the adoption of EVs, it is essential that EV charging stations be added to any planned parking areas open to the EV driving public. All future plans should strive to encourage the use of personal bicycles though the development of designated bike lanes and class A bike trails. All efforts should be made to reduce harmful vehicle emissions, reduce vehicle miles* travelled (VMT's), encourage alternative modes of transport and increase physical activity.

Response: The project supports a variety of sustainability initiatives including renewable energy use and reduction of range anxiety for electric vehicles. As described in *Chapter 2.0* and *Section3.16 Infrastructure and Utilities* in the EIS, the Pūpūkea Rural Community Commercial Center will utilize photovoltaic panels to generate electricity 526,000 kilowatt hours annually, approximately one-third of the anticipated electrical demand. An electric

vehicle (EV) charging station and dedicated parking will be included in the parking area for EV-driving patrons of the rural center. Bicycle parking will also be included as a part of the project to promote alternative modes of transportation and reduce vehicle emissions on the North Shore.

Comment: *To better protect public health and the environment, the U.S. Environmental Protection Agency (EPA) has developed an environmental justice (EJ) mapping and screening tool called EJSCREEN. It is based on nationally consistent data and combines environmental and demographic indicators in maps and reports. EPO encourages you to explore, launch and utilize this powerful tool in planning your project. The EPA EJSCREEN tool is available at: http://www.epa.gov/ejscreen.*

Response: We appreciate you providing us with the link to the US Environmental Protection Agency Environmental Justice Mapping and Screening Tool (EJSCREEN). We have reviewed the map for the project area and utilized applicable environmental and demographic information in the EIS.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR OF HAWAII

VIRGINIA PRESSLER, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P. O. BOX 3378
HONOLULU, HI 96801-3378

In reply, please refer to:
File:

LUD – 1 5 9011 068 etc
DEIS Pupukea Rural
Comm Center-ID3796

December 19, 2017

Mr. Jeff Overton AICP LEED AP
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96816
Email: pupukea@g70.design

Dear Mr. Overton:

Subject: Draft Environmental Impact Statement (DEIS)
Pupukea Rural Community Center
59-714 Kam Highway, Haleiwa, Oahu 96712
TMK (1) 5-9-011: 068, 069, 070, 016

Thank you for your informative meeting on December 1, 2017 and for the opportunity to provide comments for the subject DEIS. As discussed in our meeting, a wastewater treatment plant will be required to be designed and constructed in accordance with applicable requirements of Chapter 11-62, Hawaii Administrative Rules for the subject project. We fully support the use of absorption beds instead of injection wells for the subject project.

Please be informed that the proposed wastewater systems for the development may have to include design considerations to address any effects associated with the construction of and/or discharges from the wastewater systems to any public trust, Native Hawaiian resources or the exercise of traditional cultural practices.

Should you have any questions, please contact our Planning and Design Section at 586-4294.

Sincerely,

SINA PRUDER, P.E., CHIEF
Wastewater Branch

LM:sp

c: Ms. Laura McIntyre, DOH-EPO, via email
Ms. Ardis Shaw-Kim, C&C of Honolulu, DPP, **via mail**

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Sina Pruder, P.E.
Chief, Wastewater Branch
State of Hawai'i, Department of Health
P.O. Box 3378
Honolulu, HI 96801-3378

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Pruder:

Thank you for your comment letter dated December 19, 2017, concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project.

Comment: *As discussed in our meeting, a wastewater treatment plant will be required to be designed and constructed in accordance with applicable requirements of Chapter 11-62, Hawaii Administrative Rules for the subject project. We fully support the use of absorption beds instead of injection wells for the subject project.*

Please be informed that the proposed wastewater systems for the development may have to include design considerations to address any effects associated with the construction of and/or discharges from the wastewater systems to any public trust, Native Hawaiian resources or the exercise of traditional cultural practices.

Response: Your comments reiterate our discussion of December 1, 2017 agreeing that a wastewater treatment plant for the project will be required to be designed and constructed in accordance with applicable requirements of Chapter §11-62, Hawaii Administrative Rules. The Wastewater Branch is in support of using absorption beds instead of injection wells for the project. We understand that the proposed wastewater system may need to include design considerations to address any effects associated with the construction of and/or discharges from the wastewater systems to any public trust, Native Hawaiian resources or the exercise of traditional cultural practices.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DAVID Y. IGE
GOVERNOR

JADE T. BUTAY
INTERIM DIRECTOR

Deputy Director
ROSS M. HIGASHI
EDWIN H. SNIFFEN
DARRELL T. YOUNG

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:
DIR 1504, HWY 2396
HWY-PS 2.6242

December 18, 2017

RECEIVED
DEC 20 2017
G70

Mr. Jeff Overton, AICP
G70
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Overton:

Subject: Draft Environmental Impact Statement, Pupukea Rural Community Commercial Center
Hanapohaku, LLC and Sullivan Family Limited Partnership
Oahu, Koolauloa, Pupukea, TMK: (1) 5-9-022: 068-070, 016

Hanapohaku, LLC proposes to develop a commercial center in the town of Pupukea in coordination with the existing Foodland Supermarket. The proposed center would provide access to goods and services to residents in Pupukea and along the North Shore. Primary access to the center will be via a consolidated driveway to Kamehameha Highway, State Route 83.

The project will require a Special Management Area Permit issued by the City and County of Honolulu. An environmental impact statement was prepared in accordance with Chapter 343 Hawaii Revised Statues and associated rules.

Representatives of the developer and the Hawaii Department of Transportation (HDOT) met on November 20, 2017, to discuss the development and proposed traffic access and mitigation measures.

After HDOT internal consultation, it has been determined that the proposed traffic mitigation and improvements proposed for the development largely satisfy our concerns. The current remaining issue relates to a proposed crosswalk crossingKamehameha Highway at Pahoe Street. The HDOT finds a crosswalk desirable but still has concerns related to pedestrian safety. The project traffic consultant, Fehr & Peers, is developing a course of action to address those concerns.

If you have any questions, contact Ken Tatsuguchi, Engineering Program Manager, Highways Division, Planning Branch at (808) 587-1830. File Review No. 2017-067A

Sincerely,

JADE T. BUTAY
Interim Director of Transportation

c: Ardis Shaw Kim (Department of Planning and Permitting)

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Ken Tatsuguchi, P.E. Head Planning Engineer
State of Hawai'i, Department of Transportation
Highways Division, Planning Branch
869 Punchbowl Street, Room 301
Honolulu, Hawai'i 96813
ken.k.tatsuguchi@hawaii.gov

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Tatsuguchi:

Thank you for your comment letter dated December 18, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comments: *The project will require a Special Management Area Permit issued by the City and County of Honolulu. An environmental impact statement was prepared in accordance with Chapter 343 Hawaii Revised statues* [sic] *and associated rules. Representatives of the developer and the Hawaii Department of Transportation (HDOT) met on November 20, 2017, to discuss the development and proposed traffic access and mitigation measures. After HDOT internal consultation, it has been determined that the proposed traffic mitigation and improvements proposed for the development largely satisfy our concerns. The current remaining issue relates to a proposed crosswalk crossing Kamehameha Highway at Pahoe Street. The HDOT finds a crosswalk desirable but still has concerns related to pedestrian safety. The project traffic consultant, Fehr & Peers, is developing a course of action to address those concerns.*

Response: We acknowledge that HDOT is largely satisfied with the traffic mitigation and improvements proposed for the development. The project team will continue to work with HDOT to determine the suitability of a crosswalk on Kamehameha Highway at Pāhoe Road and to address pedestrian safety.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

OFFICE OF PLANNING
STATE OF HAWAII

235 South Beretania Street, 6th Floor, Honolulu, Hawaii 96813
Mailing Address: P.O. Box 2359, Honolulu, Hawaii 96804

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: http://planning.hawaii.gov/

RECEIVED
JAN 10 2018
G70

DTS201801051429NA

January 8, 2018

Ms. Kathy K. Sokugawa
Acting Director
City and County of Honolulu
Department of Planning and Permitting
650 S. King Street, 7th Floor
Honolulu, Hawaii 96813

Attention: Ardis Shaw Kim

Dear Ms. Sokugawa:

Subject: Draft Environmental Impact Statement for the Pupukea Rural Community Commercial Center, Pupukea, Haleiwa, Oahu
TMK: (1) 5-9-011: 016, 068, 069, and 070

Thank you for the opportunity to provide comments on the Draft Environmental Impact Statement (DEIS) for the Pupukea Rural Community Commercial Center project. The DEIS review material was transmitted to our office by letter dated November 16, 2017.

It is our understanding that this project proposed by Hanapohaku, LLC, seeks to develop a commercial center that will offer a mix of goods and services to residents and visitors of the North Shore beach communities of Pupukea, Waimea and Kawailoa.

The goal of this project is to support local businesses that complement and strengthen commerce of these North Shore communities, while preserving its rural character. The types of businesses and services may include urgent medical care services, a credit union, professional services, surf shops and action sports, fitness studios, childcare, health food markets, mobile food establishments, and restaurants. The new center will provide employment opportunities for area residents and may reduce the need of area residents from making for long commutes to job centers in other parts of Oahu.

The Office of Planning (OP) has reviewed the transmitted material and has the following comments to offer:

Our Environmental Impact Statement Preparation Notice (EISPN) response letter dated May 10, 2017 (Reference No. P-15597), recommended that the DEIS:

- Contact the City and County of Honolulu, Department of Planning and Permitting (DPP) on Special Management Area (SMA) use permit requirements.
- Evaluate the project's consistency with all parts of the Hawaii State Planning Act, Hawaii Revised Statutes (HRS) Chapter 226.
- Assess the project's ability to meet the objectives and policies of the Hawaii Coastal Zone Management (CZM) program, as listed in HRS § 205A-2.
- Analyze the impact of stormwater inundation, develop mitigation strategies to combat the effects of polluted runoff to the surface and marine water resources along the North Shore of Oahu, and consider the use of low-impact development features in the planning and design use of design elements in the commercial center's layout.

OP acknowledges that the comments and concerns cited above in our EISPN letter have been addressed in the DEIS. Furthermore, the DEIS is prepared for the SMA-Major permit assessment requirements of the proposed action pursuant to Revised Ordinances of Honolulu (ROH), Chapter 25.

We have no further comments at this time. If you have any questions regarding this comment letter, please contact Joshua Hekekia of our office at (808) 587-2845.

Sincerely,

Leo R. Asuncion
Director

c: ✓Mr. Jeff Overton, Group 70 International, Inc.

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Leo R. Asuncion, Director
Office of Planning
State of Hawaii
P.O. Box 2359
Honolulu, HI 96804

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Asuncion:

Thank you for your comment letter dated January 8, 2018, concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project.

Comment: *Our Environmental Impact Statement Preparation Notice (EISPN) response letter dated May 10, 2017 (Reference No. P-15597), recommended that the DEIS:*

- *Contact the City and County of Honolulu, Department of Planning and Permitting (DPP) on Special Management Area (SMA) use permit requirements.*
- *Evaluate the project's consistency with all parts of the Hawaii State Planning Act, Hawaii Revised Statutes (HRS) Chapter 226.*
- *Assess the project's ability to meet the objectives and policies of the Hawaii Coastal Zone Management (CZM) program, as listed in HRS § 205A-2.*
- *Analyze the impact of stormwater inundation, develop mitigation strategies to combat the effects of polluted runoff to the surface and marine water resources along the North Shore of Oahu, and consider the use of low-impact development features in the planning and design use of design elements in the commercial center's layout.*

OP acknowledges that the comments and concerns cited above in our EISPN letter have been addressed in the DEIS. Furthermore, the DEIS is prepared for the SMA-Major permit assessment requirements of the proposed action pursuant to Revised Ordinances of Honolulu (ROH), Chapter 25.

Response: We acknowledge your comment that the DEIS answered the comments provided by your office in response to its review of the EIS Preparation Notice, including: contacting the City and County of Honolulu's Department of Planning and Permitting regarding Special Management Area use permit requirements; evaluating the project's

consistency with all parts of the Hawaii State Planning Act, Hawaii Revised Statutes (HRS) Chapter 226; assessing the project's ability to meet objectives and policies of the Coastal Zone Management program as listed in HRS §205A-2.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

UNIVERSITY of HAWAI'I®
MĀNOA

Water Resources Research Center

RECEIVED
DEC 14 2017
G70

December 4, 2017

Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu HI 96813-4307
Attn: Jeff Overton

Mr. Overton:

This is to acknowledge receipt of your letter for review of a draft environmental impact statement for the Pupukea Rural Community Commercial Center project located in Pupukea, Haleiwa, Oahu, Hawaii.

Unfortunately, the Water Resources Research Center does not have the capacity to review the DEIS at this time due to the faculty position vacancy.

While we continue to explore filling the current vacancy, the Center will exclude itself from commentary on this specific DEIS.

Sincerely,

Darren T. Lerner, PhD
Interim Director

2540 Dole Street, Holmes Hall 283
Honolulu, Hawai'i 96822
Telephone: (808) 956-7847
Fax: (808) 956-5044
An Equal Opportunity/Affirmative Action Institution

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Darren T. Lerner, PhD
Interim Director
Water Resources Research Center
University of Hawaii at Manoa

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Dr. Lerner:

Thank you for your comment letter dated December 4, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project.

Comment: *Unfortunately, the Water Resources Research Center does not have the capacity to review the DEIS at this time due to the faculty position vacancy.*

While we continue to explore filling the current vacancy, the Center will exclude itself from commentary on this specific DEIS.

Response: We understand from your comments that the Water Resource Research Center does not have the capacity to review the DEIS at this time due to the faculty position vacancy and has excluded itself from commentary on this specific DEIS.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

City and County of Honolulu Agencies

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com

KIRK CALDWELL, MAYOR

BRYAN P. ANDAYA, Chair
KAPUA SPROAT, Vice Chair
DAVID C. HULIHEE
KAY C. MATSUI
RAY C. SOON

ROSS S. SASAMURA, Ex-Officio
JADE T. BUTAY, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

December 11, 2017

RECEIVED
DEC 14 2017
G70

Mr. Jeff Overton
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Overton:

Subject: Your Letter Dated November 16, 2017 Requesting Comments on the Draft Environmental Impact Statement for the Proposed Pupukea Rural Community Commercial Center Project in Haleiwa – Tax Map Key: 5-9-022: 068, 069, 070, 016

Thank you for the opportunity to comment on the proposed commercial center.

The existing water system is adequate to accommodate the proposed commercial center. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

Water for Life . . . Ka Wai Ola

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ernest Y.W. Lau, P.E., Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 S. Beretania Street
Honolulu, HI 96843

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Lau:

Thank you for your comment letter dated December 11, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project.

Comment: *The existing water system is adequate to accommodate the proposed commercial center. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.*

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage. The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

Response: We understand from your comments that the existing water system in the vicinity of the proposed project is adequate to accommodate the proposed commercial center based on current data. The final decision regarding water availability will be confirmed when the building permit application is submitted for approval. Water System Facilities Charges for resource development, transmission and daily storage will be paid by the applicant. On-site fire protection requirements will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

ARCHITECTURE // CIVIL ENGINEERING // INTERIOR DESIGN // PLANNING & ENVIRONMENT

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 768-4567
Web site: www.honolulu.gov

KIRK CALDWELL
MAYOR

ROBERT J. KRONING, P.E.
DIRECTOR

MARK YONAMINE, P.E.
DEPUTY DIRECTOR

January 9, 2018

RECEIVED
JAN 12 2018
G70

G70
ATTN: Jeff Overton
925 Bethel Street
Honolulu, HI 96813

Mr. Overton,

Subject: Draft Environmental Impact Statement for Pupukea Rural Community Commercial Center

Thank you for the opportunity to review and comment. The Department of Design and Construction, Facilities Division has some comments. I have included them for your review.

Should you have any further questions about these comments, please contact Clifford Lau at 768-8483.

Sincerely,

Robert J. Kroning, P.E.
Director

RJK:ms(710518)

Figure 2-3 Cont.

school or worship in the area from Ka'ena Point to Crawford's Home near Kahuku. Additional anticipated tenants include an urgent medical care clinic and pharmacy.

Development of the rural center will create financial benefits in terms of construction employment and spending, and County real property tax. Construction spending, including tenant improvements, is projected at $17.8 million. Construction employment is estimated at 45 full-time equivalent positions for site work, infrastructure, carpentry, and landscape. The annual City and County of Honolulu Real Property taxes currently paid are approximately $36,000. With completion and occupancy of the rural center, the County real property taxes will increase to approximately $148,600 per year.

Long-term employment is estimated at 86 full time jobs. With stabilized revenues, the projected State Income Taxes are estimated at $2.2 million annually. The estimated State of Hawai'i General Excise Tax is approximately $103,664 per year.

The tenant businesses will provide goods and services to residents, which would otherwise require vehicle trips to commercial centers in Hale'iwa or Central O'ahu. The project will positively impact economic opportunities by adding business opportunity for Hawai'i entrepreneurs, and by adding jobs within the region. In turn, area residents that work at the center can avoid long commutes to job centers in urban areas of O'ahu.

The project will not impact the region's residential demographic – that is, the population or mix of residents.

3.12 PUBLIC SERVICES

3.12.1 Existing Conditions

Police Protection
The Pūpūkea region is under the
(HPD). The area is part of HPD D
Central O'ahu (Mililani).

What will be the impact on the operations of this station with this significant commercial development across the street. It appears that given the size and location of the new driveway that traffic conditions will worsen and make exiting and entering the station when these new businesses are in service. The new driveway should not be constructed and traffic routed through the signalized intersection at Pupukea Road.

Fire Protection
First response for medical and f
provided by the City and County o

The Pūpūkea region is in the 5th Battalion area designated by HFD. The region is served by two fire stations:

- The Sunset Beach Fire Station is located across the street from the project site, along Kamehameha Highway.
- The Waialua Fire Station is located 6.1 miles south on Hale'iwa Road, between Pa'ala'a Road and Kaiaka Street.

The Kahuku Fire Station, associated with the HFD 3rd Battilion, is located 9.4 miles north on Kamehameha Highway, between Pu'uluana Street and Enos Road.

HFD works with the City and County of Honolulu Emergency Medical Services and the City and County of Honolulu Emergency Medical Dispatch in providing first response to emergencies.

Medical and Hospital Services
The closest family physician office is located at Ka'ena Kai Clinic in Hale'iwa, approximately 5.6 miles away. The clinic's hours of operation are limited to Monday through Friday between the hours of 9 a.m. and 5 p.m., with walk-in hour Saturdays 10 a.m. to 4 p.m.

The closest medical center with 24-hour availability is the emergency room of Kahuku Medical Center, located 9.1 miles north east of the project site. The medical center offers comprehensive medical services including a primary care clinic, emergency services, lab and imaging services, a pharmacy, rehabilitation services, and inpatient care.

The next closest medical center is Wahiawa General Hospital, located approximately 14.7 miles from the project site. The hospital currently includes 53 beds for its acute facility and 107 beds in its long-term care facility.

Schools
The Pūpūkea community is part of the State Department of Education's Kahuku Complex Area. The public schools closest to the Pūpūkea Rural Community Commercial Center include: Sunset Beach Elementary (1.3 miles north), Waialua Elementary (7.8 miles south), Waialua High and Intermediate (8.7 miles south), Kahuku Elementary (9.2 miles north), Lā'ie Elementary (11.7 miles north), and Kahuku High and Intermediate (13.6 miles north).

Libraries
The state public libraries closest to the Pūpūkea Rural Community Commercial Center include the Waialua Public Library (8.2 miles south) and the Kahuku Public Library (13.7 miles north).

Public Parks and Shoreline
Public parks provide open space and a natural outdoor environment for both residents of Hawai'i and tourists to enjoy. The following City and County of Honolulu public parks are located near the project area: Pūpūkea Beach Park, Waimea Bay Beach Park, 'Ehukai Beach Park, Sunset Beach Neighborhood Park, Pipeline Skatepark, Sunset Beach Park, Sunset Beach Recreation Center. Pu'u o Mahuka Heiau State Histori

This is not correct. It appears that given the size and location of the new driveway that traffic conditions will worsen and make it more difficult exiting and entering the station when these new businesses are in service.

3.12.2 Probable Impac

Police Protection
The rural center is not anticipated to impact police protection services for the area. No mitigation measures are proposed.

Fire Protection
The Pūpūkea Rural Community Commercial Center is not anticipated to impact fire protection services for the area. Coordination with the Board of Water Supply and the HFD will be ongoing to ensure the provision of a water supply that is capable of supply required fire flow for fire protection needs. No additional mitigation measures are proposed.

Peak hour intersection capacity analysis was performed for the Kamehameha Highway/Pūpūkea Road intersection. Traffic analyses are typically conducted to describe the existing conditions (traffic volume, multi-modal users, whether controls exist at intersections e.g. traffic lights or stop signs). Traffic is also projected based on the futu e project ("baseline conditions"), that is, considering regional growth and/o n known pending developments near the project site. Finally, the anticipat ips resulting from the proposed project is analyzed.

Why were there not counts on the weekends? What are the peak periods during the entire week (7 day)?

Table 3-3 shows the results of the existin ns analysis. Traffic counts were conducted during the weekday mid-day a s in November 2016, during the Hale'iwa surf competition and when local s

Table 3-3 Existing Intersection Levels of Service

Intersection	Traffic Control	Peak Hour	Delay	Level of Service (LOS)
Kamehameha Highway & Pūpūkea Road	Signal	MID	7.3	A*
		PM	6.9	A*
		SAT	8.4	A*

* During select peak times of the year, drivers do experience temporary delays approaching and traveling through this intersection. However, the overall operations during typical conditions meet or exceed the State of Hawai'i DOT and City & County of Honolulu's minimum desirable operating level of LOS D.

Level of Service (LOS) is used to assign quality levels of traffic based on performance measures and describe the flow of traffic. Six levels are defined, ranging from LOS A representing the least congested operating conditions to LOS F representing the most congested operating conditions. LOS E is considered the "at capacity" operation. The City DPP and State DOT consider LOS D the minimum desired operating standard.

The project should also provide a turnout lane so that northbound vehicles can pass the bus when stopped to load and unload passengers.

Transit Facilities and Services

TheBus is the main public transportation service for the the two regular service bus routes that pass by the pro westbound direction, Route 55 starts in Ala Moana, and travels through Kāne'ohe and along Kamehameha Highway where it passes immediately adjacent to the project site and continues south to Hale'iwa. Complementary eastbound service is also provided in the reverse direction. Route 88A (North Shore Express) starts in Aiea and travels northwest through the project site, and around the northern and eastern perimeter of O'ahu terminating in downtown Honolulu. The northbound bus stop adjacent to the project is located immediately north of the outbound Foodland driveway. The southbound bus stop is located directly across the highway, and includes a turnout lane which allows southbound vehicles to pass the bus while it is stopped to load and unload passengers.

Bicycle Facilities and Activity

There are no separate bicycle paths provided within the immediate vicinity of the project site. However, southbound bicyclists can use the parking lane located on the mauka side of the highway located north of the Sunset Beach Fire Station. This lane serves as a defacto extension of the Ke Ala Pūpūkea Bike Path that ends just north of Puula Road, and it allows cyclists to travel separately from vehicles on the highway.

Peak counts for bicyclists were conducted during the same time as traffic counts. The number of bicyclists at the Kamehameha Highway/Pūpūkea Road intersection ranged from two to 14 during weekday midday and evening peak hours, respectively. The Saturday midday count was 12 bicyclists.

Pedestrian Facilities and Activity

No existing pedestrian sidewalks are provided on Kamehameha Highway in the immediate vicinity of the project site. Crosswalks are provided across three of the four legs of the signalized Kamehameha Highway/Pūpūkea Road intersection, with no crosswalk provided across the south leg of the highway.

Pedestrian counts during peak periods showed that the highest volumes occurred during the Saturday midday peak hour with 48 people crossing at the Kamehameha Highway/Pūpūkea Road intersection. Weekday counts were lower with nine and 12 pedestrians crossing during the weekday mid-day and evening peak hours, respectively.

3.13.2 Probable Impacts and Mitigation Measures

Access to the rural center and Foodland will be through a combined driveway from Kamehameha Highway located approximately 210 feet north of Pūpūkea Road. The entry will be clearly marked with signage. Two additional changes are proposed to improve traffic flow along Kamehameha Highway in the access area: closure of the existing Foodland driveways on Kamehameha Highway to reduce the total number of access points; and creation of a center two-way left-turn lane to provide a refuge area for traffic turning left into and out of the rural center. The existing driveway connection to Pūpūkea Road will be retained, and only minimal improvements to the Foodland parking area are needed.

This should be improved and all traffic routed through here and all driveways directly to Kamehameha Hwy eliminated.

The main circulation driveway will enter fro ow entry to Foodland, or route rural center users to a parking area mauka tral building. There will be no pedestrian or vehicular access to or from the Road. A curb and sidewalk will be installed along the project's makai edg e existing shoulder width on Kamehameha Highway and eliminating spa long the highway fronting the parcels. The City and County Land Use Ordina eet parking stall per 400 square feet of commerce and business space; applyin),000 square-foot center results in a requirement for 75 spaces. The project anticipates providing approximately 126 parking spaces; most stalls will be sited behind the rural center. Part of the parking area will be shaded by a canopy of photovoltaic panels installed to generate solar energy for on-site usage. An electric vehicle charging station for at least two electric vehicles will be installed.

The northbound bus stop adjacent to the site will need to be relocated with construction of the proposed consolidated site driveway. There are two possible locations along Kamehameha Highway fronting the rural center for the northbound b osswalks at the intersection of Pūpūkea Road and the h solidated access driveway. The TIAR (*Appendix F*) Road and Kamehameha Highway near the existing traff d provide for gaps in traffic and would clearly delineat on will be determined in consultation with HDOT and t s.

This project should construct a turnout lane for the northbound bus stop. It should be located nearer to the signal on Pupukea Road to allow safe crossing of the highway.

Estimates of increased vehicle trips include two calculations. One is a growth factor anticipated without the project ("near term baseline"), and the second is an estimate of vehicle trips to the rural

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Robert J. Kroning, P.E., Director
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

Attention: Facilities Division, Clifford Lau

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Kroning and Mr. Lau:

Thank you for the comments attached to a cover letter from Robert J. Kroning dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: (regarding Figure 2-3): "*What will be impact to access for Fire since it appears that the driveway to the fire station will now be bordered by two busy intersections. The new entry driveway from Kamehameha Hwy should be eliminated and egress be from Pupukea road which has a traffic signal. This would improve the traffic flow in front of the fire station allowing for safe egress for the fire truck. Eliminate new driveway.*"

Response: The Honolulu Fire Department provided comments dated May 11, 2017 to the EIS Preparation Notice. HFD determined that there will be no significant impact to Fire Department services as a result of the project (see HFD letter in *Chapter 6* of the Final EIS).

Detailed information on existing and future (with project) traffic conditions for Kamehameha Highway, which is a State highway facility, have been presented in *Section 3.13* and *Appendix F* of the EIS. The State Department of Transportation (HDOT) has reviewed the traffic study findings and concurs with the proposed plans for highway restriping and traffic management.

The existing access driveway conditions are shown in *Figure 1-2* of the EIS. Two driveways serving the Pūpūkea Foodland currently exist directly across from the Fire Station. The closure of these driveways will consolidate access off Kamehameha Highway at a central driveway location which will improve overall traffic flow in to and out of the rural center. As shown on *Figure 2-3*, a new center turning lane will be created within the existing highway for vehicle traffic movements into or out of the rural center. The addition of this turning lane will enable continued traffic flow in both directions.

Comment: *What will be the impact on the operations of this station with this significant commercial development across the street. It appears that given the size and location of the*

new driveway that traffic conditions will worsen and make existing and entering the station when these new businesses are in service. The new driveway should not be constructed and traffic routed through the signalized intersection at Pupukea Road.

Response: Please see previous response. As described in *Section 3.13* of the EIS, the increased traffic due to population growth on O'ahu combined with future traffic related to the project at the intersection of Kamehameha Highway and Pūpūkea Road during Saturday peak hour traffic would translate to an additional 1.7 second delay over the near-term baseline conditions. This delay could affect one vehicle movement and is not considered a significant intersection impact under HDOT and City and County Department of Transportation Services (DTS) Traffic Review Branch and HDOT criteria.

Comment: *It appears that given the size and location of the new driveway that traffic conditions will worsen and make it more difficult exiting and entering the station when these new businesses are in service. Why were there not counts on the weekends? What are the peak periods during the entire week (7 day)?*

Response: We acknowledge your opinion regarding the traffic on Kamehameha Highway near the intersection with Pūpūkea Road. Please see previous responses provided and the Transportation Impact Analysis Report (TIAR) in *Appendix F* that includes data on existing and future traffic conditions.

The Final EIS text has been corrected to note that Saturday peak period traffic was collected during the busy winter surf and holiday season in early January. The determination of peak periods is shown in Appendix A of the TIAR and are shown in EIS *Table 3* as midday and evening mid-day and Saturday peak hour.

Comment: *This project should also provide a turnout lane so that northbound vehicles can pass the bus when stopped to load and unload passengers. It should be located nearer to the signal on Pupukea Road to allow safe crossing of the highway.*

Response: The plans call for construction of a bus turn-out at the general location you suggest, as described in *Section 3.13* of the EIS. The details of the bus turn-out siting will be developed with HDOT and City DTS to ensure proper design with safety considerations.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 Ulu'ohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 768-3343 • Fax: (808) 768-3381
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR

ROSS S. SASAMURA, P.E.
DIRECTOR AND CHIEF ENGINEER

EDUARDO P. MANGLALLAN
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 17-669

December 13, 2017

RECEIVED
DEC 18 2017
G70

Mr. Jeff Overton
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Overton:

SUBJECT: Draft Environmental Impact Statement, Pupukea Rural Community Commercial Center, TMK: (1) 5-9-022:068, 069, 070, 016

Thank you for the opportunity to review and to give our input regarding the subject project.

Our comments as follows:

- Once construction phase commence, install approved Best Management Practices (BMP) fronting all drainage facilities on Pupukea Road.
- During construction and upon completion of project; any Damages/deficiencies to Pupukea Road right-of-way shall be corrected to City Standards and accepted by the City.
- Please note that Kamehameha Highway is under the jurisdiction of the State Department of Transportation, Highways Division.
- Please note that the Pahoe Road is a private road that is not maintained by the City & County of Honolulu.

If you have any questions, please call Mr. Kyle Oyasato of the Division of Road Maintenance at 768-3697.

Sincerely,

Ross S. Sasamura, P. E.
Director and Chief Engineer

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Ross S. Sasamura, P.E.
Director and Chief Engineer, Department of Facility Maintenance
City and County of Honolulu
1000 Ulu'ohia Street, Suite 215
Kapolei, HI 96707

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Sasamura:

Thank you for your comment letter dated December 13, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *Once construction phase commence, install approved Best Management Practices (BMP) fronting all drainage facilities on Pupukea Road.*

Response: As noted in the EIS sections 3.2 *Geology, Topography and Soils* and 3.6 *Surface Water and Drainage*, best management practices (BMPs) will be installed to comply with all State, County and Federal regulations related to potential erosion or storm water impacts. This will include installation of controls fronting all drainage facilities on Pupukea Road, as well as Kamehameha Highway.

Comment: *During construction and upon completion of project; any Damages/deficiencies to Pupukea Road right-of-way shall be corrected to City Standards and accepted by the City.*

Response: In accordance with City and County ordinance and permit conditions, any damages or deficiencies to Pupukea Road right-of-way will be corrected to City standards and be accepted by the City.

Comment: *Please note that Kamehameha Highway is under the jurisdiction of the State Department of Transportation, Highways Division.*

Response: We acknowledge that Kamehameha Highway and the storm drain system along the highway are owned and maintained by the State of Hawai'i Department of Transportation (see EIS Section 3.6 *Surface Water and Drainage*).

Comment: *Please note that Pahoe Road is a private road that is not maintained by the City & County of Honolulu.*

Response: We acknowledge that Pāhoe Road is a private road that is not maintained by the City and County of Honolulu (see EIS Section 2.2 *Existing Conditions*).

ARCHITECTURE // CIVIL ENGINEERING // INTERIOR DESIGN // PLANNING & ENVIRONMENT

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspxThank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
PHONE: (808) 768-8000 • FAX: (808) 768-6041
DEPT. WEB SITE: www.honoluludpp.org • CITY WEB SITE: www.honolulu.gov

KIRK CALDWELL
MAYOR

KATHY K. SOKUGAWA
ACTING DIRECTOR

TIMOTHY F. T. HIU
DEPUTY DIRECTOR

2017/ED-16(ASK)

January 16, 2018

Mr. Jeffery H. Overton
G70
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Overton:

Subject: Pupukea Rural Community Commercial Center
Draft Environmental Impact Statement (EIS)
Special Management Area Use Permit – Major
Pahoe Road and Kamehameha Highway - Pupukea
Tax Map Keys 5-9-011: 016, 068, 069, and 070

The following comprises the Department of Planning and Permitting (DPP) comments on the Draft EIS for the subject Project.

Site Plans:

All site plans in the Final EIS should include the proposed location of the food trucks and any other mobile establishments.

Sustainable Communities Plan and Unilateral Agreements:

1. The Pupukea Rural Community Center is within the North Shore Sustainable Communities Plan (NSSCP) boundary. Based on the Draft EIS materials, the proposed center appears to be in general conformance with the NSSCP. The Project will have to reflect the rural character of the community and will have to employ strategies to remain compatible with surrounding areas.

2. The Hanapohaku property is subject to a Unilateral Agreement, which was executed in compliance with a zone change (Ordinance 78-76). The Final EIS should address how the requirements of these conditions will be met. A copy of the Unilateral Agreement is enclosed.

Water Quality:

1. The Final EIS should include a narrative explaining the Project's water quality management strategy to ensure compliance with the storm water quality standards.

2. Page 25 of Appendix B of the Draft EIS states:

   The project described in the initial sections of this report has the potential to impact groundwater, surface water, and the near shore marine waters in the following three ways: (1) by the additional consumption of drinking water from the BWS system; (2) by the implementation of the drainage system infrastructure; and (3) by the additional generation of wastewater that will be treated and disposed of onsite. Each of these potential impacts is quantified in the sections following.

   The Final EIS should specify whether this analysis accounts for irrigation that will be needed to support the required landscaping.

3. Sections in Appendix C indicate that the ground water nutrients will be added to the marine environment. Also, page 3-25 of the Draft EIS states:

   The nutrient loading projected to the near shore marine environment has been approximated to increase total nitrogen (TN) by 4.3 percent, possibly bringing the total input at the shoreline from all up gradient sources to a range of 6.8 μM to a maximum of 31.3 μM TN. Correspondingly, the potential increases of total phosphorus (TP) from the project could result in maximum and minimum values at the shoreline of 0.71 μM and 0.37 μM, respectively. These small changes represent less than 1 μM for TN and 0.2 μM for TP, and are likely within the natural variability of the groundwater discharge at the shoreline.

   The Final EIS should report the extent to which established water quality standards will be met or exceeded with the proposal.

Wastewater:

1. The Final EIS should include plans showing the location of the existing wastewater treatment facilities and the possible location of planned facilities and proposed wastewater systems.

2. The last paragraph of Appendix B of the Draft EIS suggests there will be three wastewater treatment systems across the Project site: 1) The existing system on the Foodland parcel; 2) The existing system on TMK 5-9-011: 068; and 3) The proposed system, to be located on the Hanapohaku site. However, the exact design and location of the proposed system has not yet been determined. The Final EIS should include information about these systems.

3. The Final EIS should clarify whether the existing wastewater treatment system will continue in operation or will be abandoned. Page 29, of the Draft EIS suggests the existing system on TMK 5-9-11: 068 will be removed.

Traffic:

1. The Draft EIS contains a Draft Traffic Impact Analysis Report (TIAR). The Final TIAR should be included in the Final EIS and should include a sidewalk along the Foodland frontage of Pupukea Road.

2. Short- and long-term bicycle parking must be provided within this Project. The Final EIS should include a site plan showing the planned location for the bicycle racks.

3. Reconfiguration of the Foodland parking lot, including the elimination of the Kamehameha Highway vehicular access and possible restriping of the parking lot, may require a Conditional Use Permit for joint development. This should be listed as a potential permit requirement in the Final EIS.

Should you have any questions, please contact Ardis Shaw-Kim, of our staff, at 768-8021.

Very truly yours,

Kathy K. Sokugawa
Acting Director

Enclosure: Unilateral Agreement and Declaration for Conditional Zoning

RECORDATION REQUESTED BY:

AFTER RECORDATION, RETURN TO:

RETURN BY: MAIL ( ) PICKUP ( )

TAX MAP KEY: 5-9-11-16

THE ORIGINAL OF THIS DOCUMENT RECORDED AS FOLLOWS
STATE OF HAWAII
OFFICE OF
BUREAU OF CONVEYANCES
Received for record this 25 day of July A.D. 19
at 1:21 o'clock P M and
Recorded at Liber
Pages

UNILATERAL AGREEMENT AND
DECLARATION FOR CONDITIONAL ZONING

THIS INDENTURE, made this 25 day of July, 1978, by M.S.C. ASSOCIATES, a registered Hawaii limited partnership, LUMLEONG ENTERPRISES and ELAINE NIIMI, owners of that parcel of land described in Exhibit "A" and shown on Exhibit "B", attached hereto and made parts hereof, hereinafter referred to as "Declarant,"

WITNESSETH:

WHEREAS, the City Council of the City and County of Honolulu, State of Hawaii, hereinafter referred to as "Council," pursuant to the provisions of Ordinance 4300, Bill No. 167(1973), relating to conditional zoning, is considering a change in zoning from R-6 Residential to B-1 Neighborhood Business for the land described by Exhibits A and B; and

WHEREAS, a public hearing regarding the change of the zoning was held by the Council on June 28, 1978; and

WHEREAS, the Council recommended by its Planning and Zoning Committee Report that the said change in zoning be approved, subject to the following conditions, all of which shall be made a part of the zoning ordinance:

1. That construction plans shall be subject to review and approval by the Director of Land Utilization prior to issuance of the building permit. The purpose of this review shall be to insure that the design is "country-like" in style emphasizing the wooden low-rise Haleiwa character.

2. That the Declarant shall cause to be installed improvements on Pahoe Road and the intersection of Pahoe Road and Kamehameha Highway adequate to effect free-moving and safe ingress and egress to Pahoe Road and Declarant's proposed development. These improvements shall be substantially in accordance with the plan prepared by Austin, Tsutsumi & Associates, Inc., dated December 27, 1977 and filed with the Director of Land Utilization. The improvement plans will be subject to review and approval by the State Department of Transportation and City and County Department of Transportation Services prior to construction.

3. That Declarant will contribute a prorata share (in the ratio that the square footage that Declarant's land bears to all lands lying between Pupukea Homestead Road, Kamehameha Highway and Pahoe Road which may be rezoned pursuant to an application made by the owner or owners thereof) of the cost of improving Kamehameha Highway substantially in accordance with the aforesaid preliminary plan prepared by Austin, Tsutsumi & Associates, Inc., dated December 27, 1977 if other lands lying between Pupukea Homestead Road, Kamehameha Highway and Pahoe Road are in fact rezoned and developed; and the improvements shall be in accordance with requirements of State Department of Transportation and shall be approved by Department of Transportation prior to construction.

WHEREAS, the Declarant has agreed to execute this instrument pursuant to the provisions of said Ordinance No. 4300.

NOW, THEREFORE, Declarant hereby makes the following Declaration:

1. This Declaration is made pursuant to the provisions of Ordinance No. 4300, Bill No. 167(1973), relating to conditional zoning. This Declaration shall become fully effective on the effective date of the zoning ordinance approving the change of zoning for the land from R-6 Residential to B-1 Neighborhood Business for the land described in Exhibits A and B.

2. That Declarant agrees to develop said land in substantial conformance with aforesaid conditions and with the understanding that the issuance of a building permit by the appropriate agency of the City and County of Honolulu shall constitute satisfaction of this agreement; and

3. That the conditions imposed are reasonable and rationally relate to the objective of preserving the public health, safety and general welfare and the further implementation of the General Plan of the City and County of Honolulu.

AND IT IS EXPRESSLY UNDERSTOOD AND AGREED that the conditions imposed in this Declaration shall run with the land and shall bind and constitute notice to all subsequent lessees, grantees, assignees, mortgagees, lienors and any other persons who claim an interest in the land, and the City and County of Honolulu of the State of Hawaii shall have the right to enforce this Declaration by appropriate action at law or suit in equity against all such persons, provided that Declarant or its successors and assigns may at any time file a petition for removal of the conditions and termination of this Unilateral Agreement, such petition to be processed in the same manner as petitions for zone changes.

IN WITNESS WHEREOF, the undersigned has executed this Declaration the day and year first above written.

M.S.C. ASSOCIATES, a Hawaii limited partnership

By M.S.C. ASSOCIATES, INC., General Partner

By _____
Its President

By _____
Its Vice President

LUMLEONG ENTERPRISES

By _____
Its General Partner

_____
ELAINE NIIMI

DECLARANT

78-76

STATE OF HAWAII)
: SS.
CITY AND COUNTY OF HONOLULU)

On this 19th day of July, 1978, before me personally appeared MAN KWONG AU and MITSUYUKI KIDO, to me personally known, who being by me duly sworn, did say that they are the President and Vice President, respectively, of M.S.C. ASSOCIATES, INC., a Hawaii corporation, and a General Partner of M.S.C. ASSOCIATES, a Hawaii limited partnership; and that the seal affixed to the foregoing instrument is the corporate seal of said corporation; that said instrument was signed and sealed in behalf of said corporation by authority of its Board of Directors, and the same officers severally acknowledged the instrument to be the free act and deed of the corporation as such General Partner.

_____
Notary Public, First Circuit, State of Hawaii.

My Commission Expires: May 6, 1979

STATE OF HAWAII)
: SS.
CITY AND COUNTY OF HONOLULU)

On this 25th day of July, 1978, before me appeared ALLAN H. H. LEONG, to me personally known, who, being by me duly sworn, did say that he is a General Partner of LUMLEONG ENTERPRISES, a registered Hawaii limited partnership; that said instrument was signed in behalf of said partnership by authority of the partners; and said ALLAN H. H. LEONG acknowledged the instrument to be the free act and deed of said partnership.

_____
Notary Public, First Judicial Circuit, State of Hawaii.

My commission expires: 5/6/79

78-76

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Kathy Sokugawa
Acting Director, Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, HI 96813

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Sokugawa:

Site Plans:

Comment: *All site plans in the Final EIS should include the proposed location of the food trucks and any other mobile establishments.*

Response: The Conceptual Site Plan (*Figure 2-3* in the EIS) has been updated to show the proposed location of the food trucks; *Figure 3-8* has been added to EIS Section 3.13 to illustrate internal circulation and proposed traffic minimization measures.

Sustainable Communities Plan and Unilateral Agreements:

Comment: *The Pupukea Rural Community Center is within the North Shore Sustainable Communities Plan (NSSCP) boundary. Based on the Draft EIS materials, the proposed center appears to be in general conformance with the NSSCP. The Project will have to reflect the rural character of the community and will have to employ strategies to remain compatible with surrounding areas.*

Response: The NSSCP Land Use Map reproduced in Chapter 1 of the EIS shows the 4.56 acres, now owned by Hanapohaku, as the Rural Community Commercial Center designated for the region. Chapter 2, Section 2.3 and Chapter 4, Table 4-6 of the EIS elaborate on the compatibility of the development with the NSSCP.

Comment: *The Hanapohaku property is subject to a Unilateral Agreement, which was executed in compliance with a zone change (Ordinance 78-76). The Final EIS should address how the requirements of these conditions will be met. A copy of the Unilateral Agreement is enclosed.*

Response: As noted in your letter and attachment, the Project is subject to that certain Unilateral Agreement and Declaration for Conditional Zoning, dated July 25, 1978, recorded in the Bureau of Conveyances in Liber 13034, at Page 726 (the "Unilateral Agreement"). There are three conditions stated in the Unilateral Agreement that must be substantially conformed with in connection with the development of the Project.

Condition No. 1: That construction plans shall be subject to review and approval by the Director of Land Utilization prior to issuance of the building permit. The purpose of this review shall be to insure that the design is "country-like" in style emphasizing the wooden low-rise Haleiwa character.

Response: The proposed buildings will be wooden one- to two-story buildings utilizing an architectural style similar to the prevailing styles in Haleiwa town. The design drawings will be submitted to DPP for review and approval for the issuance of the Building Permit.

Condition No. 2: That the Declarant shall cause to be in installed improvements on Pahoe Road and the intersection of Pahoe Road and Kamehameha Highway adequate to effect free-moving and safe ingress and egress to Pahoe Road and Declarant's proposed development. These improvements shall be substantially in accordance with the plan prepared by Austin, Tsutsumi & Associates, Inc., dated December 27, 1977 and filed with the Director of Land Utilization. The improvement plans will be subject to review and approval by the State Department of Transportation and City and County Department of Transportation Services prior to construction.

Response: This condition contemplated vehicular access to the Project via Pāhoe Road. However, due to concerns raised by residents of Pāhoe Road and lack of access easement rights in favor of the entire Project site, the Project will not have vehicular ingress or egress from Pāhoe Road. As explained in Section 3.13.2, access to the Project will be through a combined driveway from Kamehameha Highway located approximately 210 feet north of Pūpūkea Road. For this reason, the need for Condition No. 2 has been eliminated.

Condition No. 3: That Declarant will contribute a prorate share (in the ratio that the square footage that Declarant's land bears to all lands lying between Pupukea Homestead Road, Kamehameha Highway and Pahoe Road which may be rezoned pursuant to an application made by the owner or owners thereof) of the cost of improving Kamehameha Highway substantially in accordance with the aforesaid preliminary plan prepared by Austin, Tsutsumi & Associates, Inc., dated December 27, 1977, if other lands lying between Pupukea Home Road, Kamehameha Highway and Pahoe Road are in fact rezoned and developed; and the improvements shall be in accordance with the requirements of State Department of Transportation and shall be approved by Department of Transportation prior to construction.

Response: Due to the staleness of the Austin, Tsutsumi & Associates, Inc. traffic mitigation plan, a new traffic study and mitigation plan was prepared as described in Section 3.13. This traffic mitigation plan and improvements will be submitted to the State Department of Transportation for review and approval, and the improvements as so approved will be made as part of the development of the Project. Hanapohaku will pay for the costs of these improvements, although there is an agreement with the Sullivan Entities that own the Foodland parcel to contribute towards such costs.

Water Quality:

Comment: *1. The Final EIS should include a narrative explaining the Project's water quality management strategy to ensure compliance with the storm water quality standards.*

Response: The EIS describes the storm water quality BMPs that will be installed in series to manage and treat on-site storm water (Section 3.6.2). The water quality management strategy to ensure compliance with the City storm water quality standards will be detailed in a Storm Water Quality Report for the project. This report will be submitted to, and reviewed by, the City in conjunction with the detailed construction plans. The report will include a maintenance plan for the permanent BMPs to be installed for long-term storm water quality protection. Maintenance records for permanent BMPs must be maintained for a minimum of five years and are to be made available to the City's Department of Facility Maintenance (DFM) upon request. Additionally, BMPs are subject to inspection by DFM annually.

Comment: *2. Page 25 of Appendix B of the Draft EIS states:*
The project described in the initial sections of this report has the potential to impact groundwater, surface water, and the near shore marine waters in the following three ways: (1) by the additional consumption of drinking water from the BWS system; (2) by the implementation of the drainage system infrastructure; and (3) by the additional generation of wastewater that will be treated and disposed of onsite. Each of these potential impacts is quantified in the sections following.

The Final EIS should specify whether this analysis accounts for irrigation that will be needed to support the required landscaping.

Response: The Final EIS has been modified to acknowledge that irrigation water is included in the high-level planning estimate provided by the Board of Water Supply (BWS) for water use at 3,000 gallons per day per acre.

Comment: *3. Sections in Appendix C indicate that the ground water nutrients will be added to the marine environment. Also, page 3-25 of the Draft EIS states:*
The nutrient loading projected to the near shore marine environment has been approximated to increase total nitrogen (TN) by 4.3 percent, possibly bringing the total input at the shoreline from all up gradient sources to a range of 6.8 μM to a maximum of 31.3 μM TN. Correspondingly, the potential increases of total phosphorus (TP) from the project could result in maximum and minimum values at the shoreline of 0.71 μM and 0.37 μM, respectively. These small changes represent less than 1 μM for TN and 0.2 μM for TP, and are likely within the natural variability of the groundwater discharge at the shoreline.

The Final EIS should report the extent to which established water quality standards will be met or exceeded with the proposal.

Response: The conclusion cited in your comment shows the calculated increases in nutrients projected from groundwater after project implementation (*Section 3.7.2 Probable Impacts and Mitigation Measures*). EIS Section 3.7.1 *Existing Conditions* compares the available water quality data – sampled for the EIS - to Hawai'i Administrative Rules (HAR) §11-54 Water Quality Standards. Comparing the data for current conditions without the project to the more stringent "wet" criteria for open coastal water standard shows the existing water quality

exceeds the standards for NO_{3-} and NH_{4+} along transects 1 and 2 within 100 meters from shore. Additionally, total nitrogen within two feet of the shoreline along of Transect 2 was also exceeded; chlorophyll *a* within 1 foot of the shore for both Transect 1 and 2 exceeded the HAR standard.

It is important to note these samples were taken from waters confined by, or on, the Sharks Cove interior reef flat zone, which is not truly "open coastal waters," that is, beyond the influence of land. For waters beyond the Sharks Cove interior reef flat zone, none of the constituents exceeded the more conservative "wet" criteria standard. The small changes projected for total nitrogen and total phosphorus as a result of the project are likely within the natural variability of the groundwater discharge at the shoreline, and do not represent a significant change in the composition of groundwater released along this shoreline.

Wastewater:

Comment: *1. The Final EIS should include plans showing the location of the existing wastewater treatment facilities and the possible location of planned facilities and proposed wastewater systems.*

Response: The Final EIS has been updated to include the location of the existing IWS as well as the configuration of the proposed wastewater system (*Figure 3-9*).

Comment: *2. The last paragraph of Appendix B of the Draft EIS suggests there will be three wastewater treatment systems across the Project site: 1) The existing system on the Foodland parcel; 2) The existing system on TMK 5-9-011: 068; and 3) The proposed system, to be located on the Hanapohaku site. However, the exact design and location of the proposed system has not yet been determined. The Final EIS should include information about these systems.*

Response: *Section 3.16.2 Infrastructure and Utilities* in the EIS identifies the type of wastewater system to be installed, which will consist of pre-treatment, an aerobic treatment unit (ATU) and absorption beds. The absorption bed area will be sized at double the design flow, to provide for full redundancy of the treated effluent disposal capacity. The beds will be located under the parking lot area to maintain accessibility by maintenance vehicles. The system will have the option of a disinfection stage that can achieve R-2 water quality; that is, recycled water that is both oxidized and disinfected.

The project team has met with State Department of Health (DOH) Wastewater Branch (WWB), which fully supports the use of absorption beds for the project (see Chapter 6 of the FEIS for the Wastewater Branch comment letter dated December 19, 2017 on the DEIS). The details of the final system will be designed and constructed in accordance with HAR Chapter §11-62 Wastewater Systems, as well as with the approval of DOH WWB.

Comment: *3. The Final EIS should clarify whether the existing wastewater treatment system will continue in operation or will be abandoned. Page 29, of the Draft EIS suggests the existing system on TMK 5-9-11: 068 will be removed.*

Response: The EIS wastewater section for future conditions (*Section 3.16.2*) has been updated to clarify that the existing wastewater treatment system will be removed.

Traffic:

Comment: *1. The Draft EIS contains a Draft Traffic Impact Analysis Report (TIAR). The Final TIAR should be included in the Final EIS and should include a sidewalk along the Foodland frontage of Pupukea Road.*

Response: The technical traffic analysis conducted for the project is a Transportation Impact Analysis Report; the revised, final version of the report is included in the Final EIS as *Appendix F*. We acknowledge that DPP has recommending the installation of a new sidewalk along the Foodland frontage of Pūpūkea Road. The owners acknowledge this request and look forward to addressing the City's requirements for improvements within the City's Right-of-Way. Installation of a sidewalk along Pupukea Road has been added to *Section 3.19* of the EIS as an unresolved issue to indicate the on-going dialog needed to finalize this pedestrian element.

Comment: *2. Short- and long-term bicycle parking must be provided within this Project. The Final EIS should include a site plan showing the planned location for the bicycle racks.*

Response: The planned locations for designated bicycle parking areas have been added to the site plan (*Figure 2-6*) in the EIS.

Comment: *3. Reconfiguration of the Foodland parking lot, including the elimination of the Kamehameha Highway vehicular access and possible restriping of the parking lot, may require a Conditional Use Permit for joint development. This should be listed as a potential permit requirement in the Final EIS.*

Response: As requested, a Condition Use Permit for Joint Development between the Hanapohaku and Foodland parcels has been added to *Table 1-1* in the Final EIS as a potential permit requirement.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DEPARTMENT OF PARKS & RECREATION
CITY AND COUNTY OF HONOLULU
1000 Uluohia Street, Suite 309, Kapolei, Hawaii 96707
Phone: (808) 768-3003 • Fax: (808) 768-3053
Website: www.honolulu.gov

KIRK CALDWELL
MAYOR

MICHELE K. NEKOTA
DIRECTOR

JEANNE C. ISHIKAWA
DEPUTY DIRECTOR

November 28, 2017

Mr. Jeff Overton, AICP, LEED AP, Principal
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

RECEIVED
DEC - 4 2017
G70

Dear Mr. Overton:

SUBJECT: Draft Environmental Impact Statement
Pupukea Rural Community Commercial Center
TMK (1) 5-9-022:068, 069, 070, and 016
Pupukea, Oahu, Hawaii

Thank you for the opportunity to review and comment on the subject Draft Environmental Assessment.

The Department of Parks and Recreation wants to express our thanks for considering our request to increase the number of parking spaces from the 75 spaces required by the Land Use Ordinance to approximately 126 spaces to mitigate the potential impact to the small 28 stall parking lot at Pupukea Beach Park.

As the proposed project is not anticipated to have any impact on any program or facility of the Department, you may remove us as a consulted party to the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner at 768-3017.

Sincerely,

Michele K. Nekota
Director

MKN:jr
(710552)

cc: Artis Shaw Kim, Department of Planning and Permitting

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Michele K. Nekota, Director
Department of Parks and Recreation
City and County of Honolulu
1000 Ulu'ohia Street, Suite 309
Kapolei, HI 96707

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Nekota:

Thank you for your comment letter dated November 28, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *The Department of Parks and Recreation wants to express our thanks for considering our request to increase the number of parking spaces from the 75 spaces required by the Land Use Ordinance to approximately 126 spaces to mitigate the potential impact to the small 28 stall parking lot at Pupukea Beach Park.*

Response: The project will provide parking as required by the Honolulu Land Use Ordinance (LUO), Chapter 21, Revised Ordinances of Honolulu. Additional parking spaces are provided to support mobile food trucks. We are working with the City Department of Planning and Permitting (DPP) to address the on-site parking requirements.

Comment: *As the proposed project is not anticipated to have any impact on any program or facility of the Department, you may remove us as a consulted party to the balance of the EIS process.*

Response: We acknowledge that the City and County Department of Parks and Recreation (DPR) does not anticipate any impact on its programs or facilities stemming from the project, and that DPR has requested to be removed from the consulted parties list for the project.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

KIRK CALDWELL
MAYOR

WES FRYSZTACKI
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

TP4/17-688272R

January 8, 2018

RECEIVED
JAN 16 2018
G70

Mr. Jeff Overton, AICP, LEED AP
Principal
Group 70 International, Inc.
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813-4307

Dear Mr. Overton:

SUBJECT: Draft Environmental Impact Statement (DEIS) for Pupukea Rural Community Commercial Center, Pupukea, Oahu, Hawaii

In response to your letter dated November 16, 2017, we have the following comments:

1. **Environmental Impact Statement Preparation Notice (EISPN).** Some of our previous comments for the EISPN were not addressed in the DEIS or in your response letter dated November 1, 2017. They are reiterated in this letter.

   a. The DEIS should include the recommended multi-modal improvements that are listed on pages 4 and 5, and in Chapters 7 and 8, and Figure 11 of the Transportation Impact Analysis Report.

   b. A discussion of the existing safety and traffic operational issues from entering and exiting the loading area in back of Foodland off of Pupukea Road with measures to mitigate these issues should be included.

   c. Any existing pedestrian, bicycle and vehicle access/crossing shall be maintained with the highest safety measures during construction.

   d. Locate the bike racks on the site plan.

2. **Traffic Management Plan (TMP).** Prepare a TMP which:

   a. Is jointly reviewed and accepted by the Department of Transportation Services (DTS) and the Department of Planning and Permitting.

   b. Provides a discussion of the traffic impacts that the project may have on any surrounding City roadways, including short-term impacts during construction and long-term impacts after construction with corresponding measures to mitigate these impacts by applying Complete Streets principles.

   c. Construction materials and equipment should be transferred to and from the project site during off-peak traffic hours (8:30 a.m. to 3:30 p.m.) to minimize any possible disruption to traffic on the local streets.

3. **Complete Streets**. The Application should contain discussion of compliance with County and State Complete Streets policies, pursuant to Act 54, Session Laws of Hawaii 2009, HRS §264-20.5 and ROH 12-15. The Project should elaborate on how it will comply with Complete Streets policies, including specific adherence to the following key Complete Streets principles: safety, Context Sensitive Solutions, accessibility and mobility for all, use and comfort of all users, consistency of design guidelines and standards, energy efficiency, health and green infrastructure.

4. **Public Transit Service Area.** We have the following comments:

   a. Relocating a bus stop on Hawaii Department of Transportation (HDOT) roadways is a coordinated effort between HDOT and DTS. To discuss relocation and bus stop improvements, contact DTS – Public Transit Division at 768-8396, 768-8370, 768-8374 or TheBusStop@honolulu.gov.

   b. Locate the proposed bus stop, shelter and bus bay on the site plan.

5. **Priority Guidelines on Sustainability.** In addressing priority guidelines on sustainability through HRS § 226-108, the Project should consider certification by a green building rating system, including but not limited to nationally recognized rating systems such as Leadership in Energy and Environmental Design (LEED), the Living Building Challenge, Green

Globes, or another comparable State-approved, nationally recognized, and consensus-based guideline, standard, or system.

The DTS supports certification such as the LEED for Building Design and Construction Version 4.0 as it mitigates Location and Transportation (LT) impacts including but not limited to: minimizing the environmental harms associated with parking facilities, including automobile dependence, land consumption, and rainwater runoff; reducing pollution by promoting alternatives to conventionally fueled automobiles; increasing access to quality transit; reducing Vehicle Miles Traveled (VMT) through the integration of bicycle facilities; and compact, walkable development that encourages a density and diversity of surrounding uses.

6. **Loading and Unloading.** Address the following comments regarding loading and unloading at the project site:

   a. All deliveries and refuse services should be handled on-site. A description of how the delivery and refuse vehicles will safely maneuver their vehicles on the property should be provided and the location marked on the site plan.

   b. The project should be designed to accommodate TheHandi-Van para-transit vehicles on-site, which may require a minimum 31-foot turning radius, a 10-foot, 6-inch height clearance, and the ability to exit the site without reversing onto public roadways.

7. **Best Management Practice Controls.** Best Management Practice controls should be included at the construction site to prevent trailing of dirt and debris on City roadways.

8. **Access Driveways.** All access driveways to the project site should be designed with the highest pedestrian and bicycle safety measures.

9. **Roadway Damage.** Any damage to the existing roadway and sidewalk area caused by the project should be repaired to current City standards.

10. **Neighborhood Impacts.** The area Neighborhood Board, as well as the area residents, businesses, emergency personnel (fire, ambulance and police), Oahu Transit Services, Inc. (TheBus and TheHandi-Van), etc., should be kept apprised of the details of the proposed project and the impacts that the project may have on the adjoining local street area network.

11. **Disability and Communication Access Board (DCAB).** Plans should be reviewed and approved by the Disability and Communication Access Board to ensure full compliance with the Americans with Disabilities Act.

Thank you for the opportunity to review this matter. Should you have any questions, please contact Renee Yamasaki of my staff at 768-8383.

Very truly yours,

Wes Frysztacki
Director

cc: Ardis Shaw Kim, DPP

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Wes Frysztacki
Director, Department of Transportation Services
City and County of Honolulu
650 South King Street, 3rd Floor
Honolulu, HI 96813

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Frysztacki:

Thank you for your comment letter dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Environmental Impact Statement Preparation Notice (EISPN):

Comment: *The DEIS should include the recommended multi-modal improvements that are listed on pages 4 and 5, and in Chapters 7 and 8, and Figure 11 of the Transportation Impact Analysis Report.*

Response: The EIS has been updated to include the description of multi-model improvements from the Transportation Impact Analysis Report (TIAR) in Appendix F, including: transit facilities and service; bicycle facilities; and pedestrian facilities. Figure 11 of the TIAR has been updated and included in the EIS; please see *Section 3.13 Traffic.*

Comment: *A discussion of the existing safety and traffic operational issues from entering and exiting the loading area in back of Foodland off of Pupukea Road with measures to mitigate these issues should be included.*

Response: Information from the TIAR regarding Foodland deliveries has been moved into the EIS *Section 3.13 Traffic.* Deliveries should be scheduled during off-peak times in the early afternoon to minimize delays to vehicles traveling on Pupukea Road.

Comment: *Any existing pedestrian, bicycle and vehicle access/crossing shall be maintained with the highest safety measures during construction.*

Response: Safety measures will be implemented during construction in accordance with the Traffic Management Plan, which will be prepared and reviewed during the construction permit review phase.

Comment: *Locate the bike racks on the site plan.*

Response: *Figure 3-8* in the Final EIS shows the location of bike racks to be provided for customers accessing the rural center by bicycle.

Traffic Management Plan (TMP):

Comment: *Prepare a Traffic Management Plan (TMP) which is jointly reviewed and accepted by the Department of Transportation Services and the Department of Planning and Permitting.*

Response: During the site development permit phase, a TMP will be prepared and submitted for review by the City and County of Honolulu's Department of Transportation Services (DTS) and Department of Planning and Permitting (DPP).

Comment: *Prepare a TMP that provides a discussion of the traffic impacts that the project may have on any surrounding City roadways, including short-term impacts during construction and long-term impacts after construction with corresponding measures to mitigate these impacts by applying Complete Streets principles.*

Response: As noted in the preceding response, a TMP will be prepared during the site development permit phase. Short-term construction impacts will be addressed, with measures implemented to minimize and mitigate the impacts.

The project will comply with the Complete Street principles, including mobility accessible walkways and bicycle integration. The project includes a sidewalk along the entire frontage along Kamehameha Highway. Green infrastructure is included in the landscape plan.

Comment: *Construction materials and equipment should be transferred to and from the project site during off-peak traffic hours (8:30 a. m. to 3:30 p.m.) to minimize any possible disruption to traffic on the local streets.*

Response: The contractor will follow the allowed schedule for delivery of materials and equipment.

Public Transportation Service Area:

Comment: *Relocating a bus stop on Hawaii Department of Transportation (HDOT) roadways is a coordinated effort between HDOT and DTS. To discuss relocation and bus stop improvements, contact DTS — Public Transit Division at 768-8396, 768-8370, 768-8374 or TheBusStop@honoIuIu. gov.*

Response: The traffic consultant and civil engineer for the project have met with HDOT and the City and County DTS regarding potential bus stop relocation sites. The location of the bus stop is shown in the Final EIS *Figure 3-8*, and Figure 11 of the TIAR. The possible sites discussed are presented in the TIAR. Coordination will continue into the permitting process, to ensure DTS approval of site development plans (in conjunction with DPP review) as well as Highways review by HDOT.

Comment: *Locate the proposed bus stop, shelter and bus bay on the site plan.*

Response: *Figure 3-8* of the Final EIS and Figure 11 of the TIAR show the currently proposed relocated bus stop sites.

Priority Guidelines on Sustainability:

Comment: *Priority Guidelines on Sustainability. In addressing priority guidelines on sustainability through HRS § 226-108, the Project should consider certification by a green building rating system, including but not limited to nationally recognized rating systems such as Leadership in Energy and Environmental Design (LEED), the Living Building Challenge, Green Globes, or another comparable State-approved, nationally recognized, and consensus-based guideline, standard, or system.*

The DTS supports certification such as the LEED for Building Design and Construction Version 4.0 as it mitigates Location and Transportation (LT) impacts including but not limited to: minimizing the environmental harms associated with parking facilities, including automobile dependence, land consumption, and rainwater runoff; reducing pollution by promoting alternatives to conventionally fueled automobiles; increasing access to quality transit; reducing Vehicle Miles Traveled (VMT) through the integration of bicycle facilities; and compact, walkable development that encourages a density and diversity of surrounding uses.

Response: The City and County of Honolulu's North Shore Sustainable Communities Plan (NSSCP) and zoning for the parcel restrict business locations in the rural North Shore area. As described in EIS Chapter 2, the addition of services not currently available will complement the existing Foodland grocery store. The rural community commercial center is located at the B-1 Neighborhood Business-District zoned parcels, with a modest 25 percent of the allowable floor area ratio, in keeping with the community's desire expressed in the NSSCP. The rural center will support local businesses from the North Shore and Hawai'i, emphasizing the value the landowner places on benefits to the community and fostering a home-grown sense of entrepreneurship.

Business and employment opportunities for area residents will provide additional jobs within the community and avoid long commutes to job centers in urban areas of O'ahu. The project's plan incorporates numerous measures to minimize environmental impacts including soil stabilization, water and energy conservation, storm water runoff management, minimization of waste and recycling, water-efficient native plants and protection of water quality.

The buildings and site will be developed following sustainable design principles, including water conservation, renewable energy production, low-impact development, wastewater controls.

Loading and Unloading:

Comment: *All deliveries and refuse services should be handled on-site. A description of how the delivery and refuse vehicles will safely maneuver their vehicles on the property should be provided and the location marked on the site plan.*

Response: The internal roadways and driveways will be designed to the City and County standards. The site plan shown in *Figure 3-8* identifies the maneuver area for the delivery and refuse service vehicles following the required turning dimensions.

Comment: *The project should be designed to accommodate TheHandi-Van para-transit vehicles on-site, which may require a minimum 31-foot turning radius, a 10-foot, 6-inch height clearance, and the ability to exit the site without reversing onto public roadways.*

Response: Please see preceding response.

Best Management Practice Controls:

Comment: *Best Management Practice controls should be included at the construction site to prevent trailing dirt and debris on City roadways.*

Response: Two sections in the EIS outline the short-term construction Best Management Practices (BMPs) associated with erosion and storm water runoff controls (*Section 3.2 Geology, Topography and Soils*, and *Section 3.6 Surface Water and Drainage*). The specific BMP to be employed to prevent trailing dirt and debris on City roadways is described in *Section 3.2.2*: The entrance to the rural center will be stabilized with gravel to reduce transfer of mud and sediment from construction vehicles to adjacent paved and public roads, or a tire wash system may be employed. Any materials dropped or tracked to off-site streets or paved areas will be cleaned using dry methods such as sweeping or vacuuming.

Access Driveways:

Comment: *All access driveways to the project site should be designed with the highest pedestrian and bicycle safety measures.*

Response: We concur.

Roadway Damage:

Comment: *Any damage to the existing roadway and sidewalk area caused by the project should be repaired to current City standards.*

Response: In keeping with the City site development and building permit requirements to be secured for the project, any damage to existing roadways, sidewalks/curbs would be repaired to current City standards.

Neighborhood Impacts:

Comment: *The area Neighborhood Board, as well as the area residents, businesses, emergency personnel (fire, ambulance and police), Oahu Transit Services, Inc. (The Bus and TheHandi-Van), etc., should be kept apprised of the details of the proposed project and the impacts that the project may have on the adjoining local street area network.*

Response: The project team has met multiple times with the Pāhoe Road community, DTS and HDOT, the North Shore Neighborhood Board, the Sunset Beach Association, and numerous individuals throughout the planning process. A website developed for the project provides updates, includes a survey to gather information from the public, and provides a way to initiate contact (http://mccullyscorner.com/). An EIS Preparation Notice published in the Office of Environmental Quality Control's April 2017 edition of *The Environmental Notice* notified the public that the EIS process was being initiated. The Draft EIS was published in November 2017 and notification was sent to all who requested to be a "consulted party."

Consultation with agencies, particularly related to transportation and roadwork, will be on-going through the design and permitting of the project.

Disability and Communications Access Board (DCAB):

Comment: *Plans should be reviewed and approved by the Disability and Communication Access Board to ensure full compliance with the Americans with Disabilities Act.*

Response: As noted in the previous response, on-going coordination with DTS and the DCAB will ensure plans are compliant with the Americans with Disabilities Act (ADA).

We appreciate the input of the DTS staff as we work to create a space that serves the North Shore community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for participating in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

KIRK CALDWELL
MAYOR

SUSAN BALLARD
CHIEF

JOHN D. McCARTHY
JONATHON GREMS
DEPUTY CHIEFS

OUR REFERENCE MT-DK

December 11, 2017

RECEIVED
DEC 26 2017
G70

TO: Kathy K. Sokugawa, Acting Director
Department of Planning and Permitting

FROM: Mark Tsuyemura, Management Analyst VI, Office of the Chief

SUBJECT: Draft Environmental Impact Statement
Pupukea Rural Community Commercial Center
TMK: (1) 58-9-022: 068, 069, 070, and 016

This is in response to a letter dated November 16, 2017, from Group 70 International, Inc. (G70), requesting comments on the subject above. The Honolulu Police Department (HPD) has concerns regarding the anticipated increase in vehicular and pedestrian traffic and in the number of calls for police services in the project area.

The development of commercial businesses will increase in the vehicular and pedestrian traffic around the project site. We recommend that the developer evaluate the outcome of the traffic affected by vehicles and pedestrians traveling in the area during the construction phase and also after completion when these establishments will be open for business. This includes an evaluation of the traffic conditions caused by the increase in the number of vehicles commuting from/to the vicinity of this project.

It is also anticipated that this project will cause an increase in police services requested by the community. The current staffing may not be able to respond to the growing number of calls for services within a favorable amount of time. As such, the additional resources and staffing would require an increase in our budget.

If there are any questions, please call Acting Major Gordon Lum Kee of District 2 (Wahiawa) at 723-8703.

Thank you for the opportunity to review this project.

MARK TSUYEMURA
Management Analyst VI
Office of the Chief

cc: Mr. Jeff Overton, AICP, LEED AP
G70

Serving and Protecting With Aloha

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Office of the Chief
Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, HI 96813
Attention: Mr. Mark Tsuyemura

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Tsuyemura:

Thank you for the comments dated December 11, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *The Honolulu Police Department (HPD) has concerns regarding the anticipated increase in vehicular and pedestrian traffic and in the number of calls for police services in the project area. The development of commercial businesses will increase in the vehicular and pedestrian traffic around the project site. We recommend that the developer evaluate the outcome of the traffic affected by vehicles and pedestrians traveling in the area during the construction phase and also after completion when these establishments will be open for business. This includes an evaluation of the traffic conditions caused by the increase in the number of vehicles commuting from/to the vicinity of this project.*

Response: The EIS Section 3.13 addresses vehicle and pedestrian traffic concerns under existing conditions and future conditions. The project team and traffic consultant have consulted the State Department of Transportation and City Department of Transportation Services in the transportation planning for the project and the TIAR studies. Actions planned to mitigate traffic impacts are outlined in the EIS, including a restriping of the highway to include a central turning lane and a potential highway crosswalk at the north end of the property.

Comment: *It is also anticipated that this project will cause an increase in police services requested by the community. The current staffing may not be able to respond to the growing number of calls for services within a favorable amount of time. As such, the additional resources and staffing would require an increase in our budget.*

Response: The redevelopment of the subject properties will increase the floor area for commercial use of the property and the resulting real property tax assessment. There will be a significant increase in the future City/County Real Property tax revenues generated by

the project. It is anticipated that a portion of the increased property tax revenue can be allocated help to support the operation of the Honolulu Police Department. We acknowledge the concerns of the HPD regarding the plans for the rural center and public safety, and the owners wish to maintain a close coordination with the Department.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

Elected Officials

The Senate

STATE CAPITOL
HONOLULU, HAWAII 96813

January 8, 2018

Honolulu City & County
Department of Planning and Permitting
650 s King St, 7th Floor
Honolulu, HI 96813

G70
925 Bethel Street, 5thFloor
Honolulu, HI 96813

Hanapohaku LLC
59-716 Kamehameha Hwy
Haleiwa, HI 96712

RE: Pupukea Rural Community Commercial Center Draft EIS

Dear Sir/Madame:

Please accept these comments and questions regarding the Draft Environmental Impact Statement for Pupukea Rural Community Commercial Center.

Project Summary
"The property is in the Special Management Area and this Draft EIS is being prepared pursuant to Chapter 25-3.3, Revised Ordinances of Honolulu, related to procedural guidelines and assessment requirements." No mention is made of HRS 343 requirements.

6.1 Proposed Transportation Improvements
"As part of the project, the section of Kamehameha Highway between Pupukea Road and Pahoe Road will be widened and re-striped to add a center two-way left-turn lane. This lane will be approximately 270 feet long and will lead into the southbound left-turn lane at Pupukea Road."

COMMENT 1: This project is subject to the HRS 343 review process because it proposes to modify Kamehameha Hwy, a state-owned highway. The law cannot be more clearly stated for a project that proposes "the use of state or county lands"

> **§343-5 Applicability and requirements.** (a) Except as otherwise provided, an environmental assessment shall be required for actions that:
> (1) Propose the use of state or county lands….

Appendix F Traffic Impact Analysis Report, 2.2 Project Study Area
"Regional access to the proposed project will be provided via Kamehameha Highway, and local access will (sic) provided via Pupukea Road (and the existing Foodland Driveway). The transportation analysis evaluated the operations at the two intersections in the vicinity of the proposed project that are listed below and shown on Figure 1.

1. Kamehameha Highway / Pupukea Road
2. Kamehameha Highway / Future Project Driveway (only analyzed in Plus Project scenario)"

COMMENT 2: The study failed to accurately calculate baseline turning movements into and out of the Foodland parking lot and the project site. The study must analyze vehicular movements through four existing intersections: Pupukea Rd, entrances and exists to Foodland on both Pupukea Rd and Kamehameha Hwy, and the existing project site entrance.

For example, some vehicles travel north through the Pupukea Rd intersection and enter Foodland from Kamehameha Hwy, while some turn right on Pupukea Rd and then left into Foodland. Some southbound vehicles turn left into Foodland from Kamehameha Hwy, while others turn left on Pupukea Rd and then left into Foodland. Some vehicles exit the parking lot through the opposite driveway from which they entered.

Of course, all existing vehicular access to the project site is from Kamehameha Hwy. It is astonishing that this TIAR failed to calculate existing vehicular activity at the project site.

Without knowledge of how many vehicles presently enter and exist each of these access points, it is impossible to make a comparison against estimated future traffic, or to determine the likely impacts of consolidating the Kamehameha access points versus leaving the Foodland access points unchanged, or to analyzing the likely movement through the consolidated parking lots.

6.1 Proposed Transportation Improvements
"As part of the project, the section of Kamehameha Highway between Pupukea Road and Pahoe Road will be widened and re-striped to add a center two-way left-turn lane. This lane will be approximately 270 feet long and will lead into the southbound left-turn lane at Pupukea Road." This will also help to enhance safety <u>by moving some of these existing movements out of the southbound left-turn pocket at Pupukea Road, which should not be used for merging maneuvers for southbound traffic."</u> (underline added)

COMMENT 3: Please elaborate on this statement. Vehicular movement through the new project and Foodland should be more clearly described.

It appears to be an admission that vehicles from the project site will exit onto Pupukea Rd in order to turn south on Kamehameha Hwy (i.e., "should not be used")

It is also unclear how the increased traffic through the Pupukea Rd entrance and exit to Foodland can be accommodated after the Kamehameha access points are eliminated and the additional traffic from the project is added. There is already limited space for movement in the parking lot near the driveway and between the driveway and the Kamehameha intersection. More discussion is warranted.

6.1 Proposed Transportation Improvements
"It should be noted that widening the pavement section would reduce the roadway shoulder widths to regulated standards and would discourage on-street parking."

COMMENT 4: At present, how many vehicles can legally park on the makai side of Kamehameha Hwy, opposite the project? How many of these "on-street parking" spaces would be eliminated with the proposed action? If public parking near the beach park is eliminated, how will the developer mitigate this loss?

Appendix F Table 4
"Table 4 shows the Kamehameha Highway/Pupukea Road intersection currently operates at the minimum desirable operating level of LOS D during the Midday, PM, and Saturday peak hours."

COMMENT 5: This statement indicates that the intersection operates at LOS D, yet the actual Table 4 prominently displays LOS A. What is the correct level of service?

1.4.2 Adverse Impacts
"The impact of the increased traffic related to the project at the intersection of Kamehameha Highway and Pūpūkea Road would continue at level of service (LOS) A during both peak hours of traffic, with LOS B during Saturday peak hour traffic."

1.4.4 Unresolved Issues
"Traffic is particularly bad along this stretch of highway, as well as Waimea Bay, the Foodland Pūpūkea area"

COMMENT 6: Please clarify. Is the traffic particularly bad or is it LOS A, LOS B, or, potentially LOS D?

1.4.1 Beneficial Impacts
"Long-term employment is estimated at 86 full time jobs."

COMMENT 7: What is the estimated number of peak hour employee vehicles that will park on site? Will employee parking be allowed, condoned, or restricted in the Foodland parking lot? How will employee parking be managed?

2.4 Proposed Action
"Total on-site parking will accommodate 126 vehicles, which is more than required under the City LUO"

COMMENT 8: Based on public conversations held at the North Shore Neighborhood Board, this statement may be technically correct, but disingenuous. The stated plan for multiple lunch wagons will increase demand for parking, yet the city code does not presently require additional parking for lunch wagons. This report would be improved with more discussion on the likely impacts on traffic and parking from lunch wagons.

3.4.1 Existing Conditions, Mammals
"The only native terrestrial mammal in Hawai'i is the endangered Hawaiian hoary bat, or ope'ape'a (Lasiurus cinereus semotus). While the 'ope'ape'a has been seen on Hawai'i, Maui, Moloka'i, O'ahu and Kaua'i, *it may only live on Hawai'i, Maui, and Kaua'i.* A large population might have lived on O'ahu before the early 19th century, but it is based on a single observation of an unknown number of bats (USFWS 2017). This species was not detected during the survey." (underline and italics added)

COMMENT 9: This is just not true that there are no bats on Oahu! Many Hawaiian Hoary Bats have been killed by the nearby Kawailoa Wind Turbines. So many so, that this wind project is in the process of amending its Incidental Take License to expand its take of this endangered species. While there may have been no bats observed on site, this section of the report must be corrected.

Thank you for this opportunity to share my thoughts.

Respectfully submitted,

Gil Riviere
Senator, District 23
Oahu's North and Windward Shores

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Senator Gil Riviere
The Senate, State of Hawai'i, District 23
Hawai'i State Capitol, Room 217
Honolulu, Hawai'i 96813

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Senator:

Thank you for your comment letter dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Project Summary:

Comment: *"The property is in the Special Management Area and this Draft EIS is being prepared pursuant to Chapter 25-3.3, Revised Ordinances of Honolulu, related to procedural guidelines and assessment requirements." No mention is made of HRS 343 requirements.*

Response: The text cited in your comment to be from the Project Summary provided as part of the Publication Form required by the Office of Environmental Quality Control. The Environmental Impact Statement Rules (Hawai'i Revised Statutes Chapter §11-200) gives the Office of Environmental Quality Control (OEQC) responsibility for publication of the Notice of Availability in its bulletin (*The Environmental Notice*). The Project Summary is provided to OEQC to facilitate the public notice, and is not a formal part of the EIS.

The EIS states that the document was prepared pursuant to Revised Ordinances of Honolulu (ROH) Chapter 25, Special Management Area and consistent with Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health Environmental Impact Statement Rules (emphasis added). Refer to: EIS cover page; Section 1.2 *Introduction*, Section 4.2.1 *Environmental Impact Statements, Hawaii Revised Statutes Chapter 343*, Section 4.3.1 *Chapter 25, Revised Ordinances of Honolulu*, and Chapter 6.0 *Agencies and Parties Consulted*.

6.1 Proposed Transportation Improvements

Comment: *"As part of the project, the section of Kamehameha Highway between Pūpūkea Road and Pāhoe Road will be widened and re-striped to add a center two-way left-turn lane. This lane will be approximately 270 feet long and will lead into the southbound left-turn lane at Pupukea Road."*

1. *"This project is subject to the HRS 343 review process because it proposes to modify Kamehameha Hwy, a state-owned highway. The law cannot be more clearly stated for a project that proposes "the use of state or county lands"*

Response: The DEIS describes the highway change more accurately: "The project will involve restriping of Kamehameha Highway to create a left turn storage lane and shelter lane at the entrance. The restriped center lane will extend from Pūpūkea Road to Pāhoe Road. The right-of-way for Kamehameha Highway has adequate width to accommodate the restriping with the need for additional paving width provided from the mauka side along the protect frontage..." The TIAR has been corrected to state "*... the section of Kamehameha Highway... will be ~~widened and~~ re-striped...*"

The EIS presents improvements to the project site and anticipated minor improvements to be completed by the applicant within the State right-of-way along Kamehameha Highway and City/County right-of-way along Pūpūkea Road. These represent minor upgrades to public facilities discussed with State and City transportation agencies as likely to be assigned to the landowner for operation of the future rural center.

Chapter 25 ROH, Special Management Area, states: "Any proposed development within the special management area requiring a special management area use permit shall be subject to an assessment by the agency in accordance with the procedural steps set forth in HRS Chapter 343." Procedurally, Section 25-4.2 of Chapter 25 ROH states that the director shall adhere to the procedures set forth in HRS Chapter 343, and the regulations adopted thereunder by the environmental quality commission. Finally, Chapter 25 ROH defines an EIS as: "EIS means an informational document prepared in compliance with the environmental quality commission's rules and regulations implementing HRS Chapter 343". (Emphasis added.) Hawai'i Administrative Rules Chapter 11-200, Environmental Impact Statement Rules, are the implementing rules of Chapter 343 HRS.

Please refer to the preceding response for the locations within the EIS where it is stated that this environmental disclosure document was prepared consistent with both HRS Ch. 343 and HAR §11-200.

Comment: Appendix F Traffic Impact Analysis Report, 2.2 Project Study Area

2. *The study failed to accurately calculate baseline turning movements into and out of the Foodland parking lot and the project site. The study must analyze vehicular movements through four existing intersections: Pupukea Rd, entrances and exists to Foodland on both Pupukea Rd and Kamehameha Hwy, and the existing project site entrance.*

   For example, some vehicles travel north through the Pupukea Rd intersection and enter Foodland from Kamehameha Hwy, while some turn right on Pupukea Rd and then left into Foodland. Some southbound vehicles turn left into Foodland from Kamehameha Hwy, while others turn left on Pupukea Rd and then left into Foodland. Some vehicles exit the parking lot through the opposite driveway from which they entered.

   Of course, all existing vehicular access to the project site is from Kamehameha Hwy. It is astonishing that this TIAR failed to calculate existing vehicular activity at the project site.

Without knowledge of how many vehicles presently enter and exist each of these access points, it is impossible to make a comparison against estimated future traffic, or to determine the likely impacts of consolidating the Kamehameha access points versus leaving the Foodland access points unchanged, or to analyzing the likely movement through the consolidated parking lots.

Response: Please see the preceding response citing the description of the proposed improvements from the DEIS. The TIAR has been corrected to state that the highway will be restriped.

The TIAR accounted for existing traffic generated by Foodland, as well as traffic generated by the project site. The re-assigned Foodland traffic volumes are illustrated on TIAR Figures 7 through 9. In addition, no credit was taken for traffic already generated by the site. However, it was noted that the TIAR included traffic from the existing uses in the analysis but did not clearly state this in the report text. The explanation is as follows:

During the November 2016 field observations, the estimate of vehicle trips generated by *all existing uses on the site* including the food trucks was 85 trips during the weekday PM peak hour and 140 trips each during the weekday and Saturday midday peak hours. As noted in the TIAR, no credit was applied for existing traffic on the site. It should be noted that these volumes are already included in the operations analysis of both study intersections and far exceed the addition of trips for food trucks using the ITE rates.

A comparison the of the Year 2021 traffic volumes on TIAR Figure 6, plus the project-generated traffic illustrated on Figures 7, 8 and 9 in the TIAR to the final volumes on Figure 10, show that each left- and right-turn volume at the project driveway is 20 to 35 vehicles higher. This difference represents the traffic that would be generated by the food trucks and is more than triple the ITE food Cart Pod rate. The TIAR has been updated to include the existing site trip generation and the use of existing traffic to conservatively represent any additional traffic generated by food trucks after project implementation.

Regarding the analysis of the Pūpūkea Road driveway, this location experiences little or no delay caused by turning movement operations. The projected increase in any one turning movement with project implementation (shown on Figures 7 through 9 in the TIAR) is an average of less than one new vehicle per minute during any peak hour, which is not expected to result in any substantial traffic operations issues. To further ensure that the added traffic on Pūpūkea Road does not cause any new delays, it is recommended that a KEEP CLEAR designation be installed on makai-bound Pūpūkea Road at the existing Foodland driveway. This will minimize the potential for makai-bound traffic waiting for the traffic signal from blocking the driveway and impeding eastbound left-turns into the site.

Comment: <u>6.1 Proposed Transportation Improvements</u>

3. *"As part of the project, the section of Kamehameha Highway between Pūpūkea Road and Pāhoe Road will be widened and re-striped to add a center two-way left-turn lane. This lane will be approximately 270 feet long and will lead into the southbound left-turn lane at P Pūpūkea Road." This will also help to enhance safety by moving some of these existing*

movements out of the southbound left-turn pocket at Pūpūkea Road, which should not be used for merging maneuvers for southbound traffic." (underline added)

Please elaborate on this statement. Vehicular movement through the new project and Foodland should be more clearly described.

It appears to be an admission that vehicles from the project site will exit onto Pūpūkea Rd in order to turn south on Kamehameha Hwy (i.e., "should not be used")

It is also unclear how the increased traffic through the Pūpūkea Rd entrance and exit to Foodland can be accommodated after the Kamehameha access points are eliminated and the additional traffic from the project is added. There is already limited space for movement in the parking lot near the driveway and between the driveway and the Kamehameha intersection. More discussion is warranted.

Response: Based on the current DOT standards and traffic engineering practice, the existing Foodland driveways on Kamehameha Highway are located too close to the Pūpūkea Road intersection. By closing the driveways and consolidating traffic to one new driveway on the highway, turning movements will occur at more of a midblock location between Pāhoe and Pūpūkea roads. The addition of a center-two way left-turn lane will provide additional capacity and storage for traffic in this corridor, expediting flow and enhancing safety for vehicles. The TIAR acknowledges that a small volume of project site traffic may use the Pūpūkea Road driveway, but the vast majority of vehicles will use the new site driveway. The connection of the project site parking lot with the existing Foodland lot is desired by HDOT to minimize access points on the highway and to increase connectivity. See Response 2 regarding potential impacts at the existing Foodland driveway on Pūpūkea Road.

Comment: <u>6.1 Proposed Transportation Improvements</u>
"It should be noted that widening the pavement section would reduce the roadway shoulder widths to regulated standards and would discourage on-street parking."

4. *At present, how many vehicles can legally park on the makai side of Kamehameha Hwy, opposite the project? How many of these "on-street parking" spaces would be eliminated with the proposed action? If public parking near the beach park is eliminated, how will the developer mitigate this loss?*

Response: According to the HDOT, parking along the shoulder of the State highway is not allowed as a matter of policy. However, this policy may not be enforced at this rural location. Regardless of whether the State will allow continued parking on the makai side, the highway restriping and the addition of asphalt pavement (mauka side) will retain the shoulder where cars currently park on the makai side. Specific design plans for these improvements on-site and off-site are pending engineering design and review by the government transportation agencies.

The project will provide parking as required by the Honolulu Land Use Ordinance (LUO), Chapter 21, Revised Ordinances of Honolulu. Additional parking spaces are being added to allow mobile food truck presence; while the LUO has not yet codified the space required, we

are working with the City Department of Planning and Permitting (DPP) to anticipate the future requirements. Six stalls per food truck are required for Hale'iwa, thus the total parking count for the project includes 36 stalls lot to accommodate up to six food truck.

Based on the 2015 *Pūpūkea Beach Park Master Plan*, which evaluated parking and other resource issues at the park, it is not apparent that mitigation is needed. The *Master Plan* states: "The City recognizes that demand for shoreline parks may exceed their capacity at times. For parks, capacity is often limited by the availability of parking, although the perception of 'crowdedness' may impact user experience and discourage use." One of the key planning implications of the master plan's Resource Use section is: "The current levels of use seems to be hovering at the balance point between satisfying demand for shoreline recreation and becoming overused and thus impacting user experience and natural resources. Access to the Park (i.e., parking availability) should be maintained as is."

The proposed project does not include any design features or mitigation measures that specifically eliminate any opportunities for parking on the makai side of Kamehameha Highway. It should be noted that parking on the shoulder of the highway is technically illegal in that it limits access to the grass shoulder area, which is legally a path/sidewalk or would be used to temporarily store a disabled vehicle.

Appendix F Table 4
"Table 4 shows the Kamehameha Highway/Pupukea Road intersection currently operates at the minimum desirable operating level of LOS D during the Midday, PM, and Saturday peak hours."

COMMENT 5: *This statement indicates that the intersection operates at LOS D, yet the actual Table 4 prominently displays LOS A. What is the correct level of service?*

Response: The TIAR text should have stated: "**Table 4** shows the Kamehameha Highway /Pūpūkea Road intersection currently operates at the minimum desirable operating level of LOS D <u>or better</u> during..." To be clearer, the TIAR text has been revised to state: "**Table 4** shows the Kamehameha Highway/Pūpūkea Road intersection currently operates at LOS A during most Midday, PM, and Saturday peak hours."

1.4.2 Adverse Impacts
"The impact of the increased traffic related to the project at the intersection of Kamehameha Highway and Pūpūkea Road would continue at level of service (LOS) A during both peak hours of traffic, with LOS B during Saturday peak hour traffic."

1.4.4 Unresolved Issues
"Traffic is particularly bad along this stretch of highway, as well as Waimea Bay, the Foodland Pūpūkea area"

COMMENT 6: *Please clarify. Is the traffic particularly bad or is it LOS A, LOS B, or, potentially LOS D?*

Response: The summary statement referenced in Chapter 1 are more thoroughly explained in Chapter 3. The paragraph in *Section 3.13.2* of the EIS (just before Table 3-4) ends with:

"The potential delay for a vehicle under LOS B conditions would be an additional 1.7 seconds over the near-term baseline conditions (*Table 3-4*).

The statement under *Section 1.4.4* is repeated from *Section 3.19* of the EIS. This general statement reflects that traffic is a community issue extending from Hale'iwa through Sunset Beach. The paragraph identifies a problem area at Laniākea Beach, a popular sea turtle viewing site three miles from Pūpūkea towards Hale'iwa where State DOT is working to alleviate the daily delay. The paragraph provides context for the intersection at Pūpūkea Road, which has the only stoplight along a 10-mile stretch of highway, in an area that has seen the island-wide growth and increased tourism over the past decades. With the completed project, traffic at the intersection of Kamehameha Highway and the project driveway is anticipated to operate at an acceptable LOS D or better under both peak hours of traffic.

As noted in the TIAR, the typical operations at the Kamehameha Highway/Pūpūkea Road intersection are good and the impact of the project will be to cause LOS B operations during the typical Saturday peak hour during most of the year. The TIAR also acknowledges that on some days at certain times, delays can occur within the highway corridor through Pūpūkea. However, delay is limited throughout most of the year as illustrated by various data sources (e.g., Google Maps Typical Traffic).

1.4.1 Beneficial Impacts
"Long-term employment is estimated at 86 full time jobs."

COMMENT 7: *What is the estimated number of peak hour employee vehicles that will park on site? Will employee parking be allowed, condoned, or restricted in the Foodland parking lot? How will employee parking be managed?*

Response: The number of employees on site will not be the same as the jobs created by the center. *Section 3.11.2* has been updated to note the long-term jobs to be created will be 80 (versus 86 in the Draft EIS). However, fewer employees will be on site at any one time. As we heard at the North Shore Neighborhood Board meeting held on November 28, 2017, one business owner stated that parking concerns can be mitigated with alternatives such as biking and carpooling. He mentioned that he will encourage his employees to find alternative means to getting to work instead of driving.

The number of parking spaces to be provided will meet the Honolulu Land Use Ordinance (LUO), Revised Ordinances of Honolulu Chapter 21. Additional spaces will be provided in accord with anticipated requirements for parking associated with food trucks. Parking will be managed and enforced at the site, with time limits for patrons while shopping.

2.4 Proposed Action
"Total on-site parking will accommodate 126 vehicles, which is more than required under the City LUO"

COMMENT 8: *Based on public conversations held at the North Shore Neighborhood Board, this statement may be technically correct, but disingenuous. The stated plan for multiple lunch wagons will increase demand for parking, yet the city code does not presently require*

additional parking for lunch wagons. This report would be improved with more discussion on the likely impacts on traffic and parking from lunch wagons.

Response: Parking and loading standards are set by the City's Department of Planning and Permitting and are intended to minimize street congestion and traffic hazards, and to provide safe and convenient access to locations including residences and businesses. The parking requirements are documented in the Land Use Ordinance (ROH Chapter 21). The number of parking stalls are calculated based on gross floor area (approximately 34,500 square feet), requiring one stall per 400 square feet of retail, business, and restaurant space (applicable to this center). The requirement for the proposed center is 87 parking stalls. The requirement for parking associated with mobile food trucks in designated areas of the Hale'iwa Special District is six parking stalls per mobile food truck. This ratio is anticipated to be codified in the LUO outside of the Hale'iwa Special District and is being applied to the project; with a total of 126 parking stalls enabled by the design, 6 mobile food trucks can be accommodated with the required 36 total stalls.

The response to Comment 2 addresses this similar comment.

3.4.1 Existing Conditions, Mammals
"The only native terrestrial mammal in Hawai'i is the endangered Hawaiian hoary bat, or ope'ape'a (Lasiurus cinereus semotus). While the 'ope'ape'a has been seen on Hawai'i, Maui, Moloka'i, O'ahu and Kaua'i, it may only live on Hawai'i, Maui, and Kaua'i. A large population might have lived on O'ahu before the early 19th century, but it is based on a single observation of an unknown number of bats (USFWS 2017). This species was not detected during the survey." (underline and italics added).

COMMENT 9: *This is just not true that there are no bats on Oahu! Many Hawaiian Hoary Bats have been killed by the nearby Kawailoa Wind Turbines. So many so, that this wind project is in the process of amending its Incidental Take License to expand its take of this endangered species. While there may have been no bats observed on site, this section of the report must be corrected.*

Response: The USFWS citation used for the Draft EIS is incorrect. The Final EIS has been updated to note that in recent years bats have been recorded on O'ahu on a regular basis, likely due to a lack of survey efforts in the past. It is within the realm of possibility that this special may forage above the project site on a seasonal basis. However, in the opinion of the advising biologist it is unlikely that a bat would roost within the project site given the level of disturbance and activity on site, and the highly manicured nature of the planned landscaping.

Nonetheless, given the importance of these endangered bats, project construction and maintenance will adhere to best practices to avoid potential harm to bats. As stated in the EIS *Section 3.4.2*, special care will be taken during construction and when trimming or clearing woody plants taller than 15 feet to minimize any potential adverse effects to the Hawaiian hoary bat. Between June 1 to September 15, woody vegetation and trees taller than 15 feet will not be disturbed.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

COMMUNITY INTEREST GROUPS AND ORGANIZATIONS

MĀLAMA PŪPŪKEA-WAIMEA
PROTECTING OUR OCEAN'S RESOURCES

Mālama Pūpūkea-Waimea
Post Office Box 188
Hale'iwa, HI 96712

Board of Directors

Denise Antolini
Colette Coty
John Cutting
Bob Leinau
Laura Parsons
Jim Parsons

Advisory Council

Athline Clark
Dr. Alan Friedlander
Debbie Gowensmith
Bill Quinlan
Palakiko Yagodich

Staff

Maxx Elizabeth Phillips, Managing Director
Jenny Yagodich, Director of Educational Programs & Community Outreach

Federal Nonprofit Organization
501(c)(3) FEIN 27-0855937
www.pupukeawaimea.org

January 8, 2018

Ardis Shaw-Kim, (808) 768-8021, ashaw@honolulu.gov
Jeff Overton, AICP LEED AP, (808) 523-5866, pupukea@g70.design

Re: Pūpūkea Rural Community Commercial Center DEIS Comments

Dear Ms. Shaw-Kim and Mr. Overton:

Since 2005, Mālama Pūpūkea-Waimea (MPW) has worked "to replenish and sustain the natural and cultural resources of the Pūpūkea and Waimea ahupua'a for present and future generations through active community stewardship, education, and partnerships."

Our organization was created thirteen years ago in response to the serious threats to the community and marine ecosystem in these ahupua'a that arose from the commercial "mall" development by the Honu Group on the same parcels on which Hanapohaku (HP) is proposing another tourist-focused shopping mall that is the subject of this DEIS and a proposed Special Management Area (SMA) "Major" Permit.

We have since dedicated thousands of hours of volunteer and staff time, and substantial resources, in particular to protecting the State Marine Life Conservation District (MLCD) at Pūpūkea and stewarding Pūpūkea Beach Park. The majority of our Board and staff are long-time residents of Pūpūkea.

The Board, staff, and volunteers have spent virtually every Saturday since 2005 conducting stewardship activities near and directly across the two-lane Kamehameha Highway from the Project site, at the Pūpūkea Beach Park and in the Pūpūkea Marine Life Conservation District conducting outreach and education activities, scientific research, and biological and recreational use monitoring, all of which are core to the mission of the organization.

MPW requests to continue to be a formally consulted party in the EIS process going forward. Please provide all future documents and correspondence to both Denise Antolini (antolinid@gmail.com) and Maxx Elizabeth Phillips (maxxephillips@gmail.com) and mail hard copies to MPW address indicated.

As explained below, MPW's review of the DEIS indicates numerous serious flaws that require a revisions, republishing, and recirculation of an EISPN and DEIS that complies fully with HRS Chapter 343 and not just ROH Chapter 25.

We provide the following comments on the DEIS:

1. HP's References to the Term "EIS" Are Misleading and Must Be Clarified Consistently Throughout the Document

1.1 A "ROH Chapter 25 EIS" is – and is known by OEQC as – a "Non-Chapter 343" EIS. See OEQC's Environmental Notice Nov. 23, 2017, which explains:

"Use of the Special Management Area (SMA) is not a trigger under Chapter 343, but developments in O'ahu's SMA are required to go through an environmental review process that mirrors the procedural requirements of HRS Chapter 343, pursuant to Revised Ordinances of Honolulu, Chapter 25. Developments being reviewed under Chapter 25 but not Chapter 343 appear here." http://oeqc2.doh.hawaii.gov/The_Environmental_Notice/2017-11-23-TEN.pdf

1.2 In order not to confuse the public, as well as agencies, an EIS prepared under ROH Chapter 25 should be **clearly labeled as such** and not identified simply as an "EIS," which is the same term used for EISs that are prepared pursuant to all requirements (not just the "procedural requirements") of HRS Chapter 343. To omit this clarification in the document is misleading. To avoid misleading the public, add "ROH Ch. 25, Non-Chapter 343" **before every mention** of "Environmental Impact Statement," "environmental document," or "EIS" in the document.

1.3 At 1.0 Project Summary, page 1-1, the Type of Document says "Environmental Impact Statement." Comment: Add "ROH Ch. 25, Non-Chapter 343" before "Environmental Impact Statement" in this sentence.

1.4 Comment: The Cover page states "This **ADD: "ROH Ch. 25, Non-Chapter 343"** environmental document is prepared pursuant to Revised Ordinances of Honolulu, Chapter 25, Special Management Area and consistent with **ADD: THE PROCEDURAL STEPS OF** Hawaii Revised Statutes, Chapter 343 . . . . " (Underlined emphasis added.) The bolded words should be added to accurately reflect the language of ROH Ch. 25 and that this is a Non-Chapter 343 EIS.

Note these provisions of ROH Chapter 25:

(a) ROH Ch. 25-1.3 states that an EIS "means an informational document prepared in compliance with the environmental quality commission's rules and regulations implementing HRS Chapter 343."

(b) ROH Ch. 25-3.3, Procedural Guidelines, provides: "Any proposed development within the special management area requiring a special management area use permit shall be subject to an assessment by the agency in accordance with the procedural steps set forth in HRS Chapter 343." (Emphasis added.)

(c) ROH Ch. 25-4.2 state "In processing an environmental assessment or environmental impact statement, the director shall adhere to the procedures set forth in HRS Chapter 343, and the regulations adopted thereunder by the environmental quality commission." (Emphasis added.)

1.5 Comment: Add language to DEIS page 1-9: "Proposed development within the SMA requires a Special Management Area Use Permit, subject to an **ADD: "ROH Ch. 25 Non-Chapter 343"** assessment by the agency in

accordance with the procedural steps set forth in Hawai'i Revised Statutes as amended (HRS) Chapter 343 (Environmental Impact Statements). This document was prepared as required under Revised Ordinances of Honolulu Chapter 25 and in accordance with [**ADD: PROCEDURAL STEPS SET FORTH IN]** HRS Chapter 343 and the implementing Hawai'i Administrative Rules (HAR), Chapter 11-200 (Environmental Impact Statement Rules)."

1.6 Please make these corrections: See also Page 4-3: "An ADD: **"ROH Ch. 25 Non-Chapter 343"** EIS is required for this project since the project lies within the Special Management Area (SMA) as defined by the City and County of Honolulu; see Section 4.2.6. This EIS has been prepared **ADD: "pursuant to ROH Chapter 25"** in compliance with **ADD: THE PROCEDURAL [STRIKE: environment]** requirements outlined in HRS Chapter 343 and the implementing Hawai'i Administrative Rules (HAR) Chapter 11-200." Further, page 4-3 states: "Revised Ordinances of Honolulu (ROH), Section 25.3.3(c)(1) states that any proposed development within the special management area which requires a special management area use permit be subject to an ADD: **"ROH Ch. 25 Non-Chapter 343"** assessment in accordance with the **procedural steps** set forth in HRS Chapter 343." (Bold added)

1.7 Please explain HP's position regarding whether an ROH Ch. 25 EIS provides for (a) the fulfillment of all of the substantive (not just procedural) requirements of HRS Chapter 343, and (b) full judicial review including of defects in the environmental review process, as provided by HRS § 343-7.

2. HP's DEIS Is Legally Defective and Need To Be Prepared and Republished Pursuant to HRS Chapter 343

2.1 As indicated above, HP's DEIS was prepared as a "ROH Ch. 23, Non-Chapter 343" DEIS. This is a legal error that requires revision, republication, and compliance with all provisions of HRS Chapter 343. HRS Chapter 343 is triggered by this project because it project involves the use of state lands or funds, and possibly county lands or funds.

2.2 HP's decision to not prepare this EIS under Chapter 343 violates the spirit and purpose of this important state law. As stated by the Legislature, the purpose of HRS Chapter 343 is:

> §343-1 Findings and purpose. The legislature finds that the quality of humanity's environment is critical to humanity's well being, that humanity's activities have broad and profound effects upon the interrelations of all components of the environment, and that an environmental review process will integrate the review of environmental concerns with existing planning processes of the State and counties and alert decision makers to significant environmental effects which may result from the implementation of certain actions. The legislature further finds that the process of reviewing environmental effects is desirable because environmental consciousness is enhanced, cooperation and coordination are encouraged, and public participation during the review process benefits all parties involved and society as a whole. It is the purpose of this chapter to establish a system of environmental review which will ensure that environmental concerns are given appropriate consideration in decision making along with economic and technical considerations. [L 1979, c 197, §1(1); am L 1983, c 140, §4]

HRS Chapter 343-5 states that the statute is triggered as follows: "§343-5 Applicability and requirements.

(a) Except as otherwise provided, an environmental assessment shall be required for actions that: (1) Propose the use of state or county lands or the use of state or county funds, ..."

The statute, rules, and case law are clear that the non-*de minimus* use of state lands or funds is a well-established trigger for the application of Chapter 343. *See* Antolini, The Moon Court's Environmental Review Jurisprudence: Throwing Open the Courthouse Doors to Beneficial Public Participation, 33 UH L. Rev. 581 (2011).

The use of the state highway by the HP project is also not an ancillary/secondary use connected to a primary action that is subject to a non-discretionary permit (because the SMA is a *discretionary* permit), and therefore the 2012 exception created by HRS § 343-5.5 does not apply to HP's project (*see* § 343-5.5 Exception to applicability of chapter. (a) Notwithstanding any other law to the contrary, for any primary action that requires a permit or approval that is not subject to a discretionary consent and that involves a secondary action that is ancillary and limited to the installation, improvement, renovation, construction, or development of infrastructure within an existing public right-of-way or highway, that secondary action shall be exempt from this chapter; . . .).

2.3. The DEIS is clear that HP proposes substantial, numerous modifications to Kamehameha Highway as an integral part of its project, particularly as part of the mitigation plan. All of these changes involve the obvious use of the state highway and probably significant state highway funds. None of these changes can be accomplished without State DOT cooperation, planning, design, funding, and implementation.

See references at: 1.4.3 Proposed Mitigation Measures, page 1-12: "Improvements to Kamehameha Highway are proposed as part of this project. These include reducing the total number of access points into the rural center by consolidating the ingress/egress to the site to one point off Kamehameha Highway and to allow no access via Pāhoe Road. A center two-way left-turn lane will be created on Kamehameha Highway to provide a refuge area for traffic turning left into and out of the rural center. A curb and sidewalk will be installed along the property's makai edge to narrow the existing shoulder width on Kamehameha Highway and eliminating space for illegal parking along the highway fronting the parcels." (Emphases added.)

See also Table 1-1 Required Reviews and Permits (page 1-15), Highways Review, which states: "driveway consolidation; restriping; crosswalk" by Hawai'i State Department of Transportation. See page 4-32, stating "highway use and access permit."

See also Figure 2-3 Conceptual Site Plan: "Shared Center Turn Lane" for Kamehameha Highway showing realignment of the mauka and makai lanes to accommodate a center lane, including some alteration of the Southbound bus turnout, as well as substantial new encroachment into the grassy strip bordering the makai side of the Highway and the mauka side of Pūpukea Beach Park, a new or realigned mauka shoulder lane, and a cross walk (without indication of the landing/ADA pad on either side of the road).

See also Page 2-13: "The shoulder of Kamehameha Highway will be narrowed by installation of a curb and sidewalk along the property edge, thus eliminating parking along the highway fronting the parcels. Access for pedestrians and cyclists will be incorporated."

See also Page 3-37: "Two additional changes are proposed to improve traffic flow along Kamehameha Highway in the access area: closure of the existing Foodland driveways on Kamehameha Highway to reduce the total

number of access points; and creation of a center two-way left-turn lane to provide a refuge area for traffic turning left into and out of the rural center." Further, at Page 3-37, "A curb and sidewalk will be installed along the project's makai edge and will narrow the existing shoulder width on Kamehameha Highway and eliminat[e] space for illegal parking along the highway fronting the parcels." And, page 3-37, "The northbound bus stop adjacent to the site will need to be relocated with construction of the proposed consolidated site driveway."

2.3.1 Q: What are the dimensions and locations of the proposed refuge land, narrowing and widening of the edges of the highway, the curb, and the sidewalk?

2.3.2 Q: How will parking be eliminated on the mauka side of the highway if vehicles nonetheless seek to park illegally (as they have in the past)? Does HP take the position that parking on the makai side of the highway is legal or illegal?

2.3.3 Q: What is the State's right of way on HP's property along this border and what are the conditions/restrictions on development in or modifications to the State's right of way?

Page 2-13: "The project will involve restriping of Kamehameha Highway to create a left-turn storage lane and shelter lane at the entrance. The restriped center land will extend from Pūpukea Road to Pāhoe Road. [A] The right-of-way for Kamehameha Highway has adequate width to accommodate the restriping, . . . [B] with any need for additional paving width provided from the mauka side along the project frontage."

2.3.4 Q: Please provide detailed information to support assertion [A].

2.3.5 Caveat [B] contradicts the first statement [A] – please reconcile these statements and clarify who owns the land on which the "additional paving" is projected?

2.3.6 Q: Both [A] and [B] contradict Figure 2-3 Conceptual Site Plan indicating that additional width will be taken from the *makai* side of the Highway, alongside or from Pūpukea Beach Park. What is the correct information? Who owns the land on the makai side of the Highway? And what are the dimensions of all of the modifications indicated?

2.3.7 Page 2-14: "a new crosswalk is proposed at Kamehameha Highway at the northern end of the property, near the corner of Pāhoe Road."

Q: what are the legal and spatial requirements, including ADA access and skirts/ramps, for crosswalks across Hawai'i State Highways? Has the physical, legal, and practical feasibility of the cross walk been analyzed? When was the last time DOT approved a sidewalk across Kamehameha Highway on the North Shore at signalized or un-signalized portion of the highway?

2.3.8 Q: Has HP engaged in discussions with DOT about any of the proposed highway modifications and crosswalk? If so, please indicate the date and results of those meetings regarding likely approvals, funding sources, and time frame, as well as the names of the participants.

2.3.9 Page 2-16: Project Schedule and Costs. The DEIS states: "Off-site costs and contingencies are also included in the overall construction cost estimate" of $18 million.

Q: Does the cost estimate include the cost of the State highway improvements, including the engineering and design fees? If not, and if so, what are those costs? What is the basis of the cost estimate? Who will bear those costs?

2.3.10. Page 3-42: "The drainage system along Kamehameha Highway is owned and maintained by the State of Hawai'i Department of Transportation, Highways Division." What it the exact nature of this connection to the state drainage, and the use of state lands and funds?

2.4 Conclusion: Together and even separately, these modifications constitute substantial changes to state land, specifically Kamehameha Highway along this very busy section of the arterial road segment in Pūpūkea, and constitute a trigger for HRS Chapter 343, requiring that the DEIS re-start anew with proper procedural and substantive safeguards for public participation.

3. The Unilateral Agreement That Requires Highway Improvements Is Triggered by this Project

3.1 HP is well aware of the Unilateral Agreement (UA) that governs further development on the site and triggers highway improvements. However, the DEIS erroneously claims that the UA does not apply to this major development. The UA is another legal basis for requiring a proper Chapter 343 EIS. The references to the UA need to be corrected in the DEIS.

Page 3-30: The DEIS makes numerous contradictory statements about improvements that affect the Pāhoe Road intersection: (a) the DEIS states that conditions to a 1978 zone change were incorporated into a Unilateral Agreement (UA), including "installation of improvements on Pāhoe Road and the intersection of Pāhoe Road and Kamehameha Highway; (b) at Page 3-31, the DEIS states "the Unilateral Agreement highway improvements at Pāhoe Road does not apply to the property use."; (c) at Page 2-13, the DEIS acknowledges that the project involves adding a center lane from Pūpūkea Road to Pāhoe Road, and, (d) at Page 2-14, "a new crosswalk is proposed at Kamehameha Highway at the northern end of the property, near the corner of Pāhoe Road."

3.2 Q: Given that the DEIS contemplates highway improvements that impact the intersection at Pāhoe Road and also the installation of a crosswalk at Pāhoa Road and Kamehameha Highway, why does the DEIS say that the UA is not relevant?

3.3 Conclusion: The UA is an additional trigger for Chapter 343 compliance.

4. HP's DEIS Fails to Adequately Address Impacts to the Pūpūkea Marine Life Conservation District

4.1 Page 2-5: Environmental Sensitivity: The DEIS states that the proposed Project is in "close proximity to the Pūpūkea Marine Life Conservation District (MLCD)."

Comment: Please provide details about the proximity and acknowledge that the Pūpūkea MLCD is only one of three MLCDs on O'ahu, one of eleven across the entire State of Hawai'i, and represents the highest level of state protection for marine waters.

4.2 Page 3-21: Comment: Although HP claims to "provide a comprehensive and accurate depiction of the marine conditions down-gradient of the project site at Pūpūkea Beach Park/Sharks Cove," the marine survey is insufficient, inadequate, and misleading.

Page 3-26: Comment: The DEIS inaccurately claims the Pūpūkea MLCD shoreline "is essentially devoid of benthic biota." The marine survey inaccurately characterizes the nearshore zones as "essentially barren." Appendix C Page 16. There are a myriad of reports, surveys, peer-reviewed publications, and observational data that demonstrate the biological diversity and marine species abundance at Sharks Cove and the Pūpūkea MLCD. There is evidence that the Tide pools at Sharks Cove is a important sheltered habitat for larval, juvenile, and recruit stage fishes that are found in nearshore and reef habitats. The Pūpūkea MLCD is biologically rich and home to many species of fish, invertebrate, benthic alga growth (limu), marine mammals, and turtles. Additionally, there is a plethora of easily visible biota throughout the Pūpūkea MLCD. The failure of the marine survey to observe and acknowledge the rich biota of the MLCD is particularly troubling in light of the emerging scientific consensus about the importance of biological reserves in Hawai'i such as the Pūpūkea MLCD.

See also Page 3-24: In the "inner region, extending from the inner shoreline of Sharks Cove to a distance of approximately 165 feet (50 m) offshore . . . attached and unattached organisms are rare."
Q: What scientific observations form the basis for this assertion that organisms are "rare"? What was the list of organisms sought be observed and actually observed? What was the methodology used? What time(s) of day or night were the surveys conducted and what were the moon, tide, and weather conditions on those dates/times?

See also Page 3-25: "No extensive benthic alga growth or seagrass were observed in any of the survey areas."
Q: What scientific observations form the basis for this assertion that extensive algae was not observed? What was the list of limu sought be observed and actually observed? What was the methodology used? What time(s) of day or night were the surveys conducted and what were the moon, tide, and weather conditions on those dates/times?

Q: Why were no previously published studies of the Pūpūkea MLCD reviewed or included in the marine survey? Why did the marine survey focus almost exclusively on coral and ignore the majority of other fish species, limu, and macroinvertebrates present in all transects? Why were diurnal and nocturnal invertebrate populations not considered? Why were climate change, ocean acidification, and other "stressors" not analyzed?

Page 3-10: The DEIS states that "[n]o federal Critical Habitat exists for any species on or adjacent to the project area."

Comment: This statement is technically true but very misleading. Federal Critical Habitat does now exist for the Hawaiian Monk Seal in the area directly across the highway from the Project, throughout the Pūpūkea MLCD. Designated in 2015, the critical habitat was designated in this area because of the frequency of Monk Seals along this coastline. MPW has often observed Monk Seals in Sharks Cove and in the Tidepools, both swimming and basking. MPW collaborates with NOAA to ensure the safety of the Monk Seals. The additional visitors drawn to the Pūpūkea Beach Park and MLCD by the Project is likely to increase the harassment of and impacts on Hawaiian Monk Seals and adversely impact their critical habitat. This needs to be analyzed in the revised DEIS.

Appendix C Page 12: "The purpose of this baseline survey is to provide the information to make valid evaluations of the potential for impact to the marine environments from the proposed Pūpūkea Rural Community Commercial Center Project . . . . Based on these data, it is possible to address any concerns that might be raised in the planning process."

Comment: The marine survey relied upon by the DEIS is insufficient as it does not provide a comprehensive and accurate depiction of the marine habitat, community structure, or diversity. As the data provided is incomplete and misleading there is no way to adequately analyze or address the development's impact to the marine environment. The marine consultant does not appear to be impartial, capable, or inclined to conduct an accurate and credible survey of the potential impacts of this project or alternatives on the MLCD.

Field observations by MPW, as indicated by the photos below, confirm that the MLCD has diverse and abundant biota. Please note that all images below were taken within "Transect One" and "Transect Two" and demonstrate only a small amount of the rich biological diversity found at Sharks Cove:

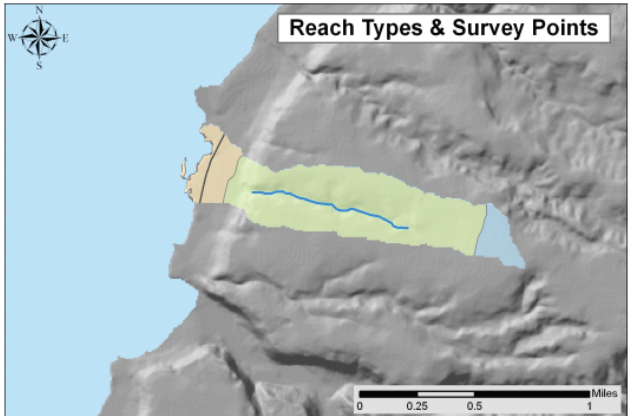
Conclusion: The marine survey did not provide a comprehensive and accurate depiction of the marine habitat at the Pūpūkea MLCD and is therefore defective and must be redone by credible marine consultant.

4.3 Page 3-13: The DEIS states that groundwater conditions at the site indicate a "strong tidal response at both well sites, with amplitudes on the order of one third to one half of the ocean's tidal amplitude." The DEIS also indicates that a "very sharp salinity increase at B-7 at 52 feet" and that "ocean saltwater underlies the site at depth." At Page 3-14, the DEIS states "The shallow ground-water eventually discharges into the nearshore waters."

Comment: The Nance survey indicates that essentially an underwater river flows under the property from mauka to makai at the 50-52' depth. This makes sense as the property sits at the mauka end of Hakuola Gulch, which drains a watershed in Pūpūkea.

DAR Watershed Code: 31022

Hakuola Gulch, O'ahu



Source: DAR - http://www.hawaiiwatershedatlas.com/watersheds/oahu/31022.pdf.

This means that pollutants that enter this zone at the Project property became a "freshwater freeway of pollutants" that connects directly to the Tidepools and the MLCD. This accords with the field observations of MPW and anyone familiar with the nearshore area, which displays high levels of freshwater input, often creating visible sheens of floating freshwater that stretch for hundreds of feet into the ocean. Indeed, a cultural story relayed in the Cultural Impact Assessment about Kalua Maua tells the story of freshwater being gathered by Native Hawaiians in gourds at Kalua Maua (also known as "Three Tables"). Swimmers often experience the

sensation of cool freshwater inlets and this freshwater interface apparently has a strong biological connection to the marine life in this area.

Q: Why was the mauka to makai connection of the underground freshwater flows in the ahupua'a of Pūpūkea, especially in Hakuola, not properly referenced or analyzed in the DEIS?

Page 3-16: The DEIS states "There are no streams or wetlands on the site itself or adjacent areas."

Comment: As stated above, the Nance study shows that an underground river does flow through the property at about the 50-52' level. Just because the stream is not visible on the surface does not mean it does not exist hydrologically.

4.4 Page 5-4: The DEIS notes that "There would be no new effects to groundwater resources at the property with the existing commercial operations."

Comment: This statement contradicts several other statements in the DEIS that existing operations are affecting groundwater discharge, which leads to the MLCD. For example, the groundwater analysis (DEIS, Appendix B) notes that "there is a strong tidal response at both well sites," Page 12; "Permeability of the volcanics in which the groundwater resides is very high," Page 12; "The somewhat higher nitrogen levels in the downgradient B-7 monitor well in comparison to the B-1 monitor well may reflect the input by the present activities on the site." Page 19 (emphasis added); "[c]learly, results for the shoreline samples at Transects 1 and 2, as well as in the B-7 monitor well, show an addition of nitrogen in the movement of groundwater across the project site to the shoreline." Page 19 (emphasis added).

4.5 Page 5-4: The DEIS states that "Storm water management controls on the property would minimize the release of suspended sediment and urban runoff contaminants. Runoff reaching the ocean would be comparable quality as with existing conditions." (Emphasis added.)

Q: What does "would" mean? Does it mean that controls are not yet in place? What is the connection between these "controls" and the conditions that are required to be met under 2017/SMA-21?

Comment: This statement contradicts the DEIS Appendix B, Page 27, which states that the proposed drainage system will "substantially reduce the suspended and bedload sediment that currently is carried into the marine environment by surface runoff" and that this represents "a significant environmental benefit in comparison to the present use of the property." (Emphasis added.) Further, this statement in the DEIS constitutes an admission that the current conditions on the property are leading to "substantial" pollution of the marine environment.

Q: What will HP do to correct the present conditions on the property to eliminate the polluted discharges from its property?

Comment: The runoff referred to above runs directly into the sandy/rocky areas of Pūpūkea Beach Park and the waters of the Marine Life Conservation District. "The field inlet [Shoreline Discharge Site 1] picks up most of the runoff from the Foodland parking lot and essentially all of the runoff which sheet flows off the three contiguous

Hanapohaku parcels into the Kamehameha Highway gutter and moves south to the grated inlet." Appendix B, Page 25.

4.6 Page 5-4: The DEIS further states that "[t]he minor contribution of nutrients in the shallow groundwater from wastewater disposal will not adversely affect the nearshore water quality," and "[t]he marine environment would not be adversely affect by the no-action alternative."

Comment: MPW disagrees with these statements about the existing conditions and their impact on groundwater and the marine environment.

Q: What does "would" mean? Does it mean that controls are not yet in place? What are the sources of nutrient contamination on the property under existing conditions? What are the current and proposed "controls" on these discharges? What is the connection between these "controls" and the conditions that are required to be met under 2017/SMA-21?

4.7 Page 3-16: The DEIS indicates that the Project will increase nitrogen by 4% and phosphorus by 7% to the shoreline makai of the Project.

Q: Has HP or its consultants conducted any studies of the actual impact of this nutrient loading of additional nitrogen and phosphorus on the marine environment? What is the impact on the type of limu eaten the Hawaii Sea Turtle that forages in the MLCD? What is the impact on the benthic organisms and the fish in the tidepools and the Sharks Cove area?

4.8 Appendix B Page 30: Described the conservative estimated reduction in Nitrogen of 50% and Phosphorus by 25%, this differs greatly from the estimates in the DEIS.

Q: Please clarify the discrepancy.

4.9 Appendix B Page 22: The DEIS states that the marine water samples were taken from only one day of sampling, May 17, 2017.

Comment: In order to better quantify the true natural background levels more than one day should be used, preferably during the wet and dry seasons.

4.10 Page 3-21, Water Quality: The DEIS states "no exceedence of enterocci" and that the area is "not routinely monitored" by DOH.

Q: Did HP take any samples or study pathogens as part of its DEIS process? If not, why not? Is HP aware of the State standards for recreational water quality for marine waters? Why are those standards not mentioned in the DEIS? What data did HP gather on the compliance with these standards in the MLCD? Is HP aware that State sample of this area is not at the frequency required to provide a geometric mean?

4.11 Page 5-4: The DEIS refers to "recently installed storm water management controls." In contrast, Appendix B Page 1 states that "[a]t present, there are no drainage improvements on the three Hanapohaku parcels."

Q: What are the controls that were "recently installed" and when were they installed?

4.12 Page 3-45: The DEIS promises that "[d]ischarge to the off-site DOT drainage system will be at a flow rate equal to the pre-development condition." Later, at Page 3-55, the DEIS promises there will be a "positive impact" from the discharge to the DOT drainage system.

Q: How will HP monitor the flow rate, post-development, to confirm that this promise is kept? How will the monitoring data be made accessible in a timely manner to DOH, DOT, and the community?

4.13 Page 1-10: The DEIS states that "the volume and flow rate of storm water will be reduced."

Q: Is this compared to the use of non-LID technology if the project proceeded? Please clarify the baseline to which the comparison is being made.

4.14 Page 1-11: "the rural center's draining system will have a significant environmental benefit in comparison to the present use." This statement is repeated at Page 3-19.

Q: What is the "present use"? Does that mean the current conditions or does that mean the project permitted under the SMA Minor (2017), for which the conditions have not yet been fulfilled? What does this mean in relation to the no action alternative?

4.15 Page 4-33: "The Pūpūkea MLCD and the coastal and marine resources of Pūpūkea and Waimea are valuable assets of the North Shore. The project supports the continued protection of the marine sanctuary."

Q: How does the project support the protection of the marine sanctuary? Please provide specific examples.

Conclusion: The flawed science and analysis concerning the scale of impacts highlights why it so important that HP's DEIS fully comply with both the letter and spirit of the law. The DEIS must help decision makers make fully informed decisions on the proposed activities; after reviewing the DEIS, decision makers must understand the breadth of harm to impacted species and the environment, must be able to choose a course of action from a range of reasonable alternatives, and must have at their disposal a range of mitigation measures that will significantly lessen environmental impacts, not merely ignore them as HP does here. If HP does not adequately and honestly consider the environmental impacts of the Project, how can the community and decision makers trust that the impacts will be properly mitigated for? For the reasons discussed in detail above, MPW believes that the DEIS fails to meet these requirements and does so in such a way that the failures cannot be remedied through the issuance of a final EIS. Accordingly, the document must be thoroughly revised and reissued as a draft for further public review and comment.

5. HP's DEIS Fails to Adequately Address Recreational Impacts to the Pūpūkea Beach Park and Pūpūkea MLCD

5.1 Page 3-11: The DEIS notes that "the City and County Pūpūkea Beach Park, is located across Kamehameha Highway from the rural center site. This recreational area is heavily utilized, and is one of the premier snorkeling and shore-based SCUBA diving areas in the State of Hawai'i."

Comment: A review of the DEIS by Professor Brian Szuster, at the University of Hawai'i at Mānoa, noted the serious deficiency of the document with respect to recreational impacts. Dr. Szuster is an Associate Professor of Geography, with a PhD focused on assessing cumulative environmental effects in tropical environments; he teaches coastal management, coastal recreation management, introductory and advanced environmental impact assessment; he has over 25 years of experience consulting as an environmental planner; and he has been project manager or lead consultant on over 50 individual EISs.

Dr. Szuster observed that the DEIS makes virtually no mention of coastal recreation impacts, which he concluded was certainly odd when the proposed action is adjacent to one of the most important coastal recreation sites in the State of Hawai'i. He indicated that this oversight represents a significant deficiency in the DEIS and that there is also no excuse for the oversight. According to Dr. Szuster, the authors had access, if they chose to look, to all the baseline data needed to assess coastal recreation impacts in the a study titled "Recreation Carrying Capacity and Management at Pupukea Marine Life Conservation District on Oahu, Hawaii (2008)," by Needham et al. This study assessed social and facility carrying capacity levels along with existing levels of recreation conflict at the Pūpūkea MLCD. The DEIS should have considered how increased activity associated with the proposed action would affect these parameters. He concluded that the deficiency is significant given the location of the proposed action and there is no excuse given the existence of baseline data (such as Needham et al) to support the impact analysis. It is a serious failure of the proponent's scoping process to miss a potential impact category which is that obvious.

5.2 Q: How will the project impact the recreational use of the Pūpūkea Beach Park and Pūpūkea MLCD? How will these impacts be mitigated?

Conclusion: The absence of any recreational impact assessment regarding the beach park and the MLCD is a major avoidable deficiency given the location of the proposed action and the availability of baseline data to support the analysis.

6. HP's DEIS Fails to Consider Reasonable Alternatives

6.1 Page 5-1: The DEIS states "[a] wide range of alternative uses are considered . . . ."

Comment: This is not true. The DEIS considers only one semi-realistic alternative – a larger commercial shopping center. The "Deferral" option is not a viable or meaningful alternative. No other reasonable alternative is offered.

Q: Is HP willing to consider a true community-based alternative in a revised DEIS such that the alternatives analysis is meaningful to the public and decisionmakers?

6.2 Page 5-2: The DEIS describes four "Evaluation Criteria" for the alternatives.

Comment: Additional criteria for alternatives should be (a) "ensuring no impact to Pūpūkea Beach Park and the Pūpūkea Marine Life Conservation District"; (b) no adverse impact on vehicle traffic or pedestrian safety; (c) no adverse impact on Pāhoe Road neighbors.

6.3 Page 5-2: The DEIS states that alternatives that were "not consistent with the B-1 zoning district" were rejected for further analysis.

Comment: The Open Space Park/Recreation Use option is not sufficiently explored and should be considered as a full alternative in a revised DEIS. Partial use of the property for this purpose is not inconsistent with B-1 zoning. In fact, the location of the property, as the DEIS notes, "across the highway from a large continuous County beach park system," page 5-2, means that such uses on this property would be consistent with the usage of those public recreational spaces.

6.4 No Action Alternative Page 1-13: The DEIS states that the "baseline" is the property with "existing conditions."

Q: Please describe whether, how, and when HP has fulfilled the conditions required by 2017/SMA-21 such that "existing conditions" are fully legal.

Comment: Please include transparent information in the DEIS to indicate that MPW has a pending contested case petition against DPP for the issuance of this specific SMA permit.

6.5 Page 1-13: As the DEIS acknowledges, "some existing commercial operations at the property are less than desirable, such as the disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, vehicle ingress/egress, and non-focused pedestrian access." Page 5-7 repeats this statement about "disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, haphazard vehicle ingress/egress, and non-focused pedestrian access."

Comment: MPW appreciates how HP has cleaned up the site in response to these serious community concerns and in order to "legalize" its development activities. The poor track record of activities on the site from the date the new owners purchased the property (2014) until DPP's issuance of 2017/SMA-21 indicates, however, that any existing and future permits and conditions to any development on the site must have transparent, detailed, enforceable provisions such that DPP and the community can maintain vigilance over this sensitive location. MPW notes that HP's web site has not been maintained in a manner that provides complete and transparent information to the community as promised by HP.

Q: How will HP ensure that its compliance with any existing and future permits and conditions be transparently shared and communicated with the community?

6.6 Page 1-13: The DEIS states that 2017/SMA-21 imposes "very specific actions required of the owners to manage activities to minimize effects to neighbors, the community and the environment." Page 5-7 repeats this statement: "that 2017/SMA-21 imposes "very specific actions required of the owners to manage activities to minimize effects to neighbors, the community and the environment."

Q: Please provide a complete, accurate, and current update in the DEIS on HP's progress toward these "very specific actions."

6.7 Page 5-3: The DEIS notes that the current commercial uses on the property are "entitled" and "approved."

Comment: The current uses are not "entitled" and "approved" until all conditions of 2017/SMA-21 have been met and the pending contested case petition challenging that permit have been resolved.

Comment: Please add a notation to this effect on this first paragraph.

6.8 Page 5-3: The DEIS reports that "soils stabilization and erosion control measures [are] in place."

Comment: MPW notes that HP engaged in extensive illegal grading and grubbing on the site since it acquired ownership, and was assessed fines by DPP for these illegal activities.

Q: What corrective measures were taken in response to DPP enforcement action? What measures that are "in place," providing dates of installation/completion, and describe the additional measures not yet in place that are required by 2017/SMA-21?

6.9 Page 1-13: The DEIS indicates that the No-Action Alternative "would dismiss" the proposed action that is "designed to be consistent with the principles of the North Shore Sustainable Communities Plan."

Q: Are the "existing conditions" under the partially fulfilled conditions of SMA-21/2017 "consistent with the principles of the North Shore Sustainable Communities Plan"? If yes, why? If not, why not?

6.10 Page 5-6: The DEIS states "the No Action alternative would not be consistent with all the policies and objectives of the North Shore SCP."

Comment: This statement appears to be another admission that the existing uses on the property violate the North Shore SCP.

Q: How is SMA-21/2017 valid if it is not consistent with the North Shore SCP?

6.11 1-13, Alternative – Commercial Shopping Center Page: The DEIS states that the B-1 zoning would allow for 1.0 FAR and allow over 100,000 SF floor area.

Q: Is a Commercial Shopping Center of 100,000 SF or even 46,000 SF feasible given the numerous site constraints disclosed in the DEIS, including the UA and the NSSCP?

6.12 Page 1-13: The DEIS states that the "larger Hanapohaku properties could easily support an [sic] FAR denser [later noted as .392 FAR] than the existing commercial floor area of the Foodland store at .294 FAR."

Q: What is the basis of the statement "easily support"? How feasible and reasonable is the "need" for "access driveways connecting off both Kamehameha Highway and Pāhoe Road, with partial basement parking," particularly given, as noted in the prior paragraph, that "[a] proposed 2004 project for a shopping center project . . . was strongly opposed by the community," in part for these two reasons?

6.13 Page 1.13: The DEIS states that "deferral" is an alternative to the Project. "This alternative considers the deferral of the project to a later date." Page 5-7.

Comment: The DEIS does not indicate any meaningful or substantive difference between the "deferral alternative" and the No Action alternative.

Q: Is there a difference?

Comment: **Deferral is a "straw alternative," that is, it is NOT a legitimate alternative, logically or legally, and should be eliminated completely from the DEIS.**

Q: Has G70 used a "deferral" alternative in other EISs? What is the legal basis for this kind of alternative? What is the basis for this kind of alternative being considered best practice for EIS consultants?

6.14 Page 1-14: The DEIS notes that the "[p]otential impacts would essentially be similar to those described in the No-Action Alternative."

Comment: This observation indicates, in fact, that there is **no meaningful difference** between Deferral and No-Action. Therefore, as noted above, this alternative should be completely eliminated from the DEIS.

6.15 Pages 5-8 through 5-14 provides charts that show that there is no meaningful difference between the No Action Alternative and the "Deferred Action Alternative."

Comment: In column 2 and 4 of each page (throughout seven pages), the language about the two alternatives is almost completely "cut and paste." The only addition for the Deferred Alternative is this boilerplate sentence: "The potential future project plans are unknown" or "to be determined."

Comment: This shows again that there is **no meaningful difference** between Deferral and No-Action.

6.16 Page 5-15: The DEIS acknowledges that the "Deferred Action Alternative" "would essentially extend the No Action Alternative indefinitely, resulting is a similar set of comparative benefits and drawbacks . . . ."

Comment: This statement confirms that this "alternative" is, in fact, **meaningless**.

6.17 Page 5-7: The DEIS states that, with the Deferral Alternative, "the local and regional traffic conditions are expected to remain challenging."

Comment: The DEIS should specify how the existing uses of the property, and the current development status under the 2017/SMA-21, has contributed to the local and regional traffic conditions.

Q: Was any kind of professional traffic analysis completed for HP's application for 2017/SMA-21?
If not, then how does HP know the impact its current development is having on the "local and regional traffic conditions"? If so, please provide a copy of that traffic analysis in a recalculated DEIS for public and agency review.

6.18 Page 5-7: The DEIS states that, under the Deferral Alternative, "community residents would continue to travel a significant distance to accessing many goods and services." Later, the DEIS states, at Page 3-56, that the Project "may reduce vehicle trips for some area residents."

Q: Has HP does an analysis of the consumption/purchasing patterns of Pūpūkea and Sunset Beach residents? Has that analysis been correlated with travel times and locations? If not, then how does HP support the statement that either the No Action or the Deferral Alternative will have any impact on community residents' travel for accessing goods and services?

6.19 Page 5-7: The DEIS states that if the project is deferred, "there would always be the potential for a change in ownership to another entity, possibly an offshore owner group with different business perspectives and site development objectives."

Comment: This "straw argument" statement appears intended to intimidate the community into accepting a development project that has many serious flaws.

Q: What is the basis of stating that "an offshore owner" is "possibl[e]"? Has HP explored options to sell the property to another owner, offshore or in the islands? What prevents HP from selling to "an offshore owner" of the kind described at any time, either soon after permits for the Project proposal are received or at a later date? Is HP willing to enter into a covenant and SMA conditions that bind future owners to what it believes represent good "business perspectives and site development objectives"?

6.20 Page 5-5, Commercial Shopping Center Alternative: The DEIS states that a commercial shopping center would be "allowed per the B-1 Neighborhood Business Zoning."

Comment: MPW notes that the definition of B-1 zoning is:

> B-1 Business - Neighborhood
> The intent of the B-1 neighborhood business district is to provide relatively small areas that serve the daily retail and other business needs of the surrounding population. It is intended that this district be generally applied to areas within or adjacent to urban residential areas, along local and collector streets, but not along major travel routes or on a large-scale basis. It would also be applied to rural and urban fringe town centers, which may or may not be located along major travel routes. (Taken from Land Use Ordinance, May 1999, Sec. 21-3.110 (b)) (emphasis added).

Q: How is the alternative of 100,000 SF or 46,000 SF consistent with B-1 requirements of "small areas" that "serve the daily" needs of the surrounding population? Given the conditions of North Shore Sustainable Communities Plan, on what basis does HP believe that this alternative is feasible?

6.21 Page 5-5, Water Use: The DEIS notes that the alternative would use
56,200 gpd with landscaped irrigation." Page 3-44 references the separation of the irrigation and potable water systems.

Q: Will HP use recycled, non-potable water for the future development on the project? If not, why not? If so, will HP install dual water systems for the non-potable water used for irrigation?

6.22 Page 5-6, Traffic & Transportation. The DEIS states that "[t]raffic conditions would generate approximately 157 vehicle trips during the Saturday peak hour . . . ."

Q: What data in the DEIS supports this statement?

6.23 Page 5-6, Economics/Fiscal. The DEIS states that "estimated total employment would be 86 full time equivalent jobs among the various tenants."

Comment: This estimate of 86 is the same as for the proposed Project. See DEIS, page 3-33.

Q: Is this an error? If not, please support this estimate with detailed information regarding the jobs (part-time and full-time) attributable to the alternative Shopping Center. This error indicates that the analysis of this alternative was not carefully done and the analysis must therefore be revised with accurate citations to factual support.

6.24 Page 5-6, Economics/Fiscal. The DEIS states "[t]he Real Property Tax due to the City and County of Honolulu would be about $148,600 annually." (Emphasis added.)

Comment: Page 1-11 of the DEIS states that the "County real property taxes will increase to approximately $187,500 per year."

Q: Are both figures correct and what is the basis for these figures? How is the property tax for a larger commercial development noticeably less than the property tax for a "smaller" commercial development?

Comment: This error indicates that the analysis of this alternative was not carefully done and the analysis must therefore be revised with accurate citations to factual support.

6.25 Page 5-6, Land Use/Zoning. The DEIS states that the Shopping Center alternative would "slanted more heavily toward offerings which cater to visitors to the areas" and have a "greater percentage of mainland business franchises."

Comment: This statement demonstrates that this alternative is a "straw" alternative, put in the DEIS simply to make the proposed development look good.

Q: If the "slant" is toward visitors with this alternative, why is that also not a true statement for the "smaller" proposed project? What is the basis, in fact or law, for this distinction? If the percentage of mainland business franchise is "greater" for this alternative, why is that also not the same likely fate for the "smaller" proposed project? What is the basis, in fact or law, for this distinction?

6.26 Page 5-7, Archaelogical and Cultural Resources. The DEIS notes that "[t]he large scale of the development could limit the open space/public areas and landscape setting for cultural education and activities."

Q: What specific type of cultural education and activities are planned for the proposed Project? Under the proposed Project, is it possible that no cultural education or activities might take place? Why would the space or time allocated for cultural education and activities be any different under this alternative or the proposed Project given that these appear to be discretionary for the landowner and tenants?

6.27 Page 5-6, Groundwater. The DEIS states that the Shopping Center alternative would have an injection well.

Q: What would be the depth and size of the well(s)? How would the "mix into the subsurface aquifer" be different than the projected mixing under the proposed Project's wastewater system, which will leach into the groundwater table below the property?

6.28 Page 5-6, Surface Water/Storm Water Runoff Quality. The DEIS states that "[w]ithout effective onsite measures to minimize inputs, there may be great amounts of contaminants in the runoff water reaching the ocean."

Q: Does this statement ("without") mean that HP would not install appropriate and effective "onsite measures" to control wastewater under this alternative? If so, then how can the community have any confidence that such "effective onsite measures" will be installed under the proposed Project?

Comment: This statement again demonstrates again that this alternative is a "straw" alternative.

6.29 Page 5-6, Marine Environment. The DEIS states that there would be "an increased potential for adverse effective to the nearshore ocean water quality and marine environment" from the Shopping Center alternative.

Q: What is the basis for that statement and how much would be increase be? How would the increase be measured and monitored?

Comment: Once again, this statement demonstrates again that this alternative is a "straw" alternative.

6.30 Page 5-7, Noise and Air Quality. The DEIS states that the Shopping Center alternative "would have noise associated with trucks and vehicles accessing the commercial operations. There would also be vehicle emissions associated with the trucks and vehicles accessing the site."

Q: What is the basis for comparison of this increase noise and emissions with the proposed Project? How many trucks and vehicles would access the site, weekdays and weekends, and at what hours, under the two alternatives? How will HP reconcile this noise and emissions impact with the existing noise and emissions from the Foodland delivery trucks, which the DEIS acknowledges is a significant community concern?

Comment: This statement demonstrates again that this alternative is a "straw" alternative, put in the DEIS simply to have a punching bag.

6.31 Page 5-7, Visual Resources. The DEIS states that the "two-story buildings could extend to heights of 35 to 40 ft."

Comment: Please provide information about height limitations for various kinds of buildings for this property.

Q: Does that same potential height of the buildings apply to the proposed Project? If not, why not?

Conclusion: HP must consider reasonable alternatives that conform to the NSSCP and that involve *less* not *more* development than proposed project.

7. HP's DEIS Fails to Adequately Asses Traffic Impacts

MPW has submitted a separate set of comments on January 8, 2018, from expert Tom Brohard regarding HP's inadequate assessment of traffic impacts. We incorporate all of those comments by reference here.

Mr. Brohard concludes that: "In sum, the November 2017 DEIS for the proposed Pupukea Rural Community Commercial Center is seriously flawed as it does not provide an adequate assessment of traffic impacts on the adjacent roadway segments and intersections. As explained in detail throughout this letter, many of the assumptions and conclusions in the TIAR are not supported by proper documentation and substantial evidence. Errors in the TIAR methodology include faulty trip generation calculations based on superseded, outdated information. Further study of these and the other issues identified in this letter is required as part of a Recirculated DEIS for the Proposed Project."

8. HP's Promises Are Illusory Unless It Agrees To Binding Covenants in the SMA

8.1 Comment: Lofty Promises v. Enforceable Conditions. The DEIS uses lofty descriptions that are wrapped in a drum-beat of cultural and community references to try to cloud the true nature of what is, in essence, a tourist trap. Sweet promises of local jobs, locally owned businesses, highway and pedestrian improvements, cultural sensitivity and programming, and no impacts to the environment are just that – promises. **None of these promises is currently enforceable.**

The day after HP secures the SMA for this property, the property can be sold, the businesses can be re-leased, and the entire litany of DEIS promises means nothing.

The community and DPP have a right – even a duty – to be skeptical about all of these promises given the very poor track record of this developer who operated for several years with illegal development of the property, racking up numerous violations of the SMA and other laws. Indeed, for this reason, MPW has filed two petitions for a contested case hearing against DPP in response to improperly issued SMA permits. Neither of these contested case proceedings has been resolved or even advanced to hearing. As far as MPW can discern, approximately $100,000 in assessed fines by DPP against the City are still unpaid. **The owner does not have clean hands in approaching this proposed major development. Therefore, in reviewing the DEIS, assumptions, "brown-washing" and "green-washing," as well as facts and studies, should be seriously reviewed and questioned.**

8.2 Page 2-3: The DEIS describes existing uses at Foodland and then currently on the HP property.

Comment: The DEIS should describe the development at the site from the 2014 purchase of the property by HP until the changes made in response to the issuance of 2017/SMA-21. Elsewhere (pages 1-13 and 5-7), the DEIS uses the following language and it should be repeated here with more detail: "some existing commercial operations at the property are less than desirable, such as the disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, haphazard vehicle ingress/egress, and non-focused pedestrian access."

8.3 Page 2-3: The DEIS states the commercial operations on the property are "entitled" under 2017/SMA-21.

Comment: The current uses are not "entitled" and "approved" until all conditions of 2017/SMA-21 have been met and the pending contested case petition challenging that permit have been resolved. Please add a notation to this effect on this paragraph.

8.4 Page 2-3: The DEIS states "[c]urrent compliance actions include settlement of fines and obtaining site development and building permits." This is mentioned again at Page 3-30.

Comment: The DEIS should include specific information about the assessment of fines by DPP and the "settlement of fines" between HP and DPP.

Q: What are all violations, fines assessed, and penalties paid since HP acquired the three parcels?

8.5 Page 2-3: The DEIS states "[t]he existing uses will be completely removed for development of the Rural Community Commercial Center."

Q: Has HP informed all of its current tenants that their operations will be shut down during development and that the likely duration of development shut down is projected to be at least two years (see Page 2-16)?

8.6 Page 2.4: The DEIS states that the NSSCP "identified very limited locations for infill development."

Comment: This statement emphasizes the particularly heavy responsibility that HP has to develop this site with the highest level of care and quality. Not only is this commercially zoned lot virtually unique on the North Shore in terms of zoning and the NSSCP, but it is rare, if not unique, to have a commercial lot on the North Shore that has direct ocean views and such close access to a beach park and marine reserve. This again imposes special responsibilities on HP in developing these lots. Once developed, the structures and infrastructure on these lots will essentially be irreversible. Therefore, HP has a kuleana, a responsibility and a privilege, to carry out its processes and development with the highest ethical and community standards. Unfortunately, the actions of HP since it acquired the land have not met these high standards, or even minimum legal standards, in the view of MPW and many members of the community.

8.7 Page 2-5: The DEIS states that the Project will support local businesses and home-grown entrepreneurship, with business and employment opportunities for area residents.

Q: What is HP's definition of "local," "home-grown," and "area residents." Are any of these aspirational statements legally binding on HP? If not, is HP willing to enter into conditions and covenants on its SMA permit and development that bind it to these commitments?

8.8 Page 2-5, Culture and Sustainability: The DEIS mentions the Pūpūkea "region."

Comment: Pūpūkea is an ahupuaʻa not a "region." Given that emphasis in the DEIS and this section in particular on culture and sustainability, the lack of understanding of, and appropriate reference to, the ahupuaʻa in which the Project is located is surprising and disappointing.

8.9 Page 2-5, Culture and Sustainability: The DEIS wraps the project in "culture" by mentioning native plants, a gathering place for hula and music, and just "talk story." This promise is repeated at Page 3-29.

Q: Will HP commit to using only native plants for all of its landscaping? If not, then what percentage of the landscaping will be native plants? Will interpretive signage that is culturally and scientifically accurate be utilized?

Q: What is the size of the area where hula would be performed? How often will hula be performed and by which hālau? Is it culturally appropriate to have hula performances so near a three-lane highway, with the associated noise, and in an area where there may be to eight food trucks? Who will ensure, and how will it be ensured, that the hula performances are authentic and culturally appropriate and not "Kodak Hula Show" for tourists?

Q: Does HP have any experience with cultural programming? If so, please detail that experience.

Q: Who is advising HP on the cultural sensitivity of this Project?

Q: Does HP take the position that promises of some native plants and some hula performances make the Project culturally appropriate or a cultural center?

8.10 Page 2-5, Culture and Sustainability: The DEIS states that "Principles of sustainability are integrated" into the Project.

Q: Will HP commit to achieving a high level of green building design for the Project equivalent to USGBC LEED Silver or Gold? If so, then please indicate this in the DEIS. If not, why not?

8.11 Page 3-46: The DEIS states that HP is committed to non-polystyrene food containers for its operations.

Comment: This is commendable.

Q: Is this the current policy of HP for its vendors or is HP currently allowing vendors to use polystyrene containers?

Q: Will HP also commit to operating "plastic-free" for all operations at the Project? See https://www.kokuahawaiifoundation.org/pfh

8.12 Page 2-10: The DEIS indicates that the "community gathering place" is "anchored" by "Hawaiian settlement and stewardship of resources."

Comment: This appears to be unfortunate "brown-washing" of this commercial development.

Q: What is the connection between the "central" area and "Hawaiian settlement and stewardship of resources?"

8.13 Page 2-6: The DEIS refers to "park-like," "community gathering place," or "green space" numerous times in the document. (*See*, for example, page 1-20, 2-10, 2-14, 3-52)

Comment: **These "green-washing" terms should be deleted throughout the document** as inappropriate for what is essentially and primarily a shopping center, with a very small green area located between potentially eight food trucks and a few feet away from a very busy two (or three)-lane highway and sandwiched between a restaurant and a retail outlet. Call a duck a duck.

8.14 Page 2-7: Figure 2-3 Conceptual Site Plan.

Comment: There are numerous problems with this Figure that need to be clarified or corrected, including:

(a) the location of the bathrooms,

(b) the location of any mini-bus or full-size bus parking,

(c) the size of the "Central Green,"

(d) the clear identification of the parking spaces on the makai portion of the property,

(e) the width of the internal driveways and pathways,

(f) the location of the dumpsters,

(g) the loading and unloading zones for delivery trucks,

(h) ADA parking stalls,

(i) the location of the eight potential food trucks and their seating or outside service areas,

(j) the location of the proposed new bus stops,

(k) the lost parking stalls in the Foodland parking lot in the two new internal/connection driveway areas,

(l) the two- v. one-story nature of each building,

(m) the location of the wastewater treatment plant,

(n) whether parking will be added over the Foodland leach field, and

(o) the dimensions of the highway modifications (turn lane, relocated shoulders, sidewalk, bus stops, and bus turnouts).

8.15 Page 2-9: The DEIS lists several possible businesses as lessees.

Q: What binds HP to make good on its promises to lease to these kinds of businesses? Is HP willing to enter into covenants and conditions to the SMA that will make these kind of commitments binding?

Q: Do one or both of the owners still own business names for cannabis dispensaries, such as The North Shore Dispensary (registered 2015 by Andrew Yani), The Hot House (registered 2015 by Andrew Yani)?

Q: Will the owners commit to not opening a dispensary at the project site?

8.16 Page 3-32 provides further detail on the potential businesses including Waialua Federal Credit Union.

Q: Are the services of the Waialua Credit Unit open to only credit union members or to all members of the public?

Q: Which kinds of "local community/environmental organizations" does HP have in mind for tenancy and would the fees for the space be charged at commercial rates?

Q: With the full service bar, and the required liquor license, how will excessive drinking by patrons be controlled?

8.17 Page 2-10: The DEIS states a height limit of 40 feet for the two-story building and 25 feet for the one-story building.

Q: What is the legal basis for the height limits indicated and is there is a maximum height limit that applies to the Project?

8.18 Page 2-11, Figure 2-4: The figure indicates approximately 26 mature coconut trees that appear to block the views from the second stories of the buildings.

Q: Is HP committed to the cost, risk, and maintenance of the coconut trees as represented in this Figure?
Comment: If not, then the Figure needs to be redrawn realistically.

8.19 Page 2-12, Figure 2-5: The figure indicates a boy playing soccer and children playing with a dog in the "green" area.

Q: Has HP assessed the safety risk of such activities within close proximity to what could be a three-lane highway with no fencing or other kind of barrier between patrons or activities in this area? What will HP do protect the safety of children and others using this area?

Q: The figure appears to indicate several cars parked in the "Central Green" – is this accurate? If so, how many cars can be parked in this area?

8.20 Page 2-13, Figure 2.6: The figure shows seven small dots as possible food truck locations.

Comment: The potential location of the eight food trucks (the number of which was presented by G70 at the North Shore Neighborhood Board meeting and at page 271) is not well indicated on this drawing, which shows single dots over a single parking stall and, in the earlier Figure 2-5, at most, one yellow food truck. MPW has attached a more realistic sketch of the areas needed by the eight food trucks that could be located in this area. *See* Attachment A.

8.21 Page 2-13: The DEIS states "[t]here will be no access to or from the privately owned Pāhoe Road."

Q: Is HP willing to make this commitment a binding condition or covenant to its SMA permit? If not, why not?

8.22 Page 2-14: The DEIS states that average daily water consumption will be approximately 8,160 gpd. A few paragraphs later, the DEIS states that "[t]he total anticipated net increase in wastewater flow is estimated to be 6,920 gpd."

Q: How can these two different numbers for input and output be reconciled as accurate? Does the wastewater number account for the end result of the service of fountain or bottle drinks to patrons, brought on site by vendors, which could mean hundreds if not thousands of gallons a day of wastewater through use of the restrooms on site?

8.23 Page 2-16, Project Schedule and Costs.

Comment: The project schedule is clearly inaccurate given that the EIS has not been completed in "Winter 2017." Most likely, the EIS will not be completed, if at all, until 2018 or 2019. With the usual schedule overruns that occur for project in Hawai'i, particularly where there is strong community opposition, the entire schedule should be corrected to extend the likely completion date to 2025 or 2030.

8.24 Page 2-16: The DEIS states "Construction costs are estimated at a value of $18 million."

Q: What is the basis of the cost estimate? Who will bear those costs?

8.25 Page 3-16: The DEIS states that the wastewater treatment system will be approved by DOH Waste Water Branch. At Page 3-43, the DEIS indicates that pathogens will be treated.

Q: Will the Waste Water Treatment System (WWTS) use disinfection? If so, what kind?

Comment: UV is the preferred type of disinfection given the potential impact of chlorine on the groundwater and marine environment.

8.26 Page 3-18: The DEIS discusses storm water management and BMPs.

Q: Will HP publicly disclose, in a timely and freely accessible manner, all of the information about plans and implementation of storm water management and BMPs for this Project, in perpetuity?

8.27 Page 3-20, Figure 3-5:

Q: What is the "Parking Court"? What is the location of the LID such as bioswales and drainage areas in relation to the "lawn" and pedestrian accessible areas? Has HP assessed the hazard of having accessible uneven surface and drainage features in these areas?

Q: What is "renaturalized lava" and what is the source of these lava rocks?

8.28 Page 3-42: The DEIS indicates current electrical demand and mentions the food trucks.

Q: Are the food trucks currently connected to electrical utilities on the site? If so, is this permitted under City and State law?

8.29 Page 3-43: The DEIS discussed the on-site WWTS.

Q: What is the top and bottom depth from the normal soil surface of the absorption beds?

8.30 Page 3-43: The DEIS indicates that "up to eight mobile food trucks" will be connected to the WWTS.

Q: Do DOH regulations allow the connection of mobile food trucks to a WWTS?

8.31 The DEIS then states "[t]he trucks will not be connected to, not utilize, the on-site wastewater treatment system."

Comment: If this is correct, then the prior sentence needs to be corrected and clarified.

Q: Will HP commit, as a condition or covenant of its SMA permit, to not connect the mobile food trucks to its WWTS? MPW notes that HP requested that the 2017/SMA-21 allows food truck connection to the existing ATU, which contradicts the promise HP in making in the DEIS now.

8.32 Page 3-45: The DEIS discusses the production of the PV system at 526,000 kilowatt hours annually. Later, at Page 3-56, the DEIS estimates 560,000 kv/yr of PV.

Q: Which number is correct?

Q: Is this an estimate of total capacity or of actual likely production under real conditions at the site? HP may not realize that PV usually does not perform at its rated capacity so this distinction is important to an accurate picture of the actual contribution of the system.

Q: With the PV system, even at its rated capacity, what is the total annual net power demand of the Project?

8.33 Page 3.46: The DEIS describes "large iron woods trees along the highway."

Comment: HP or its tenants, presumably so its customers can have a better view of the ocean, have cut these ironwoods severely in recent years to the point that they look like stumps. Please update this information to be more accurate.

8.34 Page 3-47, Figure 3-8.

Comment: This figure is an outdated photo. It shows a highly vegetated lot, which is not currently the property condition.

8.35 Pages 3-48 and 3-50, Figures 3-9 series.

Q: What are the dates of all of these photos? Some of these photos are very old and do not accurately reflect the condition of the property.

Q: In Figure 3-9A, what is the "fuzzed out" photo-shopped blocking in front of the Seamaids retail shop?

Q: Was Figure 3-9C below the walking path on the beach? It does not appear to have been taken at the level of the Highway or the rock wall where most pedestrians walk.

8.36 Page 3-52: The DEIS references the Master Plan for Pūpūkea Beach Park.

Q: Did anyone from HP participate in the process of development of the Master Plan? Did HP or its consultants study the Master Plan in terms of connected and cumulative impacts to parking, recreation, bathrooms, pathway use and over-use, or other facilities? If not, why not? Is HP willing to contribute to major capital improvements needed as part of the Master Plan?

Q: Where in the DEIS does HP analyze the impacts of the Project on recreational use of the Beach Park?

8.37 Page 3-56: The DEIS references irreversible and irretrievable commitment of resources.

Comment: The DEIS has misconstrued the meaning of the terms "irreversible and irretrievable commitment of resources." The primary commitment that is "irreversible and irretrievable commitment of resources" is the development of the property itself by this Project. Once this property is developed, it will not be undone. Development in Hawai'i only goes one way – toward density and growth of traffic, tourism, and impacts. Thus, the DEIS should acknowledge that the Project itself will forever permanently alter these lots and that represents an "irreversible and irretrievable commitment of resources" for the community.

8.38 Page 3-56: The DEIS refers to adverse environmental effects.

Q: Will HP commit to a transparent and robust monitoring system, in perpetuity, that will provide timely information about the groundwater and surface water run off impacts of this Project? Will HP commit to mitigation measures if effects are indicated at levels above acceptable federal, state, or county limits or beyond that projected in the DEIS?

8.39 Pages 4-3 through 4-71.

Comment: This entire section appears to be a very biased review of the applicable standards and plans. Often checkmarks appear to be almost randomly made, or made without support, and never is a negative effect indicated. This is simply unintelligible and must be revised with clear supporting data, not just assertions.

8.40 Page 1-9: "contemplates only minimal improvements to the Foodland parcel"

Q: Has Foodland approved these improvements? Internal traffic circulation within the Foodland parking lot is very poor and hazardous; how will the project affect that internal traffic pattern and safety risk to shoppers and drivers?

Comment: Page 1-10: The DEIS correctly includes the Foodland parcel as part of the integrated project site. This integrated review is required by HRS Chapter 343 and by the Joint Development Agreement.

8.41 Page 1-9: "Hanapohaku acquired its land in 2014 to retain local ownership of an important commercial property to provide goods and services . . . ."

Q: What restrictions are placed on, or is HP willing to place on, its ability to resell the property at any time to another buyer who might not be "local"?

8.42 Page 1-9: "The owners are committed to pursing Hawai'i-based businesses as tenants of the center." This promise is repeated at Page 3-32.

Q: What restrictions are placed on, or is HP willing to place on, its ability to lease space to "Hawai'i-based" tenants? What is the definition HP is using of "Hawai'i-based businesses"?

8.43 Page 1-9: "The types of businesses and services may include . . . ."

Q: What restrictions are placed on, or is HP willing to place on, its ability to lease only to these kinds of businesses and services? Do one or both of the owners still own business names for cannabis dispensaries, such as The North Shore Dispensary (registered 2015 by Andrew Yani), The Hot House (registered 2015 by Andrew Yani)? Will the owners commit to not opening a dispensary at the project site?

8.44 Page 1-20, Park-Community Center: DEIS references a "park-like space," a "central green landscaped area," "a community gathering place," yet it mentions that the food trucks "can utilize the hardscaped area adjacent to the central green," and that "[v]ehicle access will be restricted from the hardscape during some periods to allow for pedestrian-friendly community gatherings and cultural events such as art shows, farmer's markets and dance performances."

Q: Please provide the dimension of the spaces mentioned, both landscaped "lawn" and the "hardscaped" area that might be closed off for events? What is the distance between these areas and Kamehameha Highway? How will user safety be assured given the proximity to the highway? How will the sound of two or three lanes of traffic be attenuated to allow usage of these areas?

8.45 Page 1-10: DEIS references the FAR as "25 percent of the floor area ratio (FAR) allows for this property under the City Land Use Ordinance."

Q: Does that statement take into account the restricted design elements in the UA? In other words, given the restriction to one- and two-story buildings, is the FAR still 25%?

8.46 Page 1-10: The DEIS mentions "utilize sustainable building materials" but does not indicate that the project will adhere to any particular sustain green building standards such as LEED or equivalent. Q: Please specify the goal and standards for sustainability building design for this project.

8.47 Page 1-11: The project cost is estimated at $17.8 million.

Q: Please provide a breakdown of that cost estimate? Does it include improvements on properties not owned by HP?

8.48 Page 1-11: The GET is estimated at $103,664.

Q: What is the breakdown of the estimated annual revenue on which this number is based?

8.49 Page 1-11: The County property tax is estimated to be $187,500.

Q: What is the underlying assessed value of the three parcels upon which this estimate is based?

9. HP's Proposed Development Will Not Serve the Needs of the North Shore Community

9.1 Page 1-11: The reference to B-2 Neighborhood Business District should provide a **complete** statement of the requirements, which are:

> **B-1 Business - Neighborhood**
> The intent of the B-1 neighborhood business district is to provide relatively small areas that serve the daily retail and other business needs of the surrounding population. It is intended that this district be generally applied to areas within or adjacent to urban residential areas, along local and collector streets, but not along major travel routes or on a large-scale basis. It would also be applied to rural and urban fringe town centers, which may or may not be located along major travel routes. (Taken from Land Use Ordinance, May 1999, Sec. 21-3.110 (b)) (emphasis added).

9.2 Page 1-11: Because in the past HP has selectively quoted the North Shore Sustainable Communities Plan (SCP) in public meetings, including dropping the word "primarily" that is underlined below, the DEIS should quote the entire SCP provisions regarding a Rural Community Commercial Center:

> "Both the rural community commercial center and country stores emphasize convenient and essential services to meet the needs of the surrounding community." (Emphasis added.)
>
> "3.6.3 Rural Community Commercial Center
> The rural community commercial center is a small cluster of commercial and service businesses located on major thoroughfares that provide a range of goods and services to meet the needs of the surrounding residential communities. Located along highways and major thoroughfares, these centers also attract visitors and residents from outside the immediate community. Commercial establishments may include grocery stores, sundries stores, restaurants and other services and shops catering to residents and visitors to the region. They are generally one- and two-story in height and equivalent in size to neighborhood grocery stores. With fewer business establishments and services than a country town, the rural community commercial center typically covers less land area and has less commercial floor area than a country town. The area between the existing Foodland market and the adjacent commercially zoned properties between Pūpūkea Road and Pāhoe Road is designated as a Rural Community Commercial Center."

9.3 Comment: As referenced above, the North Shore Sustainable Communities Plan's definition of Rural Community Commercial Center requires that development of these parcels be "small cluster" and "meet the needs of the surrounding residential communities." The proposed development exceeds the "small cluster" level because – through buildings, parking lots, roadways, and food trucks – it takes up nearly all empty space on the three parcels. The sprawl of this development is not small. The total proposed gross *floor* area is 30,000 (Page 1-10). This number, however, is a substantial under-estimate of the footprint because the DEIS does not provide information about the total footprint of the development from the proposed paved parking lots, paved roadways, drainage systems, and the eight food trucks (with associated tables, chairs, decks, walkways, and spillover equipment areas).

9.4 Comment: HP's DEIS violates the spirit and letter of the NSSCP because it does not cater to "the needs of the surrounding residential communities." Instead, HP proposes a commercial center that is focused on attracting tourists and non-residential customers.

9.5 Comment: As stated above, while HP may claim that they will rent to local businesses with local owners, and cater to local residents, this is an illusory promise. HP is not going to be bound to do any catering to local needs once the development is completed. All of the retail units can, and likely will be, flipped to high-traffic tourism-focused businesses on a dime. HP owners have demonstrated over the past two years a propensity to kapakahi commercial activity with hundreds if not thousands of tourists a day (far outweighing resident customers).

MPW is deeply concerned about the true purpose and nature of HP's proposed Pūpūkea commercial mall development – euphemistically dubbed the "Rural Community Commercial Center" – and how it will become a magnet for major increases in tourism and traffic in our quiet community. This development is not a community center and should not be called a community center any more than Foodland. **Our community already has the Pūpūkea Recreational Center, only .5 miles North along Kamehameha Highway, which has place for meetings, cultural events, and recreational activities, and the park at Sunset Beach Elementary School, which hosts a playground, exercise and parent classes, a gathering pavilion, and local crafts farmers market.** HP's development is, plain and simple, a commercial shopping mall that is likely to turn into a "Sharks Cove Tourist Trap." The very small "green" along the front of the development, particularly when surrounded by parking and food trucks, and within only a few feet of three lanes of busy highway, is not a community center, a place for family recreation, or a culturally grounded gathering plane. Picnic tables and occasional music performances will be for tourists, not locals. This commercial development should, therefore, be recognized and labeled as what it truly will become – the **Sharks Cove Commercial Mall for Tourists** – not what conveniently looks and sounds benign in an DEIS.

Conclusion: The proposed Project will attract more tourism, more traffic, and more pollution to this small sensitive area resulting in major impacts to the Pūpūkea community and environement. The serious flaws in the procedure and content of the DEIS outline in our comments require that the process be started fresh, with a new EISPN, then new DEIS, and full compliance with HRS Chapter 343.

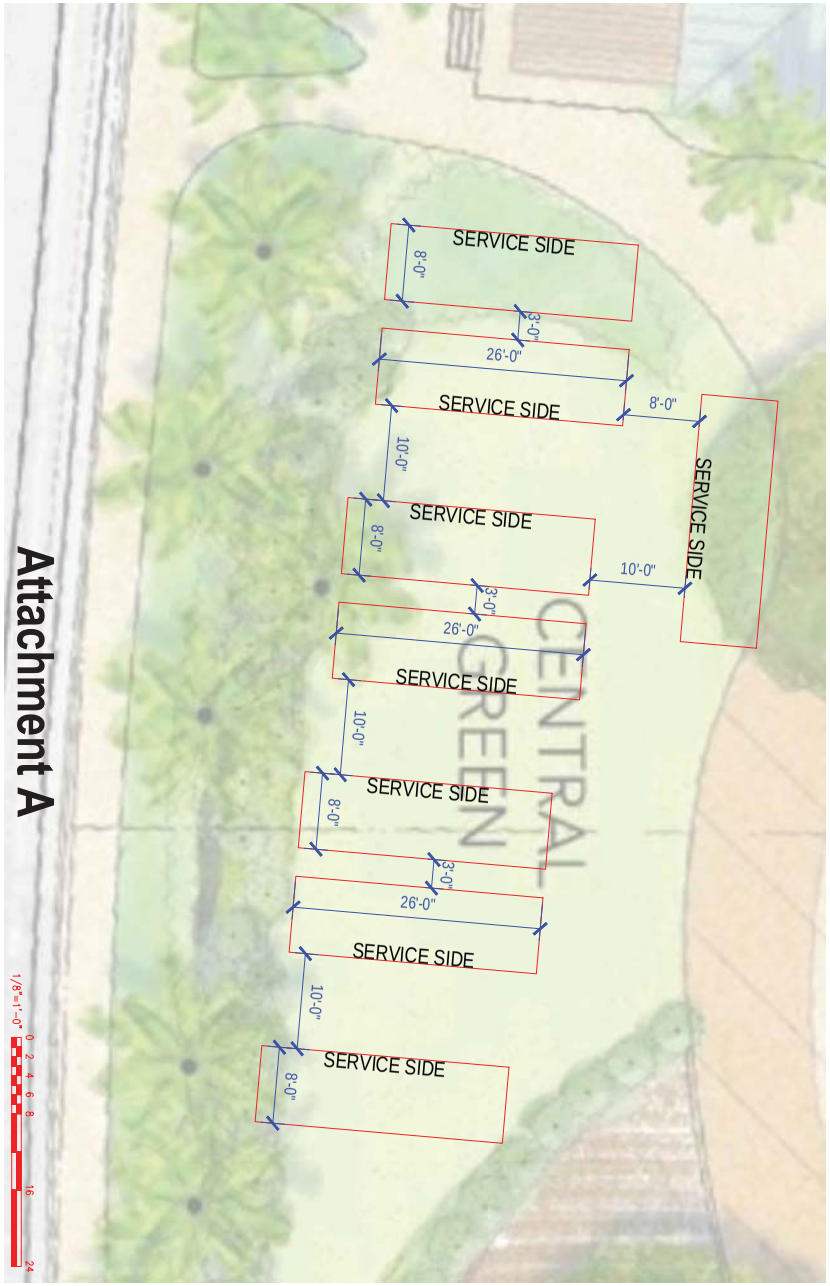
Mahalo for the opportunity to comment on the DEIS.

Sincerely,

Denise Antolini
President

Cc: Maxx E. Phillips

Atttachment A: Rendering of Proposed Project with Eight Food Trucks



Attachment A

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Denise Antolini, President
Mālama Pūpūkea-Waimea
P.O. Box 188
Haleʻiwa, HI 96712

Via email: Denise Antolini (antolinid@gmail.com)
Maxx Elizabeth Phillips (maxxephillips@gmail.com)

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Antolini:

Thank you for your comment letter dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *Since 2005, Mālama Pūpūkea-Waimea (MPW) has worked "to replenish and sustain the natural and cultural resources of the Pūpūkea and Waimea ahupuaʻa for present and future generations through active community stewardship, education, and partnerships."*

Our organization was created thirteen years ago in response to the serious threats to the community and marine ecosystem in these ahupuaʻa that arose from the commercial "mall" development by the Honu Group on the same parcels on which Hanapohaku (HP) is proposing another tourist-focused shopping mall that is the subject of this DEIS and a proposed Special Management Area (SMA) "Major" Permit.

We have since dedicated thousands of hours of volunteer and staff time, and substantial resources, in particular to protecting the State Marine Life Conservation District (MLCD) at Pūpūkea and stewarding Pūpūkea Beach Park. The majority of our Board and staff are long-time residents of Pūpūkea.

The Board, staff, and volunteers have spent virtually every Saturday since 2005 conducting stewardship activities near and directly across the two-lane Kamehameha Highway from the Project site, at the Pūpūkea Beach Park and in the Pūpūkea Marine Life Conservation District conducting outreach and education activities, scientific research, and biological and recreational use monitoring, all of which are core to the mission of the organization.

MPW requests to continue to be a formally consulted party in the EIS process going forward. Please provide all future documents and correspondence to both Denise Antolini (antolinid@gmail.com) and Maxx Elizabeth Phillips (maxxephillips@gmail.com) and mail hard copies to MPW address indicated.

Response: We acknowledge the information provided regarding the formation and activities of Mālama Pūpūkea-Waimea (MPW) and have added you and Maxx Phillips as consulted parties to the EIS process.

Comment: *As explained below, MPW's review of the DEIS indicates numerous serious flaws that require a revision, republishing, and recirculation of an EISPN and DEIS that complies fully with HRS Chapter 343 and not just ROH Chapter 25.*

We provide the following comments on the DEIS:

1. HP's References to the Term "EIS" Are Misleading and Must Be Clarified Consistently Throughout the Document

1.1 A "ROH Chapter 25 EIS" is – and is known by OEQC as – a "Non-Chapter 343" EIS. See OEQC's Environmental Notice Nov. 23, 2017, which explains: "Use of the Special Management Area (SMA) is not a trigger under Chapter 343, but developments in O'ahu's SMA are required to go through an environmental review process that mirrors the procedural requirements of HRS Chapter 343, pursuant to Revised Ordinances of Honolulu, Chapter 25. Developments being reviewed under Chapter 25 but not Chapter 343 appear here." http://oeqc2.doh.hawaii.gov/The_Environmental_Notice/2017-11-23-TEN.pdf

Response: The inside cover page of the EIS states the following: "The environmental document is prepared pursuant to the Revised Ordinances of Honolulu, Chapter 25, Special Management Area, and consistent with Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health, Environmental Impact State Rules." The EIS documents meet the content and procedural requirements of Chapter 343 HRS and Title 11-200 HAR.

Additionally stated on the inside cover is the signed attribution by G70's principal planner in charge of the EIS preparation: "This Draft Environmental Impact Statement and all ancillary documents were prepared under my direction or supervision, and the information submitted, to the best of my knowledge, fully address document content requirements as set forth in §11-200-17 Hawai'i Administrative Rules." The EIS document meets the content and procedural requirements of Chapter 343 HRS and §11-200 HAR.

Comment: *1.2 In order not to confuse the public, as well as agencies, an EIS prepared under ROH Chapter 25 should be clearly labeled as such and not identified simply as an "EIS," which is the same term used for EISs that are prepared pursuant to all requirements (not just the "procedural requirements") of HRS Chapter 343. To omit this clarification in the document is misleading. To avoid misleading the public, add "ROH Ch. 25, Non-Chapter 343" before every mention of "Environmental Impact Statement," "environmental document," or "EIS" in the document.*

Response: The statement on the inside cover clearly indicates that the EIS documents meet the content and procedural requirements of Chapter 343 HRS and §11-200 HAR. No further repetition of this statement is warranted.

Comment: *1.3 At 1.0 Project Summary, page 1-1, the Type of Document says "Environmental Impact Statement." Comment: Add "ROH Ch. 25, Non-Chapter 343" before "Environmental Impact Statement" in this sentence.*

Response: The statement on the inside cover clearly indicates that the EIS documents meet the content and procedural requirements of Chapter 343 HRS and §11-200 HAR. No further repetition of this statement is warranted.

Comment: *1.4 Comment: The Cover page states "This ADD: "ROH Ch. 25, Non-Chapter 343" environmental document is prepared pursuant to Revised Ordinances of Honolulu, Chapter 25, Special Management Area and consistent with ADD: THE PROCEDURAL STEPS OF Hawaii Revised Statutes, Chapter 343 . . . " (Underlined emphasis added.) The bolded words should be added to accurately reflect the language of ROH Ch. 25 and that this is a Non-Chapter 343 EIS.*

Note these provisions of ROH Chapter 25:

(a) ROH Ch. 25-1.3 states that an EIS "means an informational document prepared in compliance with the environmental quality commission's rules and regulations implementing HRS Chapter 343."

(b) ROH Ch. 25-3.3, Procedural Guidelines, provides: "Any proposed development within the special management area requiring a special management area use permit shall be subject to an assessment by the agency in accordance with the procedural steps set forth in HRS Chapter 343." (Emphasis added.)

(c) ROH Ch. 25-4.2 state "In processing an environmental assessment or environmental impact statement, the director shall adhere to the procedures set forth in HRS Chapter 343, and the regulations adopted thereunder by the environmental quality commission." (Emphasis added.)

Comment: *1.5 Comment: Add language to DEIS page 1-9: "Proposed development within the SMA requires a Special Management Area Use Permit, subject to an ADD: "ROH Ch. 25 Non-Chapter 343" assessment by the agency in accordance with the procedural steps set forth in Hawai'i Revised Statutes as amended (HRS) Chapter 343 (Environmental Impact Statements). This document was prepared as required under Revised Ordinances of Honolulu Chapter 25 and in accordance with [ADD: PROCEDURAL STEPS SET FORTH IN] HRS Chapter 343 and the implementing Hawai'i Administrative Rules (HAR), Chapter 11-200 (Environmental Impact Statement Rules)."*

Response: ROH Ch. 25 4.2, as cited above, states ". . . the director shall adhere to the procedures set forth in HRS Chapter 343, and the regulations adopted thereunder by the environmental quality commission." (Emphasis added.) The regulations adopted by the environmental quality commission include the implementing rules: HAR Title 11-200. The rules define all requirements of the environmental disclosure process which include process but also public notice and input, significance criteria, content requirements and more.

Further, ROH Ch. 25 includes the definition of an EIS: "EIS means an informational document prepared in compliance with the environmental quality commission's rules and regulations implementing HRS Chapter 343". (Emphasis added.) Hawai'i Administrative Rules Chapter

11-200, Environmental Impact Statement Rules, are the implementing rules of Chapter 343 HRS. Again, ROH Ch. 25 refers to more than process when identifying the content of the environmental disclosure document required for use in a Special Management Area.

The statement at Chapter 1.2 page 1-9 clearly indicates that the EIS documents meet the content and procedural requirements of Chapter 343 HRS and §11-200 HAR. No further clarification is required.

Comment: *1.6 Please make these corrections: See also Page 4-3: "An ADD: "ROH Ch. 25 Non-Chapter 343" EIS is required for this project since the project lies within the Special Management Area (SMA) as defined by the City and County of Honolulu; see Section 4.2.6. This EIS has been prepared ADD: "pursuant to ROH Chapter 25" in compliance with ADD: THE PROCEDURAL [STRIKE: environment] requirements outlined in HRS Chapter 343 and the implementing Hawai'i Administrative Rules (HAR) Chapter 11-200." Further, page 4-3 states: "Revised Ordinances of Honolulu (ROH), Section 25.3.3(c)(1) states that any proposed development within the special management area which requires a special management area use permit be subject to an ADD: "ROH Ch. 25 Non-Chapter 343" assessment in accordance with the procedural steps set forth in HRS Chapter 343." (Bold added)*

Response: The statement at Chapter 4.2.1 page 4-3 clearly indicates that the EIS documents meet the content and procedural requirements of Chapter 343 HRS and §11-200 HAR. No further clarification is required.

Comment: *1.7 Please explain HP's position regarding whether an ROH Ch. 25 EIS provides for (a) the fulfillment of all of the substantive (not just procedural) requirements of HRS Chapter 343, and (b) full judicial review including of defects in the environmental review process, as provided by HRS § 343-7.*

Response: The subject EIS documents meet the substantive requirements of Chapter 343 HRS and §11-200 HAR. The Final EIS acceptance is pending, therefore, we have no position regarding the potential applicability of provisions within HRS Ch 343-7 *Limitation of actions.*

Comment: *2. HP's DEIS Is Legally Defective and Need To Be Prepared and Republished Pursuant to HRS Chapter 343*

2.1 As indicated above, HP's DEIS was prepared as a "ROH Ch. 23 [sic], Non-Chapter 343" DEIS. This is a legal error that requires revision, republication, and compliance with all provisions of HRS Chapter 343. HRS Chapter 343 is triggered by this project because it project involves the use of state lands or funds, and possibly county lands or funds.

2.2 HP's decision to not prepare this EIS under Chapter 343 violates the spirit and purpose of this important state law. As stated by the Legislature, the purpose of HRS Chapter 343 is:

§343-1 Findings and purpose. The legislature finds that the quality of humanity's environment is critical to humanity's well being, that humanity's activities have broad and profound effects upon the interrelations of all components of the environment, and that an environmental review process will integrate the review of environmental concerns with existing planning processes of the State and counties and alert decision makers to significant environmental effects which may

result from the implementation of certain actions. The legislature further finds that the process of reviewing environmental effects is desirable because environmental consciousness is enhanced, cooperation and coordination are encouraged, and public participation during the review process benefits all parties involved and society as a whole. It is the purpose of this chapter to establish a system of environmental review which will ensure that environmental concerns are given appropriate consideration in decision making along with economic and technical considerations. [L 1979, c 197, §1(1); am L 1983, c 140, §4]

HRS Chapter 343-5 states that the statute is triggered as follows: "§343-5 Applicability and requirements.

(a) Except as otherwise provided, an environmental assessment shall be required for actions that: (1) Propose the use of state or county lands or the use of state or county funds, ... "

The statute, rules, and case law are clear that the non-de minimus use of state lands or funds is a well-established trigger for the application of Chapter 343. See Antolini, The Moon Court's Environmental Review Jurisprudence: Throwing Open the Courthouse Doors to Beneficial Public Participation, 33 UH L. Rev. 581 (2011).

The use of the state highway by the HP project is also not an ancillary/secondary use connected to a primary action that is subject to a non-discretionary permit (because the SMA is a discretionary permit), and therefore the 2012 exception created by HRS § 343-5.5 does not apply to HP's project (see § 343-5.5 Exception to applicability of chapter. (a) Notwithstanding any other law to the contrary, for any primary action that requires a permit or approval that is not subject to a discretionary consent and that involves a secondary action that is ancillary and limited to the installation, improvement, renovation, construction, or development of infrastructure within an existing public right-of-way or highway, that secondary action shall be exempt from this chapter; . . .).

2.3 The DEIS is clear that HP proposes substantial, numerous modifications to Kamehameha Highway as an integral part of its project, particularly as part of the mitigation plan. All of these changes involve the obvious use of the state highway and probably significant state highway funds. None of these changes can be accomplished without State DOT cooperation, planning, design, funding, and implementation.

See references at: 1.4.3 Proposed Mitigation Measures, page 1-12: "Improvements to Kamehameha Highway are proposed as part of this project. These include reducing the total number of access points into the rural center by consolidating the ingress/egress to the site to one point off Kamehameha Highway and to allow no access via Pāhoe Road. A center two-way left-turn lane will be created on Kamehameha Highway to provide a refuge area for traffic turning left into and out of the rural center. A curb and sidewalk will be installed along the property's makai edge to narrow the existing shoulder width on Kamehameha Highway and eliminating space for illegal parking along the highway fronting the parcels." (Emphases added.)

See also Table 1-1 Required Reviews and Permits (page 1-15), Highways Review, which states: "driveway consolidation; restriping; crosswalk" by Hawai'i State Department of Transportation. See page 4-32, stating "highway use and access permit."

See also Figure 2-3 Conceptual Site Plan: "Shared Center Turn Lane" for Kamehameha Highway showing realignment of the mauka and makai lanes to accommodate a center lane, including some alteration of the Southbound bus turnout, as well as substantial new encroachment into the grassy strip bordering the makai side of the Highway and the mauka side of Pūpūkea Beach Park, a new or realigned mauka shoulder lane, and a cross walk (without indication of the landing/ADA pad on either side of the road).

See also Page 2-13: "The shoulder of Kamehameha Highway will be narrowed by installation of a curb and sidewalk along the property edge, thus eliminating parking along the highway fronting the parcels. Access for pedestrians and cyclists will be incorporated."

See also Page 3-37: "Two additional changes are proposed to improve traffic flow along Kamehameha Highway in the access area: closure of the existing Foodland driveways on Kamehameha Highway to reduce the total number of access points; and creation of a center two-way left-turn lane to provide a refuge area for traffic turning left into and out of the rural center." Further, at Page 3-37, "A curb and sidewalk will be installed along the project's makai edge and will narrow the existing shoulder width on Kamehameha Highway and eliminat[e] space for illegal parking along the highway fronting the parcels." And, page 3-37, "The northbound bus stop adjacent to the site will need to be relocated with construction of the proposed consolidated site driveway."

Response: The subject EIS presents improvements to the project site and anticipated minor improvements to be completed by the applicant within the State right-of-way along Kamehameha Highway and City/County right-of-way along Pūpūkea Road. These represent minor upgrades to public facilities discussed with State and City transportation agencies as likely to be assigned to the landowner for operation of the future rural center. These requirements will include installation of a curb with an adjacent vegetated strip to deter pedestrians from crossing from the pedestrian path into the highway except at marked locations. Asphalt pavement will be added on the mauka side to connect the road to the curb and create a gutter for improved drainage along the highway with tie-in to an existing Hawai'i Department of Transportation Highways Division (HDOT) storm drain. Restriping on the highway will provide a shared turning lane. The City has also requested the addition of a sidewalk along the Foodland Pūpūkea frontage with Pūpūkea Road.

According to the HDOT, parking along the shoulder of the State highway is not allowed as a matter of policy. However, this policy may not be enforced at this rural location. Regardless of whether the State will allow continued parking on the makai side, the highway restriping and the addition of asphalt pavement (mauka side) will not eliminate the shoulder where cars currently park on the makai side. Specific design plans for these improvements on-site and off-site are pending engineering design and review by the government transportation agencies.

The subject EIS documents meet the substantive requirements of Chapter 343 HRS and §11-200 HAR.

Comment: *2.3.1 Q: What are the dimensions and locations of the proposed refuge lane, narrowing and widening of the edges of the highway, the curb, and the sidewalk?*

Response: Standard dimensions are anticipated to be required at this location, including: 10-foot wide shared turn lane, 2 feet of shoulder paved width, 1.5-foot wide curb/gutter and a 6-foot wide pedestrian path. Due to some slight variations along this uneven frontage and to keep the curb parallel to the existing highway, the curb and adjacent deterrent landscaping will be located in the State right-of-way.

Comment: *2.3.2 Q: How will parking be eliminated on the mauka side of the highway if vehicles nonetheless seek to park illegally (as they have in the past)? Does HP take the position that parking on the makai side of the highway is legal or illegal?*

Response: Hanapohaku has no authority over parking along the State facility. No parking signs are currently posted and enforced along the mauka side of the highway. Creation of a curb on the mauka side will define a narrow shoulder width; currently, the road, shoulder, and project site are all at the same grade with no barrier to parking.

As noted in the previous response, according to HDOT, parking along the shoulder of the State highway is not allowed as a matter of policy.

Comment: *2.3.3 Q: What is the State's right of way on HP's property along this border and what are the conditions/restrictions on development in or modifications to the State's right of way?*

Response: There is no easement or other right of way in favor of the State on HP's property. Improvements in the frontage area (pedestrian path, curb and gutter) will be designed to State and City standards.

Comment: *Page 2-13: "The project will involve restriping of Kamehameha Highway to create a left-turn storage lane and shelter lane at the entrance. The restriped center lane will extend from Pūpūkea Road to Pāhoe Road. [A] The right-of-way for Kamehameha Highway has adequate width to accommodate the restriping, . . . [B] with any need for additional paving width provided from the mauka side along the project frontage."*

2.3.4 Q: Please provide detailed information to support assertion [A].

2.3.5 Caveat [B] contradicts the first statement [A] – please reconcile these statements and clarify who owns the land on which the "additional paving" is projected?

2.3.6 Q: Both [A] and [B] contradict Figure 2-3 Conceptual Site Plan indicating that additional width will be taken from the makai side of the Highway, alongside or from Pūpūkea Beach Park. What is the correct information? Who owns the land on the makai side of the Highway? And what are the dimensions of all of the modifications indicated?

Response: The City owns land on the makai side of the State Highway, and there will be no effect on the City property. To clarify, the restriping will occur entirely within the State Highway. Additional paving of the highway width will occur, as needed, along the mauka side fronting the Hanapohaku property to create a curb and gutter requested by HDOT in early consultation discussions. This will create a uniform roadside treatment on the mauka side of the highway along the entire rural community commercial center area, and improve highway drainage.

On the makai side of the highway, the stripe will be moved closer to the edge of the existing pavement, leaving the pavement edge and grass shoulder as currently exists. The final design details will be reviewed and approved by the appropriate agencies. The EIS process serves to disclose the probable impacts of the action. Please see *Section 3.13.2* of the Final EIS for further information on probable impacts of restriping, curbs, drainage and the central turning lane.

Comment: *2.3.7 Page 2-14: "a new crosswalk is proposed at Kamehameha Highway at the northern end of the property, near the corner of Pāhoe Road."*

Q: What are the legal and spatial requirements, including ADA access and skirts/ramps, for crosswalks across Hawai'i State Highways? Has the physical, legal, and practical feasibility of the cross walk been analyzed? When was the last time DOT approved a sidewalk across Kamehameha Highway on the North Shore at signalized or un-signalized portion of the highway?

Response: The creation of a new crosswalk near the corner with Pāhoe Road comes directly from a well-received suggestion offered by a community member at the May 2017 meeting of the Sunset Beach Community Association. The project team agreed to consider a crosswalk at the location and included the concept during a scoping meeting with the HDOT. Since presenting the concept in the Draft EIS, other members of the community expressed concerns about the crosswalk. The project team continues to refine the crosswalk safety concepts and will consult with HDOT to determine the suitability of a crosswalk at the Pāhoe Road location. The striping of a crosswalk at this location will be similar to the other crosswalks of Kamehameha Highway found in many rural areas of Oahu. One such example is the crosswalk striping at the intersection of Pūpūkea Road and Kamehameha Highway.

There is adequate space to accommodate the new crosswalk. Specific design plans for these improvements on-site and off-site would require sign-off on engineering design and review by the government transportation agencies.

Comment: *2.3.8 Q: Has HP engaged in discussions with DOT about any of the proposed highway modifications and crosswalk? If so, please indicate the date and results of those meetings regarding likely approvals, funding sources, and time frame, as well as the names of the participants.*

Response: The subject off-site requirements associated with the highway in relation to the project have been discussed during 2016 and 2017 with key staff at the State DOT Highways Statewide Transportation Planning. The need to make minor upgrades to the State facility will be paid for by the owners. Comment letters from DOTH are included in the Final EIS.

Comment: *2.3.9 Page 2-16: Project Schedule and Costs. The DEIS states: "Off-site costs and contingencies are also included in the overall construction cost estimate" of $18 million.*

Q: Does the cost estimate include the cost of the State highway improvements, including the engineering and design fees? If not, and if so, what are those costs? What is the basis of the cost estimate? Who will bear those costs?

Response: The costs for minor upgrades to the State facility are included in the overall project cost estimate, including engineering and design. The minor upgrades to the State facility will be paid for by the owners.

Comment: *2.3.10. Page 3-42: "The drainage system along Kamehameha Highway is owned and maintained by the State of Hawai'i Department of Transportation, Highways Division." What it the exact nature of this connection to the state drainage, and the use of state lands and funds?*

Response: There will be a connection made from the project site drainage system to the State drainage system, as shown in the Final EIS *Chapter 3.16.1* and *Appendix H Preliminary Engineering Report*. Refer to Figure 9 in *Appendix H*, which indicates the route for the 15-inch diameter drainage line and connection to a new catch basin.

Comment: *2.4 Conclusion: Together and even separately, these modifications constitute substantial changes to state land, specifically Kamehameha Highway along this very busy section of the arterial road segment in Pūpūkea, and constitute a trigger for HRS Chapter 343, requiring that the DEIS re-start anew with proper procedural and substantive safeguards for public participation.*

Response: The Draft EIS was prepared after early consultation with relevant agencies and community groups that included MPW, and subsequent publication of an EIS Preparation Notice was followed by a 30-day public comment period. The proper procedural requirements for an environmental disclosure document following HRS 343 related to public participation have been met. The DEIS has fully addressed the future conditions associated with the minor upgrades to public facilities likely to be assigned to the landowner in the State and County right of way for operation of the future rural center. The documentation and analysis presented in the Final EIS is fully consistent with the content requirements pursuant to Chapter 343 HRS.

Comment: *3. The Unilateral Agreement That Requires Highway Improvements Is Triggered by this Project*

3.1 HP is well aware of the Unilateral Agreement (UA) that governs further development on the site and triggers highway improvements. However, the DEIS erroneously claims that the UA does not apply to this major development. The UA is another legal basis for requiring a proper Chapter 343 EIS. The references to the UA need to be corrected in the DEIS.

Page 3-30: The DEIS makes numerous contradictory statements about improvements that affect the Pāhoe Road intersection: (a) the DEIS states that conditions to a 1978 zone change were incorporated into a Unilateral Agreement (UA), including "installation of improvements on Pāhoe Road and the intersection of Pāhoe Road and Kamehameha Highway; (b) at Page 3-31, the DEIS states "the Unilateral Agreement highway improvements at Pāhoe Road does not apply to the property use."; (c) at Page 2-13, the DEIS acknowledges that the project involves adding a center lane from Pūpūkea Road to Pāhoe Road, and, (d) at Page 2-14, "a new crosswalk is proposed at Kamehameha Highway at the northern end of the property, near the corner of Pāhoe Road."

3.2 Q: Given that the DEIS contemplates highway improvements that impact the intersection at Pāhoe Road and also the installation of a crosswalk at Pāhoe Road and Kamehameha Highway, why does the DEIS say that the UA is not relevant?

3.3 Conclusion: The UA is an additional trigger for Chapter 343 compliance.

Response: MPW and the Pāhoe Road homeowners' have specifically requested that the rural center not provide project access from this Pāhoe Road. Hanapohaku is honoring this request. As explained in EIS *Section 3.13.2*, access to the Project will be through a combined driveway from Kamehameha Highway located approximately 210 feet north of Pūpūkea Road. The UA condition contemplated vehicular access to the Project via Pāhoe Road. However, due to the commitment by Hanapohaku to honor the requests of Pāhoe Road residents, and lack of access easement rights in favor of the entire Project site, the Project will not have vehicular ingress or egress from Pāhoe Road. For this reason, the need for UA Condition 2 has been eliminated.

Comment: *4. HP's DEIS Fails to Adequately Address Impacts to the Pūpūkea Marine Life Conservation District*

4.1 Page 2-5: Environmental Sensitivity: The DEIS states that the proposed Project is in "close proximity to the Pūpūkea Marine Life Conservation District (MLCD)."

Comment: Please provide details about the proximity and acknowledge that the Pūpūkea MLCD is only one of three MLCDs on O'ahu, one of eleven across the entire State of Hawai'i, and represents the highest level of state protection for marine waters.

4.2 Page 3-21: Comment: Although HP claims to "provide a comprehensive and accurate depiction of the marine conditions down-gradient of the project site at Pūpūkea Beach Park/Sharks Cove," the marine survey is insufficient, inadequate, and misleading.

Page 3-26: Comment: The DEIS inaccurately claims the Pūpūkea MLCD shoreline "is essentially devoid of benthic biota." The marine survey inaccurately characterizes the nearshore zones as "essentially barren." Appendix C Page 16. There are a myriad of reports, surveys, peer-reviewed publications, and observational data that demonstrate the biological diversity and marine species abundance at Sharks Cove and the Pūpūkea MLCD. There is evidence that the Tide pools at Sharks Cove is an important sheltered habitat for larval, juvenile, and recruit stage fishes that are found in nearshore and reef habitats. The Pūpūkea MLCD is biologically rich and home to many species of fish, invertebrate, benthic alga growth (limu), marine mammals, and turtles.

Additionally, there is a plethora of easily visible biota throughout the Pūpūkea MLCD. The failure of the marine survey to observe and acknowledge the rich biota of the MLCD is particularly troubling in light of the emerging scientific consensus about the importance of biological reserves in Hawai'i such as the Pūpūkea MLCD.

See also Page 3-24: In the "inner region, extending from the inner shoreline of Sharks Cove to a distance of approximately 165 feet (50 m) offshore . . . attached and unattached organisms are rare."

Q: What scientific observations form the basis for this assertion that organisms are "rare"? What was the list of organisms sought be observed and actually observed? What was the methodology used? What time(s) of day or night were the surveys conducted and what were the moon, tide, and weather conditions on those dates/times?

Response: The marine investigations were conducted following standard protocols for benthic habitat investigation. There are a wide range of habitat conditions which are largely dominated by the high energy regime generated from the North Pacific winter storms. The coral community structure of the area has low diversity and coral cover owing to the harsh physical characteristics of the open coastal area of the North Shore. The various coral species, other invertebrates, fish species and marine animals identified in the transect surveys are presented in *Appendix C*, including a detailed series of more than 30 photographs depicting typical conditions.

For the biological survey held May 30, 2017, the conditions included a waxing crescent moon phase. There was a high tide 7:42 AM (0.5 ft) and low tide 11:08 AM (0.2 ft). The weather was clear and sunny with trade winds 10 to 15 mph. The ocean swell conditions were small 0 to 1 ft.

Comment: *See also Page 3-25: "No extensive benthic alga growth or seagrass were observed in any of the survey areas."*

Q: What scientific observations form the basis for this assertion that extensive algae was not observed? What was the list of limu sought be observed and actually observed? What was the methodology used? What time(s) of day or night were the surveys conducted and what were the moon, tide, and weather conditions on those dates/times?

Response: The marine biota investigation findings and analysis are reported in *Appendix C* of the EIS and included observations on the presence of benthic algae growth. Field survey dates and conditions are noted in the previous response

Comment: *Q: Why were no previously published studies of the Pūpūkea MLCD reviewed or included in the marine survey? Why did the marine survey focus almost exclusively on coral and ignore the majority of other fish species, limu, and macroinvertebrates present in all transects? Why were diurnal and nocturnal invertebrate populations not considered? Why were climate change, ocean acidification, and other "stressors" not analyzed?*

Response: The marine biota investigation findings and analysis are reported in EIS *Appendix* C. The findings published by Dr. Dollar are very similar to the reported information published by Coral Reef Assessment and Monitoring Program conducted by researchers Dr. Paul Jokiel and colleagues at the Hawaii Institute of Marine Biology. http://cramp.wcc.hawaii.edu/LT_Montoring_files/lt_study_sites_Oahu_Pūpūkea.htm

The conclusions of the assessment indicate that based on the limited material inputs to the nearshore ocean from the project, the inputs would not be of a detectable magnitude. Thus, if there are no changes to water chemistry, there will be no changes to the marine biotic communities.

Comment: *Page 3-10: The DEIS states that "[n]o federal Critical Habitat exists for any species on or adjacent to the project area."*

Comment: This statement is technically true but very misleading. Federal Critical Habitat does now exist for the Hawaiian Monk Seal in the area directly across the highway from the Project, throughout the Pūpūkea MLCD. Designated in 2015, the critical habitat was designated in this area because of the frequency of Monk Seals along this coastline. MPW has often observed Monk Seals in Sharks Cove and in the Tidepools, both swimming and basking. MPW collaborates with NOAA to ensure the safety of the Monk Seals. The additional visitors drawn to the Pūpūkea Beach Park and MLCD by the Project is likely to increase the harassment of and impacts on Hawaiian Monk Seals and adversely impact their critical habitat. This needs to be analyzed in the revised DEIS.

Response: The EIS is correct and in no way misleading. Federal Critical Habitat for the Hawaiian Monk Seal along the coast in this region extends 5 meters (approximately 15 feet) inland, which does not reach the highway or the project site. As noted in the analysis of marine impacts related to the project, the small change in nutrients are likely within the natural variability of groundwater discharge at the shoreline, and do not represent a significant change (*Section 3.7.2*). The marine habitat will not be impacted by the project.

We disagree with the characterization that "the Project will draw additional visitors to the beach park and the MLCD" which insinuates destination shopping. As stated in the EIS Proposed Action (*Section 2.*4), the rural center will expand the services and goods available to residents of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors.

Comment: *Appendix C Page 12: "The purpose of this baseline survey is to provide the information to make valid evaluations of the potential for impact to the marine environments from the proposed Pūpūkea Rural Community Commercial Center Project . . . Based on these data, it is possible to address any concerns that might be raised in the planning process."*

Comment: The marine survey relied upon by the DEIS is insufficient as it does not provide a comprehensive and accurate depiction of the marine habitat, community structure, or diversity. As the data provided is incomplete and misleading there is no way to adequately analyze or address the development's impact to the marine environment. The marine consultant does not appear to be impartial, capable, or inclined to conduct an accurate and credible survey of the potential impacts of this project or alternatives on the MLCD.

Field observations by MPW, as indicated by the photos below, confirm that the MLCD has diverse and abundant biota. Please note that all images below were taken within "Transect One" and "Transect Two" and demonstrate only a small amount of the rich biological diversity found at Sharks Cove: [See photos in MPW original comment letter.]

Conclusion: The marine survey did not provide a comprehensive and accurate depiction of the marine habitat at the Pūpūkea MLCD and is therefore defective and must be redone by credible marine consultant.

Response: The conclusions of the assessment indicate that the limited material inputs to the nearshore ocean from the project would not be of a detectable magnitude. Thus, if there are no changes to water chemistry, there will be no changes to the marine biotic communities.

The findings published by Dr. Dollar are very similar to the reported information published by Coral Reef Assessment and Monitoring Program conducted by researchers Dr. Paul Jokiel and colleagues at the Hawaii Institute of Marine Biology. http://cramp.wcc.hawaii.edu/LT_Montoring_files/lt_study_sites_Oahu_Pūpūkea.htm The findings by Dr. Dollar match the information presented relative to the Pūpūkea MLCD in the 2006 study by NOAA. Friedlander, Alan M. and Brown, Eric and Monaco, Mark E. and Clarke, Athline (2006) *Fish Habitat Utilization Patterns and Evaluation of the Efficacy of Marine Protected Areas in Hawaii: Integration of NOAA Digital Benthic Habitat Mapping and Coral Reef Ecological Studies.* Silver Spring, MD, NOAA/NOS/National Centers for Coastal Ocean Science/Center for Coastal Monitoring and Assessment (NOAA Technical Memorandum NOS NCCOS, 23) http://aquaticcommons.org/2118/

The findings by Dr. Dollar also match the generalized biota information published on the Mālama Pūpūkea Waimea website: http://Pūpūkeawaimea.org/Pūpūkea-waimea-mcld/biologically-special/

Comment: *4.3 Page 3-13: The DEIS states that groundwater conditions at the site indicate a "strong tidal response at both well sites, with amplitudes on the order of one third to one half of the ocean's tidal amplitude." The DEIS also indicates that a "very sharp salinity increase at B-7 at 52 feet" and that "ocean saltwater underlies the site at depth." At Page 3-14, the DEIS states "The shallow ground-water eventually discharges into the nearshore waters."*

Comment: The Nance survey indicates that essentially an underwater river flows under the property from mauka to makai at the 50-52' depth. This makes sense as the property sits at the mauka end of Hakuola Gulch, which drains a watershed in Pūpūkea.

This means that pollutants that enter this zone at the Project property became a "freshwater freeway of pollutants" that connects directly to the Tidepools and the MLCD. This accords with the field observations of MPW and anyone familiar with the nearshore area, which displays high levels of freshwater input, often creating visible sheens of floating freshwater that stretch for hundreds of feet into the ocean. Indeed, a cultural story relayed in the Cultural Impact Assessment about Kalua Maua tells the story of freshwater being gathered by Native Hawaiians in gourds at Kalua Maua (also known as "Three Tables"). Swimmers often experience the sensation of cool freshwater inlets and this freshwater interface apparently has a strong biological connection to the marine life in this area.

Q: Why was the mauka to makai connection of the underground freshwater flows in the ahupua'a of Pūpūkea, especially in Hakuola, not properly referenced or analyzed in the DEIS?

Response: The "Nance survey" (EIS Appendix B, *Assessment of Potential Impacts on Water Resources of the Proposed Pupukea Rural Community Commercial Center* by TNWRE) describes the groundwater occurrence beneath the property as a basal lens in hydraulic contact with saline groundwater at depth and the ocean at the shoreline. The characterization of its occurrence as an underground river is incorrect and misleading. The presence and flow of

groundwater beneath the project site was properly evaluated based on the findings from existing groundwater wells and newly established monitoring wells.

Comment: *Page 3-16: The DEIS states "There are no streams or wetlands on the site itself or adjacent areas."*

Comment: As stated above, the Nance study shows that an underground river does flow through the property at about the 50-52' level. Just because the stream is not visible on the surface does not mean it does not exist hydrologically.

Response: Groundwater conditions beneath the project site, including their relationship to directly upgradient human activities and natural inputs, are adequately addressed in the TNWRE groundwater analysis. The TNWRE report clearly identifies the groundwater as occurring in a thin basal lens in hydraulic contact with saline groundwater at depth and the ocean at the shoreline. The groundwater moves through interconnected pore spaces beneath the entire property.

Comment: *4.4 Page 5-4: The DEIS notes that "There would be no new effects to groundwater resources at the property with the existing commercial operations."*

Comment: This statement contradicts several other statements in the DEIS that existing operations are affecting groundwater discharge, which leads to the MLCD. For example, the groundwater analysis (DEIS, Appendix B) notes that "there is a strong tidal response at both well sites," Page 12; "Permeability of the volcanics in which the groundwater resides is very high," Page 12; "The somewhat higher nitrogen levels in the downgradient B-7 monitor well in comparison to the B-1 monitor well may reflect the input by the present activities on the site." Page 19 (emphasis added); "[c]learly, results for the shoreline samples at Transects 1 and 2, as well as in the B-7 monitor well, show an addition of nitrogen in the movement of groundwater across the project site to the shoreline." Page 19 (emphasis added).

Response: The increase in nitrogen levels in groundwater from the B-1 well to the B-7 well does indicate that present onsite activities are adding nutrients to the groundwater, which is a normal result to expect. The TNWRE report provides a conservative analysis which calculates the potential project inputs to groundwater quality at the property, and the potential effects of the groundwater release in the nearshore ocean environment. The study indicates that the project input of nutrients will have a negligible effect on groundwater quality. Utilizing this information, the MRCI report found no potential for adverse effects to near shore ocean water quality.

Comment: *4.5 Page 5-4: The DEIS states that "Storm water management controls on the property would minimize the release of suspended sediment and urban runoff contaminants. Runoff reaching the ocean would be comparable quality as with existing conditions." (Emphasis added.)*

Q: What does "would" mean? Does it mean that controls are not yet in place? What is the connection between these "controls" and the conditions that are required to be met under 2017/SMA-21?

Comment: This statement contradicts the DEIS Appendix B, Page 27, which states that the proposed drainage system will "substantially reduce the suspended and bedload sediment that currently is carried into the marine environment by surface runoff" and that this represents "a significant environmental benefit in comparison to the present use of the property." (Emphasis added.) Further, this statement in the DEIS constitutes an admission that the current conditions on the property are leading to "substantial" pollution of the marine environment.

Q: What will HP do to correct the present conditions on the property to eliminate the polluted discharges from its property?

Response: The comment references page 5-4, which is the discussion of alternatives (Chapter 5) and uses "would" to express future possible alternative outcomes. Existing conditions for surface water and drainage are described in EIS *Section 3.6.1* which has been corrected to state: "Swales constructed of stone and gravel ~~have been~~ are being installed in key areas to intercept and slow sheet flow, and to direct storm water to rain gardens and prompt infiltration to soils. Storm water not captured travels offsite to the nearest drain inlet south of the project along Kamehameha Highway." These changes reflect the 2017/SMA-21 Minor Permit condition representing best management practices and storm water runoff controls to manage the runoff conditions and minimize the release of suspended sediment. There are no polluted discharges from the property.

With the rural center project in place, the TNWRE report provides a projection of the potential project inputs of suspended sediment and urban runoff contaminants to groundwater quality at the property. The EIS analyses in Section 3.6.2 and Section 3.16.2 state: The installation of LID BMPs, including subsurface storm water detention on the three parcels will substantially reduce the suspended and bedload sediment (emphasis added) that is currently carried into the marine environments by surface runoff. The detention storage will also reduce both the volume and flow rate of storm water from the parcels. For more frequent, small storm events with rainfall amounts of up to four inches, all of the runoff would be retained in the detention storage system and eventually percolate back to groundwater. With this improvement in surface runoff water quality, the MRCI report found no potential for adverse effects to near shore ocean water quality due to suspended sediment and urban runoff contaminants.

Comment: *The runoff referred to above runs directly into the sandy/rocky areas of Pūpūkea Beach Park and the waters of the Marine Life Conservation District. "The field inlet [Shoreline Discharge Site 1] picks up most of the runoff from the Foodland parking lot and essentially all of the runoff which sheet flows off the three contiguous Hanapohaku parcels into the Kamehameha Highway gutter and moves south to the grated inlet." Appendix B, Page 25.*

4.6 Page 5-4: The DEIS further states that "[t]he minor contribution of nutrients in the shallow groundwater from wastewater disposal will not adversely affect the nearshore water quality," and "[t]he marine environment would not be adversely affect by the no-action alternative."

Comment: MPW disagrees with these statements about the existing conditions and their impact on groundwater and the marine environment.

Q: What does "would" mean? Does it mean that controls are not yet in place? What are the sources of nutrient contamination on the property under existing conditions? What are the

current and proposed "controls" on these discharges? What is the connection between these "controls" and the conditions that are required to be met under 2017/SMA-21?

Response: Again, the comment references the succinct concluding statement from Chapter 3 made in the alternatives discussion (Chapter 5), which uses "would" to express future possible alternative outcomes. The focus of the EIS is to address the existing conditions of groundwater and surface water at the property, and future conditions under the proposed action.

The storm water management and best management practices to be applied to the rural center are described in EIS *Sections 2.4.1*, *3.6* and *Appendix H*. Many of the planned measures are consistent with the requirements of future permits, including Grading Permit and NPDES Permit. The effectiveness of the future on-site storm water management controls will reduce future suspended sediment and urban runoff constituents.

Comment: *4.7 Page 3-16: The DEIS indicates that the Project will increase nitrogen by 4% and phosphorus by 7% to the shoreline makai of the Project.*

Q: Has HP or its consultants conducted any studies of the actual impact of this nutrient loading of additional nitrogen and phosphorus on the marine environment? What is the impact on the type of limu eaten the Hawaii Sea Turtle that forages in the MLCD? What is the impact on the benthic organisms and the fish in the tidepools and the Sharks Cove area?

Response: The EIS technical studies by TNWRE and MRCI are expert analytical investigations by prominent scientists and engineers with over four decades of experience with assessments of potential nutrient loading to groundwater and the marine environment, including numerous peer-reviewed and published studies. The TNWRE report provides a conservative analysis for the Pūpūkea location that calculates the potential project inputs to groundwater quality at the property, and the potential effects of the groundwater release in the nearshore ocean environment. The study indicates that the project input of nutrients will have a negligible effect on groundwater quality.

Utilizing this information, the MRCI report found no potential for adverse effects to near shore ocean water quality. To be clear about the predicted nutrient concentrations in near shore waters, the nutrient inputs cited would not result in elevated nutrient concentrations in the nearshore waters. This conclusion is based on the vigorous mixing environment occurring year-round in this coastal setting. With no potential adverse effect to the resulting nutrient concentrations in the near shore environment, there will be no effect to limu growth, sea turtle foraging, benthic community and the fish community.

Comment: *4.8 Appendix B Page 30: Described the conservative estimated reduction in Nitrogen of 50% and Phosphorus by 25%, this differs greatly from the estimates in the DEIS.*

Q: Please clarify the discrepancy.

Response: The question cites only the first reduction of nutrients that will occur within the aerobic treatment unit (ATU) proposed as part of the wastewater treatment system. The information cited in the EIS (Groundwater *Section 3.5.2*) is the same as provided in cited

paragraph from Appendix B page 30: "...resulting in residual concentrations of 30 and 9.0 mg/l respectively in the treated wastewater. This is a conservative assumption as the actual removal rates are likely to be greater." The following point states: "Further nutrient removal will occur during the disposal in the absorption beds, downward percolation through the vadose zone… These removal rates are conservatively approximated to be 80 percent for nitrogen and 90 percent for phosphorus. Based on these assumptions, the residual concentrations of wastewater ultimately discharging into the marine environment would be 6.0 mg/l for nitrogen and 0.90 mg/l for phosphorus. For 6,920 gallons of treated wastewater, these additions would be equivalent to increases of 0.35 pounds per day of nitrogen and 0.051 pounds per day of phosphorus."

The final paragraph in EIS *Section 3.5.2* applies the small estimated increase in nitrogen and phosphorus to the nutrient load of the watershed discharging along 760-feet of shoreline makai of the project to calculate the conservative estimated increase in nutrient contribution as 4 percent nitrogen and 7 percent phosphorus (also stated in Appendix B page 30).

Comment: *4.9 Appendix B Page 22: The DEIS states that the marine water samples were taken from only one day of sampling, May 17, 2017.*

Comment: In order to better quantify the true natural background levels more than one day should be used, preferably during the wet and dry seasons.

Response: The analytical results of the marine water samples which were taken during the field study on May 17, 2017 are representative of prior marine water quality sampling conducted for other locations on the North Shore.

Comment: *4.10 Page 3-21: Water Quality: The DEIS states "no exceedence of enterocci" and that the area is "not routinely monitored" by DOH.*

Q: Did HP take any samples or study pathogens as part of its DEIS process? If not, why not? Is HP aware of the State standards for recreational water quality for marine waters? Why are those standards not mentioned in the DEIS? What data did HP gather on the compliance with these standards in the MLCD? Is HP aware that State sample of this area is not at the frequency required to provide a geometric mean?

Response: The comment is taken out of context from EIS Section 3.7.1. The statement referenced as page 3-21 of the DEIS attributes the statement "no exceedance of enterococci" to the data collected by the State Department of Health Clean Water Branch (CWB) between March 2006 and May 2009. The entire section 3.7.1 is devoted to discussion of the State standards for water quality including recreational water in compliance with the BEACH act. Pūpūkea Sharks Cove is not identified as a Tier 1 or Tier 2 beach by CWB and is not routinely monitored by CWB. No public or agency comments received during the EIS scoping period requested analysis of recreational water quality impacts; the analysis conducted for the EIS focus on potential impacts to the marine ecosystem.

Comment: *4.11 Page 5-4: The DEIS refers to "recently installed storm water management controls." In contrast, Appendix B Page 1 states that "[a]t present, there are no drainage improvements on the three Hanapohaku parcels."*

Q: What are the controls that were "recently installed" and when were they installed?

Response: The installation of the storm water controls at the site consistent with the conditions of the 2017/SMA-21 SMA Minor Permit was delayed pending the City's approval of the Grading Permit. This installation will be completed by summer 2018.

Comment: *4.12 Page 3-45: The DEIS promises that "[d]ischarge to the off-site DOT drainage system will be at a flow rate equal to the pre-development condition." Later, at Page 3-55, the DEIS promises there will be a "positive impact" from the discharge to the DOT drainage system.*

Q: How will HP monitor the flow rate, post-development, to confirm that this promise is kept? How will the monitoring data be made accessible in a timely manner to DOH, DOT, and the community?

Response: The full sentence referenced on page 3-55 of the DEIS states: "The drainage system to be installed for the rural center will reduce surface water volume and slow flow of any storm water discharged to the State DOT-HI drainage system resulting in a positive impact." This is consistent with the statement in the DEIS page 3-45 cited in your comment. Further, Table 3-5 of the EIS (also on page 3-45) shows the reduction of runoff volume under the proposed conditions ranges between 17,279 and 20,883 cubic feet, depending on the rainfall recurrence interval.

Post-development flow of runoff will not be metered, and the DOH does not collect or require monitoring data. The City DPP Civil Engineering Division is responsible for the review and approval of the site grading plan and drainage plan. Improvements in the State Highway right-of-way will also require review and approval by DOT Highways engineers. For agency approval of the storm water management system, the project design plans and calculations must demonstrate the correct system sizing and placement to mitigate storm water flows. Given the planned capacity of the on-site system, the engineers can confidently state that the project will achieve the required post-development flow rate, which will be at or below the present site storm water discharge rate.

Comment: *4.13 Page 1-10: The DEIS states that "the volume and flow rate of storm water will be reduced."*

Q: Is this compared to the use of non-LID technology if the project proceeded? Please clarify the baseline to which the comparison is being made.

Response: Refer to responses to comments 4.11 and 4.12, preceding.

Comment: *4.14 Page 1-11: "the rural center's draining system will have a significant environmental benefit in comparison to the present use." This statement is repeated at Page 3-19.*

Q: What is the "present use"? Does that mean the current conditions or does that mean the project permitted under the SMA Minor (2017), for which the conditions have not yet been fulfilled? What does this mean in relation to the no action alternative?

Response: Storm water management actions being implemented under the 2017/SMA-21 Minor Permit establish an improved current condition. The No Action Alternative would represent a continuation of the current conditions with the improvements in place under the SMA Minor Permit.

Comment: *4.15 Page 4-33: "The Pūpūkea MLCD and the coastal and marine resources of Pūpūkea and Waimea are valuable assets of the North Shore. The project supports the continued protection of the marine sanctuary."*

Q: How does the project support the protection of the marine sanctuary? Please provide specific examples.

Response: The development of the Pūpūkea Rural Community Commercial Center is completely supportive of the marine sanctuary. First, the completion of the rural center will provide much greater control of storm water runoff from the current site. Second, the rural center embraces the environmental setting of the area, including the rich environmental and recreational resources of the Pūpūkea MLCD. The rural center will provide for an increased public awareness and opportunities for education, and also directing people to the resources of MPW. These awareness and education aspects resulting from the rural center will enhance the protection of the sensitive resources and allow for the proper enjoyment of the beach park and MLCD.

Comment: *Conclusion: The flawed science and analysis concerning the scale of impacts highlights why it so important that HP's DEIS fully comply with both the letter and spirit of the law. The DEIS must help decision makers make fully informed decisions on the proposed activities; after reviewing the DEIS, decision makers must understand the breadth of harm to impacted species and the environment, must be able to choose a course of action from a range of reasonable alternatives, and must have at their disposal a range of mitigation measures that will significantly lessen environmental impacts, not merely ignore them as HP does here. If HP does not adequately and honestly consider the environmental impacts of the Project, how can the community and decision makers trust that the impacts will be properly mitigated for? For the reasons discussed in detail above, MPW believes that the DEIS fails to meet these requirements and does so in such a way that the failures cannot be remedied through the issuance of a final EIS. Accordingly, the document must be thoroughly revised and reissued as a draft for further public review and comment.*

5. HP's DEIS Fails to Adequately Address Recreational Impacts to the Pūpūkea Beach Park and Pūpūkea MLCD

5.1 Page 3-11: The DEIS notes that "the City and County Pūpūkea Beach Park, is located across Kamehameha Highway from the rural center site. This recreational area is heavily utilized, and is one of the premier snorkeling and shore-based SCUBA diving areas in the State of Hawai'i."

Comment: A review of the DEIS by Professor Brian Szuster, at the University of Hawai'i at Mānoa, noted the serious deficiency of the document with respect to recreational impacts. Dr. Szuster is an Associate Professor of Geography, with a PhD focused on assessing cumulative environmental effects in tropical environments; he teaches coastal management, coastal recreation management, introductory and advanced environmental impact assessment; he has over 25

years of experience consulting as an environmental planner; and he has been project manager or lead consultant on over 50 individual EISs.

Dr. Szuster observed that the DEIS makes virtually no mention of coastal recreation impacts, which he concluded was certainly odd when the proposed action is adjacent to one of the most important coastal recreation sites in the State of Hawai'i. He indicated that this oversight represents a significant deficiency in the DEIS and that there is also no excuse for the oversight. According to Dr. Szuster, the authors had access, if they chose to look, to all the baseline data needed to assess coastal recreation impacts in the study titled "Recreation Carrying Capacity and Management at Pūpūkea Marine Life Conservation District on Oahu, Hawaii (2008)," by Needham et al. This study assessed social and facility carrying capacity levels along with existing levels of recreation conflict at the Pūpūkea MLCD. The DEIS should have considered how increased activity associated with the proposed action would affect these parameters. He concluded that the deficiency is significant given the location of the proposed action and there is no excuse given the existence of baseline data (such as Needham et al) to support the impact analysis. It is a serious failure of the proponent's scoping process to miss a potential impact category which is that obvious.

5.2 Q: How will the project impact the recreational use of the Pūpūkea Beach Park and Pūpūkea MLCD? How will these impacts be mitigated?

Conclusion: The absence of any recreational impact assessment regarding the beach park and the MLCD is a major avoidable deficiency given the location of the proposed action and the availability of baseline data to support the analysis

Response: The assertion that patrons of the center will create recreational impacts is questionable. Please see the answer to the comment 4, previous. The existing commercial use of the area across Kamehameha Highway, Foodland grocery store, supports the Pūpūkea, Waimea and Kawailoa communities and visitors. The increase in visitor numbers over the past decade State- and island-wide is well documented by multiple sources, and cannot be attributed to a single development.

The cited report by Needham (2008) provides an analysis of data collected from visitors to three sites in Pupukea MLCD: Waimea Bay; Three Tables; and Sharks Cove. The majority of respondents to the survey were from Hawai'i (44%). The rural community commercial center will support the same communities as Foodland, and visitors from other communities on O'ahu or from out-of-state that come to see the famed North Shore beaches and snorkel the popular Sharks Cove.

The 2015 *Pūpūkea Beach Park Master Plan* states: "The City recognizes that demand for shoreline parks may exceed their capacity at times. For parks, capacity is often limited by the availability of parking, although the perception of 'crowdedness' may impact user experience and discourage use." One of the key planning implications of the master plan's Resource Use section is: "The current levels of use seems to be hovering at the balance point between satisfying demand for shoreline recreation and becoming overused and thus impacting user experience and natural resources. Access to the Park (i.e., parking availability) should be maintained as is."

The EIS addresses the potential impacts to recreational resources in Section 3.12, and consistency with government plans and policies in Section 4. Correspondence with the City Parks Department indicated no concerns to the future effects of the rural center on parks facilities and recreational resources (see EIS Chapter 6 *Agencies and Parties Consulted)*. The Parks Department cited the project's provisions for on-site parking per City LUO requirements.

The commercial properties activities on the mauka side of the highway already exist and are burdened by the overflow of vehicles associated with park users. Parking for the private businesses will be managed at the rural center, including Foodland Pūpūkea, to restrict people from parking vehicles solely for beach park access. This action will serve to continue the status quo parking at the beach park.

Comment: *6. HP's DEIS Fails to Consider Reasonable Alternatives*

6.1 Page 5-1: The DEIS states "[a] wide range of alternative uses are considered . . . ."

Comment: This is not true. The DEIS considers only one semi-realistic alternative – a larger commercial shopping center. The "Deferral" option is not a viable or meaningful alternative. No other reasonable alternative is offered.

Response: The Alternatives section of the Draft EIS followed the proper procedures for the Alternatives analysis, as prescribed under §11-200-8 HAR Environmental Impact State Rules, excerpt below from §11-200-17(f):

> (f) The draft EIS shall describe in a separate and distinct section alternatives which could attain the objectives of the action, regardless of cost, in sufficient detail to explain why they were rejected. The section shall include a rigorous exploration and objective evaluation of the environmental impacts of all such alternative actions. Particular attention shall be given to alternatives that might enhance environmental quality or avoid, reduce, or minimize some or all of the adverse environmental effects, costs, and risks. Examples of alternatives include:
>
> (1) The alternative of no action;
>
> (2) Alternatives requiring actions of a significantly different nature which would provide similar benefits with different environmental impacts;
>
> (3) Alternatives related to different designs or details of the proposed actions which would present different environmental impacts;
>
> (4) The alternative of postponing action pending further study; and,
>
> (5) Alternative locations for the proposed project.
>
> In each case, the analysis shall be sufficiently detailed to allow the comparative evaluation of the environmental benefits, costs, and risks of the proposed action and each reasonable alternative. For any agency actions, the discussion of alternatives shall include, where relevant, those alternatives not within the existing authority of the agency.

The Draft EIS includes a separate and distinct section addressing alternatives, providing rigorous exploration and objective evaluation of the environmental impacts of the alternative actions. In Chapter 5.1 and 5.2, a wide range of potential alternatives were screened against the Project Objectives and Selection Criteria. Several potential alternatives were considered, matching the requirements of HAR §11-220-17 including: (f)(2) Alternative Actions with

significantly different nature which would (potentially) provide similar benefits with different environmental impacts. These options included the potential for Agricultural Use; Open Space and Park Use; Government/Public Facilities Use; Residential Use; and Industrial Use. The results of the screening review found that these alternatives would not create similar benefits, and could potentially generate greater environmental impacts, and these were dismissed from further analysis. Another alternative that was examined included §11-220-17 (f)(5) Alternative locations for the proposed project. This option was also dismissed following screening since the City's long-range plans identify this one location as the Rural Commercial Community Center.

Three alternatives were analyzed for the full evaluation of potential impacts, including those alternatives matching the requirements of §11-220-17 including: (f)(1) No Action Alternative; (f)(3) Commercial Shopping Center Alternative; (f)(4) Deferred Action Alternative. The evaluation is presented in EIS Chapters 5.3, 5.4 and 5.5. In each case, the analysis was sufficiently detailed to allow the comparative evaluation of the environmental benefits, costs and risks of the proposed action and each reasonable alternative. An alternatives comparison summary is provided in Chapter 5.6.

Comment: *Q: Is HP willing to consider a true community-based alternative in a revised DEIS such that the alternatives analysis is meaningful to the public and decisionmakers?*

6.2 Page 5-2: The DEIS describes four "Evaluation Criteria" for the alternatives.

Comment: Additional criteria for alternatives should be (a) "ensuring no impact to Pūpūkea Beach Park and the Pūpūkea Marine Life Conservation District"; (b) no adverse impact on vehicle traffic or pedestrian safety; (c) no adverse impact on Pāhoe Road neighbors.

Response: The City's long-range plans for the North Shore are detailed in the North Shore Sustainable Communities Plan. The NSSCP includes an Open Space Plan which highlights the rich open space and park areas which have been established to support the needs of residents and visitors along the North Shore. Across the highway on the makai side, a large City beach reserve extends several miles from Sunset Beach to Three Tables area. This City beach reserve complex is served by several beach support park facilities at Sunset Beach Park, Ehukai Beach Park and the facilities across the street at Sharks Cove. In addition, the Sunset Beach Recreation Center is located about one mile to the north, and the Skate Park is located a short distance beyond. Elsewhere in the vicinity is the 1,129-acre Pūpūkea-Paumalu State Park. The 1,875-acre Waimea Valley, was acquired by the Office of Hawaiian Affairs and the US Army. Clearly, the North Shore is very rich in open space and park areas for the enjoyment of all. There are no plans by the government or the community seeking to convert the existing lands which are zoned as B-1 Neighborhood Commercial into open space parks. As specified in the NSSCP, the project location, including the Pūpūkea Foodland, is identified as the site of the Rural Commercial Community Center serving this area. The proposed action is consistent with the long-range plan for the North Shore.

Comment: *6.3 Page 5-2: The DEIS states that alternatives that were "not consistent with the B-1 zoning district" were rejected for further analysis.*

Comment: The Open Space Park/Recreation Use option is not sufficiently explored and should be considered as a full alternative in a revised DEIS. Partial use of the property for this purpose is <u>not inconsistent</u> with B-1 zoning. In fact, the location of the property, as the DEIS notes, "across the highway from a large continuous County beach park system," page 5-2, means that such uses on this property would be <u>consistent</u> with the usage of those public recreational spaces.

Response: As stated in the previous response, there are numerous expansive park areas and support facilities for open space recreation in Sunset Beach. The addition of more use or facilities at the subject location is not the interest of the City Department of Parks and Recreation. The Department does what it can to maintain the park areas and facilities along the North Shore with limited resources, and the potential for adding new maintenance requirements would present additional stress.

Of note, the design of the Rural Community Commercial Center is specifically intended to provide a low intensity use (only 25% of allowed floor area ratio) and includes a park-like open space area in a central green, with walking paths, bicycle paths, and seating areas along the makai portion of the site. This sensitive design approach will provide the community with an enjoyable and beautiful setting, with buildings set back from the highway and parking located behind to offer visual relief.

Comment: *6.4 No Action Alternative Page 1-13: The DEIS states that the "baseline" is the property with "existing conditions."*

Q: Please describe whether, how, and when HP has fulfilled the conditions required by 2017/SMA-21 such that "existing conditions" are fully legal.

Comment: Please include transparent information in the DEIS to indicate that MPW has a pending contested case petition against DPP for the issuance of this specific SMA permit.

Response: The existing SMA Minor Permit (2017/SMA-21) approved in August 2017 authorizes the existing uses of the property. The owners are conducting commercial operations in full conformance with the conditions specified in the SMA Minor permit as noted in EIS *Section 2.2*. There is a pending contested case petition against the City for issuance of the SMA Minor permit. The MPW comment letter and response letter are published in this Final EIS.

Comment: *Page 1-13: As the DEIS acknowledges, "some existing commercial operations at the property are less than desirable, such as the disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, vehicle ingress/egress, and non-focused pedestrian access." Page 5-7 repeats this statement about "disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, haphazard vehicle ingress/egress, and non-focused pedestrian access."*

Comment: MPW appreciates how HP has cleaned up the site in response to these serious community concerns and in order to "legalize" its development activities. The poor track record of activities on the site from the date the new owners purchased the property (2014) until DPP's issuance of 2017/SMA-17 indicates, however, that any existing and future permits and

conditions to any development on the site must have transparent, detailed, enforceable provisions such that DPP and the community can maintain vigilance over this sensitive location. MPW notes that HP's web site has not been maintained in a manner that provides complete and transparent information to the community as promised by HP.

Q: How will HP ensure that its compliance with any existing and future permits and conditions be transparently shared and communicated with the community?

Response: The landowner has diligently addressed the concerns of the past, through the approval of the SMA Minor permit and their compliance with conditions in the current operations. Information relating to permit compliance has been updated regularly on the Hanapohaku website. The future SMA Major permit will have specific conditions requiring ongoing compliance reports with the City and State. Further, the owners will continue to have a very open dialogue with the community and will continue to attend regular meetings of the Sunset Beach Community Association. By maintaining this close relationship, the owners will be aware of community issues and concerns, particularly those involving the rural center, and appropriately respond to these concerns.

Comment: *6.6 Page 1-13: The DEIS states that 2017/SMA-17 imposes "very specific actions required of the owners to manage activities to minimize effects to neighbors, the community and the environment." Page 5-7 repeats this statement: "that 2017/SMA-17 imposes "very specific actions required of the owners to manage activities to minimize effects to neighbors, the community and the environment."*

Q: Please provide a complete, accurate, and current update in the DEIS on HP's progress toward these "very specific actions."

Response: There are owners have committed to not using Pahoe Road for a regular property access and egress with the current operations under the SMA Minor permit. The same access conditions will be sustained with the long-term project.

Under the SMA Minor permit, commercial operations at the property must follow business hours of 7:00 AM to 9:00 PM. The future rural center will have a later closing time, to be determined based on the future tenant operations.

Comment: *6.7 Page 5-3: The DEIS notes that the current commercial uses on the property are "entitled" and "approved."*

Comment: The current uses are not "entitled" and "approved" until all conditions of 2017/SMA-17 have been met and the pending contested case petition challenging that permit have been resolved.

Comment: Please add a notation to this effect on this first paragraph.

Response: The conditions of 2017/SMA-21 have been met. There is a pending contested case petition against the City for issuance of the SMA Minor permit. This information is included in our response letter which is published in the Final EIS.

Comment: *6.8 Page 5-3: The DEIS reports that "soils stabilization and erosion control measures [are] in place."*

Comment: MPW notes that HP engaged in extensive illegal grading and grubbing on the site since it acquired ownership, and was assessed fines by DPP for these illegal activities.

Q: What corrective measures were taken in response to DPP enforcement action? What measures that are "in place," providing dates of installation/completion, and describe the additional measures not yet in place that are required by 2017/SMA-21?

Response: On February 9, 2018, Hanapohaku received notice of the clearance from the City DPP for the last outstanding violation on the land. Hanapohaku would like to thank the community and DPP for working with them through this process. Hanapohaku remains committed to following all procedures set out by DPP in ensuring that every step forward is in full compliance.

Actions taken in compliance with the SMA Minor Permit 2017/SMA-21 have included a reduction to five food trucks on-site. Many other actions have been implemented to satisfy the conditions of the SMA Minor permit. Restoration of site areas and other work has awaited the approval of Building Permit, Grading Permit and Electrical Permit, which were granted as of March 2018.

Of note, the uses permitted under the SMA Minor Permit will be completely removed for construction of the rural center.

Comment: *6.9 Page 1-13: The DEIS indicates that the No-Action Alternative "would dismiss" the proposed action that is "designed to be consistent with the principles of the North Shore Sustainable Communities Plan."*

Q: Are the "existing conditions" under the partially fulfilled conditions of SMA-21/2017 "consistent with the principles of the North Shore Sustainable Communities Plan"? If yes, why? If not, why not?

6.10 Page 5-6: The DEIS states "the No Action alternative would not be consistent with all the policies and objectives of the North Shore SCP."

Comment: This statement appears to be another admission that the existing uses on the property violate the North Shore SCP.

Q: How is SMA-21/2017 valid if it is not consistent with the North Shore SCP?

Response: The DPP requires the current commercial uses of the property to be consistent with the North Shore SCP. Currently, a range of goods and services are provided to meet the needs of the surrounding community and its visitors, including a variety of fresh quick-serve foods, beach wear, jewelry, surfboards and surfing gear, and real estate services. The existing buildings are single-story and wooden. The current use is a compact and efficient organization of various commercial services. The proposed center would allow additional services such as

a credit union serving the North Shore community, services such as child day care, multi-purpose studio for hula or fitness, business services and small-scale pharmacy.

Comment: *6.11 1-13, Alternative – Commercial Shopping Center Page: The DEIS states that the B-1 zoning would allow for 1.0 FAR and allow over 100,000 SF floor area.*

Q: Is a Commercial Shopping Center of 100,000 SF or even 46,000 SF feasible given the numerous site constraints disclosed in the DEIS, including the UA and the NSSCP?

Page 1-13: The DEIS states that the "larger Hanapohaku properties could easily support an [sic] FAR denser [later noted as .392 FAR] than the existing commercial floor area of the Foodland store at .294 FAR."

Q: What is the basis of the statement "easily support"? How feasible and reasonable is the "need" for "access driveways connecting off both Kamehameha Highway and Pāhoe Road, with partial basement parking," particularly given, as noted in the prior paragraph, that "[a] proposed 2004 project for a shopping center project . . . was strongly opposed by the community," in part for these two reasons?

Response: The Commercial Shopping Center Alternative addresses a commercial use of the property at 46,000 SF (.392 FAR) could fit quite well on the property from a design standpoint. The objectives and policies of the NS SCP would be met, albeit at a higher level, by offering a wider range of goods and services for the surrounding community and its visitors. Such as shopping center would need to introduce several food and beverage tenants to produce a viable business mix. Given the success of restaurants in Haleiwa town, there is little question that the market exists for such offerings. However, this comparatively large Shopping Center would introduce issues that the Rural Center project avoids, such as a much larger quantity of wastewater, injection disposal and it would also generate much higher traffic volumes. The Commercial Shopping Center alternative is roughly one-half the scale of the 2004 proposal, yet there may be community opposition to this larger scaled project.

Comment: *6.13 Page 1.13: The DEIS states that "deferral" is an alternative to the Project. "This alternative considers the deferral of the project to a later date." Page 5-7.*

Comment: The DEIS does not indicate any meaningful or substantive difference between the "deferral alternative" and the No Action alternative.

Q: Is there a difference?

Comment: Deferral is a "straw alternative," that is, it is NOT a legitimate alternative, logically or legally, and should be eliminated completely from the DEIS.

Q: Has G70 used a "deferral" alternative in other EISs? What is the legal basis for this kind of alternative? What is the basis for this kind of alternative being considered best practice for EIS consultants?

Page 1-14: The DEIS notes that the "[p]otential impacts would essentially be similar to those described in the No-Action Alternative."

Comment: This observation indicates, in fact, that there is no meaningful difference between Deferral and No-Action. Therefore, as noted above, this alternative should be completely eliminated from the DEIS.

Pages 5-8 through 5-14 provides charts that show that there is no meaningful difference between the No Action Alternative and the "Deferred Action Alternative."

Comment: In column 2 and 4 of each page (throughout seven pages), the language about the two alternatives is almost completely "cut and paste." The only addition for the Deferred Alternative is this boilerplate sentence: "The potential future project plans are unknown" or "to be determined."

Comment: This shows again that there is no meaningful difference between Deferral and No-Action.

Response: The comment states that there is no difference between the Deferral and No Action alternatives, which is not the case. Postponing action truly means the rural center project is forthcoming, just that project timing and scope may be adjusted to conform to a new time horizon.

Comment: *6.16 Page 5-15: The DEIS acknowledges that the "Deferred Action Alternative" "would essentially extend the No Action Alternative indefinitely, resulting is a similar set of comparative benefits and drawbacks. . ."*

Comment: This statement confirms that this "alternative" is, in fact, meaningless.

Response: See previous response. The content for the Alternatives analysis is prescribed under HAR §11-200-17(f). Among the listed alternatives which may be contemplated are: "(1) The alternative of No Action; and (3) The alternative of postponing action pending further study." Postponing action is essentially the Deferral Alternative, where the owners would continue their existing commercial operations, while they continue to evaluate future market conditions, tenant opportunities, rural center design options and construction costs. No action means the project is not happening, and the elements constituting the SMA Minor plan would continue in operation for the foreseeable future.

Comment: *6.17 Page 5-7: The DEIS states that, with the Deferral Alternative, "the local and regional traffic conditions are expected to remain challenging."*

Comment: The DEIS should specify how the existing uses of the property, and the current development status under the 2017/SMA-21, has contributed to the local and regional traffic conditions.

Q: Was any kind of professional traffic analysis completed for HP's application for 2017/SMA-21? If not, then how does HP know the impact its current development is having on the "local and regional traffic conditions"? If so, please provide a copy of that traffic analysis in a recalculated DEIS for public and agency review.

Response: The challenges of the existing traffic conditions on the North Shore are a regular topic of discussion and well documented. No traffic study was required for the SMA-minor and its assemblage of current commercial uses on the property. Over the past two years, members of the community attending public meetings that have stated that the current food offerings at the property are well received, and these businesses have saved them vehicle trips to Haleiwa or beyond to find a variety of food offerings and price point. The statements have come from people with families that live and work on the North Shore. The lack of the number and variety of local food offerings is real, and nobody wants to fight traffic to travel to/from Haleiwa.

Comment: *6.18 Page 5-7: The DEIS states that, under the Deferral Alternative, "community residents would continue to travel a significant distance to accessing many goods and services." Later, the DEIS states, at Page 3-56, that the Project "may reduce vehicle trips for some area residents."*

Q: Has HP does an analysis of the consumption/purchasing patterns of Pūpūkea and Sunset Beach residents? Has that analysis been correlated with travel times and locations? If not, then how does HP support the statement that either the No Action or the Deferral Alternative will have any impact on community residents' travel for accessing goods and services?

Response: The EIS does not include a study of purchasing patterns or correlations with travel times. Residents of Sunset Beach and Pūpūkea have indicated their appreciation of the mobile food trucks operating at the property. Over the past two years, members of the community attending public meetings that have stated that the current food offerings at the property are well received, and these businesses have saved them vehicle trips to Haleiwa or beyond to find a variety of food offerings and price point. With the future rural center providing a wider range of goods and services, there will be less of a need for local residents to travel to Laie, Haleiwa and beyond.

Comment: *6.19 Page 5-7: The DEIS states that if the project is deferred, "there would always be the potential for a change in ownership to another entity, possibly an offshore owner group with different business perspectives and site development objectives."*

Comment: This "straw argument" statement appears intended to intimidate the community into accepting a development project that has many serious flaws.

Q: What is the basis of stating that "an offshore owner" is "possibl[e]"? Has HP explored options to sell the property to another owner, offshore or in the islands? What prevents HP from selling to "an offshore owner" of the kind described at any time, either soon after permits for the Project proposal are received or at a later date? Is HP willing to enter into a covenant and SMA conditions that bind future owners to what it believes represent good "business perspectives and site development objectives"?

Response: Hanapohaku LLC is a local owner that seeks to develop the rural center to provide goods and services to the surrounding community and its visitors. The project is designed at a scale that is compatible with the Sunset Beach setting, and the future SMA Major Permit will set forth conditions relative to Chapter 25 ROH objectives and policies. There is nothing

preventing a sale of this property in the future, however, the family is emphasizing the project as a "legacy investment" with no intention of selling.

Comment: *6.20 Page 5-5, Commercial Shopping Center Alternative: The DEIS states that a commercial shopping center would be "allowed per the B-1 Neighborhood Business Zoning."*

Comment: MPW notes that the definition of B-1 zoning is:

B-1 Business - Neighborhood

The intent of the B-1 neighborhood business district is to provide relatively small areas that serve the daily retail and other business needs of the surrounding population. It is intended that this district be generally applied to areas within or adjacent to urban residential areas, along local and collector streets, but not along major travel routes or on a large-scale basis. It would also be applied to rural and urban fringe town centers, which may or may not be located along major travel routes. (Taken from Land Use Ordinance, May 1999, Sec. 21-3.110 (b)) (emphasis added).

Q: How is the alternative of 100,000 SF or 46,000 SF consistent with B-1 requirements of "small areas" that "serve the daily" needs of the surrounding population? Given the conditions of North Shore Sustainable Communities Plan, on what basis does HP believe that this alternative is feasible?

Response: The Shopping Center Alternative at 46,000 SF would provide this relatively small area of Pūpūkea and Sunset Beach with daily retail and business needs of the surrounding population. The scale of the Shopping Center Alternative is 65% larger than the proposed action for development of the Rural Center. The Shopping Center would provide for a comparatively greater variety of goods and services, including additional food and beverage establishments. The Shopping Center design and its tenant mix could conform to the NS SCP objectives and policies, but at a larger scale with attendant impacts.

Comment: *6.21 Page 5-5, Water Use: The DEIS notes that the alternative would use 56,200 gpd with landscaped irrigation." Page 3-44 references the separation of the irrigation and potable water systems.*

Q: Will HP use recycled, non-potable water for the future development on the project? If not, why not? If so, will HP install dual water systems for the non-potable water used for irrigation?

Response: To clarify your comment, the Shopping Center Alternative is projected to utilize up to 56,200 GPD with landscape irrigation. In comparison, the rural center will have an average daily demand of 8,160 GPD. There will be no dual water system to use a non-potable water source, however, water conservation measures will minimize the use of potable water. The on-site water system will be divided for the irrigation system, as required under HAR Section 11-21 *Cross Connection and Backflow Control*.

Comment: *6.22 Page 5-6: Traffic & Transportation. The DEIS states that "[t]raffic conditions would generate approximately 157 vehicle trips during the Saturday peak hour ..."*

Q: What data in the DEIS supports this statement?

Response: The number of Saturday peak hour vehicle trips are projected to be 40 to 50% higher than typical weekday peak hour, based on observations made in the field studies. The standard ITE trip generation rates were utilized to determine the projected Saturday peak hour traffic from the 46,000 SF Shopping Center Alternative. In traffic impact analysis, the vehicle trips are distributed throughout the day, with the typical mid-day hours and peak hour ("rush hour"). In comparison to the rural center, the Shopping Center Alternative would have significantly greater traffic during the Saturday peak hour.

Comment: *6.23 Page 5-6: Economics/Fiscal. The DEIS states that "estimated total employment would be 86 full time equivalent jobs among the various tenants."*

Comment: This estimate of 86 is the same as for the proposed Project. See DEIS, page 3-33.

Q: Is this an error? If not, please support this estimate with detailed information regarding the jobs (part-time and full-time) is attributable to the alternative Shopping Center. This error indicates that the analysis of this alternative was not carefully done and the analysis must therefore be revised with accurate citations to factual support.

Response: The estimate of employment made in the Draft EIS for the rural center project is 86 long-term jobs and has been changed to 80 in the Final EIS with the reduction of mobile food truck spaces on site (*Section 3.11.2*). The estimate for employment at the Shopping Center Alternative was lower than it should be and has been corrected in the Final EIS to reflect it could create up to 138 long-term jobs (*Section 5.5*). The projection of employment levels is based on operational staffing levels for the anticipated wider range of commercial tenants in the Shopping Center Alternative.

Comment: *6.24 Page 5-6: Economics/Fiscal. The DEIS states "[t]he Real Property Tax due to the City and County of Honolulu would be about $148,600 annually." (Emphasis added.)*

Comment: Page 1-11 of the DEIS states that the "County real property taxes will increase to approximately $187,500 per year."

Q: Are both figures correct and what is the basis for these figures? How is the property tax for a larger commercial development noticeably less than the property tax for a "smaller" commercial development?

Comment: This error indicates that the analysis of this alternative was not carefully done and the analysis must therefore be revised with accurate citations to factual support.

Response: *Section 3.11.2* of the EIS correctly shows the estimated County real property tax for the proposed action at $148,600 annually, however, the number was incorrectly transferred into the Summary section (page 1-11 of the DEIS). The EIS has been corrected. The estimate for real property tax for the Shopping Center Alternative was lower than it should be. The calculation is based on the current (2016-17) City and County of Honolulu Real Property Tax rate of $12.40 per $1000 net taxable value. For the Shopping Center Alternative, based on a projected net taxable value of $15.12 M, the revised projection of real property tax generation is $187,500 annually.

Comment: *6.25 Page 5-6: Land Use/Zoning. The DEIS states that the Shopping Center alternative would "slanted more heavily toward offerings which cater to visitors to the areas" and have a "greater percentage of mainland business franchises."*

Comment: This statement demonstrates that this alternative is a "straw" alternative, put in the DEIS simply to make the proposed development look good.

Q: If the "slant" is toward visitors with this alternative, why is that also not a true statement for the "smaller" proposed project? What is the basis, in fact or law, for this distinction? If the percentage of mainland business franchise is "greater" for this alternative, why is that also not the same likely fate for the "smaller" proposed project? What is the basis, in fact or law, for this distinction?

Response: The larger Shopping Center Alternative would have a wider range of goods and services, which most definitely would attract mainland-based businesses. Mainland-based franchise businesses typically apply a screening factor in locating their new outlets. For the mainland franchises, the relatively greater "critical mass" of the larger Shopping Center Alternative would be preferable to the smaller community-based rural center.

Comment: *6.26 Page 5-7: Archaeological and Cultural Resources. The DEIS notes that "[t]he large scale of the development could limit the open space/public areas and landscape setting for cultural education and activities."*

Q: What specific type of cultural education and activities are planned for the proposed Project? Under the proposed Project, is it possible that no cultural education or activities might take place? Why would the space or time allocated for cultural education and activities be any different under this alternative or the proposed Project given that these appear to be discretionary for the landowner and tenants?

Response: The Shopping Center Alternative will have more buildings and parking facilities, which limits the amount of physical open space available for landscaping, gathering places, and possible education and performance areas. We agree that cultural education and activities are important for this location. The rural center will have native plants integrated in the landscape, cultural and environmental education exhibits, and a large village green common area with space for performances of music and dance. The Shopping Center Alternative could include these elements but with comparatively less open space area it would result in a more urbanized scale and context.

Comment: *6.27 Page 5-6, Groundwater. The DEIS states that the Shopping Center alternative would have an injection well.*

Q: What would be the depth and size of the well(s)? How would the "mix into the subsurface aquifer" be different than the projected mixing under the proposed Project's wastewater system, which will leach into the groundwater table below the property?

Response: The aerobic treatment system proposed for the proposed action (rural community commercial center scale) will utilize the natural cleansing properties of soil as described in *Section 3.5.2* of the EIS. Nutrient removal from both the proposed aerobic treatment system

and the subsequent percolation through the absorption beds and underlying soil vadose zone are conservatively estimated at 80 percent for nitrogen and 90 percent for phosphorus.

The much larger comparative volume of wastewater generated from the Shopping Center Alternative would require the disposal of treated effluent via on-site injection wells. The magnitude of input from the Shopping Center Alternative would directly transmit a greater quantity of effluent nutrients to the groundwater table below the property. With a wastewater injection well serving the Shopping Center scenario, a much greater quantity of nutrients would be transmitted into groundwater, and ultimately released offshore to the ocean. Both the community and government have serious concerns about a less sensitive injection well method for disposal of wastewater effluent.

The system proposed for the preferred rural center will utilize a highly advanced wastewater treatment process that will employ aeration and separation of waste with additional ground treatment through absorption beds. The absorption bed disposal system will be double the required size for 100 percent redundancy. The aerobic treatment system provides a secondary treatment process for environmental protection that can obtain an appropriate effluent quality and is recommended by wastewater and groundwater engineers and the State Department of Health Wastewater Branch.

The system represents a model approach to wastewater management in this sensitive coastal environment which is already affected by human waste inputs. There are over 500 onsite wastewater disposal systems (cesspool and septic systems) directly upgradient of the project site; these existing residential wastewater systems release a wastewater volume in excess of 100,000 gpd into the groundwater, all of which ultimately reaches the ocean. The rural center will have a low volume and high quality on-site wastewater treatment system employing ground disposal demonstrating the highest level of sensitivity to this important concern of protecting nearshore water quality.

Comment: *6.28 Page 5-6: Surface Water/Storm Water Runoff Quality. The DEIS states that "[w]ithout effective onsite measures to minimize inputs, there may be great amounts of contaminants in the runoff water reaching the ocean."*

Q: Does this statement ("without") mean that HP would not install appropriate and effective "onsite measures" to control wastewater under this alternative? If so, then how can the community have any confidence that such "effective onsite measures" will be installed under the proposed Project?

Comment: This statement again demonstrates again that this alternative is a "straw" alternative.

Response: HAR §11-200-17(f) provides examples of alternatives which could attain the objectives of the action. Examples of alternatives include "alternatives related to different designs or details of the proposed actions which would present different environmental impacts." The Hanapohaku proposed action (rural center scale) is compatible with the Sunset Beach setting, and the future SMA Major Permit will set forth conditions relative to Chapter 25 ROH objectives and policies. There is nothing preventing a sale of this property in the

future, however, the family is emphasizing the project as a "legacy investment" with no intention of selling.

Comment: *6.29 Page 5-6: Marine Environment. The DEIS states that there would be "an increased potential for adverse effective to the nearshore ocean water quality and marine environment" from the Shopping Center alternative.*

Q: What is the basis for that statement and how much would be increase be? How would the increase be measured and monitored?

Comment: Once again, this statement demonstrates again that this alternative is a "straw" alternative.

Response: The EIS must properly address alternatives to the proposed action, as directed under Chapter 25 ROH, Chapter 343 HRS and Title 11-200 HAR. To be clear, Hanapohaku does not propose to build the Shopping Center Alternative, however, this is a logical alternative scenario being studied for the EIS disclosure process. If such a development was pursued, the Shopping Center Alternative would be required to satisfy standard compliance conditions for the Grading Permit and NPDES Permit. In comparison to the rural center, the Shopping Center Alternative would generate an increased runoff volume and provide less open space landscaped area to implement the planned low impact development measures. Due to these factors, the Shopping Center Alternative would be expected to transport comparatively more runoff contaminants to the ocean.

Comment: *6.30 Page 5-7, Noise and Air Quality. The DEIS states that the Shopping Center alternative "would have noise associated with trucks and vehicles accessing the commercial operations. There would also be vehicle emissions associated with the trucks and vehicles accessing the site."*

Q: What is the basis for comparison of this increase noise and emissions with the proposed Project? How many trucks and vehicles would access the site, weekdays and weekends, and at what hours, under the two alternatives? How will HP reconcile this noise and emissions impact with the existing noise and emissions from the Foodland delivery trucks, which the DEIS acknowledges is a significant community concern?

Comment: This statement demonstrates again that this alternative is a "straw" alternative, put in the DEIS simply to have a punching bag.

Response: In comparison to the rural center, the Shopping Center Alternative would have a larger group of tenant businesses and greater requirements for truck deliveries of materials and supplies. The No-Action Alternative would have much fewer truck deliveries than the rural center. Delivery trucks would be scheduled to operate at non-peak traffic hours and use the project driveway which provides direct access off Kamehameha Highway.

The number of truck deliveries to Foodland Pūpūkea are greater than the anticipated number of deliveries for the rural center or the Shopping Center Alternative. The is a much larger number of vendors that provide supplies daily/weekly to the existing grocery store operation.

Comment: *6.31 Page 5-7, Visual Resources. The DEIS states that the "two story buildings could extend to heights of 35 to 40 ft."*

Comment: Please provide information about height limitations for various kinds of buildings for this property.

Q: Does that same potential height of the buildings apply to the proposed Project? If not, why not?

Conclusion: HP must consider reasonable alternatives that conform to the NSSCP and that involve less not more development than proposed project.

Response: Building heights are governed by the existing zoning code for the B-1 neighborhood commercial properties, which sets a 40-foot height limit. This height limit applies to the buildings proposed for the rural center and the alternative scenarios. The rural center has two story buildings with peaked roof forms that are about 32 feet in height. With the Shopping Center Alternative, there would be a need to accommodate some parking under the buildings, which could force the two-story buildings to an overall height approaching 40 feet.

Comment: *7. HP's DEIS Fails to Adequately Asses Traffic Impacts*

MPW has submitted a separate set of comments on January 8, 2018, from expert Tom Brohard regarding HP's inadequate assessment of traffic impacts. We incorporate all of those comments by reference here.

Mr. Brohard concludes that: "In sum, the November 2017 DEIS for the proposed Pūpūkea Rural Community Commercial Center is seriously flawed as it does not provide an adequate assessment of traffic impacts on the adjacent roadway segments and intersections. As explained in detail throughout this letter, many of the assumptions and conclusions in the TIAR are not supported by proper documentation and substantial evidence. Errors in the TIAR methodology include faulty trip generation calculations based on superseded, outdated information. Further study of these and the other issues identified in this letter is required as part of a Recirculated DEIS for the Proposed Project."

Response: Detailed reviewed and responses to the comments from Tom Brohard are documented in a separate response letter sent to Malama Pupukea-Waimea and published in the Final EIS. Those responses and incorporated by reference in response to this comment.

Comment: *8. HP's Promises Are Illusory Unless It Agrees To Binding Covenants in the SMA*

8.1 Comment: Lofty Promises v. Enforceable Conditions. The DEIS uses lofty descriptions that are wrapped in a drum-beat of cultural and community references to try to cloud the true nature of what is, in essence, a tourist trap. Sweet promises of local jobs, locally owned businesses, highway and pedestrian improvements, cultural sensitivity and programming, and no impacts to the environment are just that – promises. None of these promises is currently enforceable.

The day after HP secures the SMA for this property, the property can be sold, the businesses can be re-leased, and the entire litany of DEIS promises means nothing.

The community and DPP have a right – even a duty – to be skeptical about all of these promises given the very poor track record of this developer who operated for several years with illegal development of the property, racking up numerous violations of the SMA and other laws. Indeed, for this reason, MPW has filed two petitions for a contested case hearing against DPP in response to improperly issued SMA permits. Neither of these contested case proceedings has been resolved or even advanced to hearing. As far as MPW can discern, approximately $100,000 in assessed fines by DPP against the City are still unpaid. The owner does not have clean hands in approaching this proposed major development. Therefore, in reviewing the DEIS, assumptions, "brown-washing" and "green-washing", as well as facts and studies, should be seriously reviewed and questioned.

Response: On February 9, 2018, Hanapohaku received notice of the clearance of the last outstanding violation on the land. Hanapohaku remains committed to following all procedures set out by DPP in ensuring that every step forward is in full compliance.

The approval of a SMA Use Major Permit will establish a conditional approval for the development and operation of the rural center. The project includes measures to protect the environment and improve the good and services available to the community. The project follows sustainable development principals in concert with the environmental sensitivity and rural area values set forth by the surrounding North Shore community.

Comment: *8.2 Page 2-3: The DEIS describes existing uses at Foodland and then currently on the HP property.*

Comment: The DEIS should describe the development at the site from the 2014 purchase of the property by HP until the changes made in response to the issuance of 2017/SMA-21. Elsewhere (pages 1-13 and 5-7), the DEIS uses the following language and it should be repeated here with more detail: "some existing commercial operations at the property are less than desirable, such as the disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, haphazard vehicle ingress/egress, and non-focused pedestrian access."

8.3 Page 2-3: The DEIS states the commercial operations on the property are "entitled" under 2017/SMA-21.

Comment: The current uses are not "entitled" and "approved" until all conditions of 2017/SMA-21 have been met and the pending contested case petition challenging that permit have been resolved. Please add a notation to this effect on this paragraph.

8.4 Page 2-3: The DEIS states "[c]urrent compliance actions include settlement of fines and obtaining site development and building permits." This is mentioned again at Page 3-30.

Comment: The DEIS should include specific information about the assessment of fines by DPP and the "settlement of fines" between HP and DPP.

Q: What are all violations, fines assessed, and penalties paid since HP acquired the three parcels?

Response: On February 9, 2018, Hanapohaku received notice of the clearance of the last outstanding violation on the land. Hanapohaku remains committed to following all procedures set out by DPP in ensuring that every step forward is in full compliance. Details of specific violation clearances are available on the DPP website.

Comment: *8.5 Page 2-3: The DEIS states "[t]he existing uses will be completely removed for development of the Rural Community Commercial Center."*

Q: Has HP informed all of its current tenants that their operations will be shut down during development and that the likely duration of development shut down is projected to be at least two years (see Page 2-16)?

Response: The existing uses on the property will be removed for development of the future rural center. Each of the current tenants have been notified of this pending action.

Comment: *8.6 Page 2.4: The DEIS states that the NSSCP "identified very limited locations for infill development."*

Comment: This statement emphasizes the particularly heavy responsibility that HP has to develop this site with the highest level of care and quality. Not only is this commercially zoned lot virtually unique on the North Shore in terms of zoning and the NSSCP, but it is rare, if not unique, to have a commercial lot on the North Shore that has direct ocean views and such close access to a beach park and marine reserve. This again imposes special responsibilities on HP in developing these lots. Once developed, the structures and infrastructure on these lots will essentially be irreversible. Therefore, HP has a kuleana, a responsibility and a privilege, to carry out its processes and development with the highest ethical and community standards. Unfortunately, the actions of HP since it acquired the land have not met these high standards, or even minimum legal standards, in the view of MPW and many members of the community.

Page 2-5: The DEIS states that the Project will support local businesses and home-grown entrepreneurship, with business and employment opportunities for area residents.

Q: What is HP's definition of "local," "home-grown" and "area residents?" Are any of these aspirational statements legally binding on HP? If not, is HP willing to enter into conditions and covenants on its SMA permit and development that bind it to these commitments?

Response: The owners of the rural center understand this responsibility and have prioritized local Hawai'i based businesses for the leasing of tenant spaces, particularly those with North Shore roots. The specific businesses committed with letter of intent for the rural center include Waialua Federal Credit Union, Island Urgent Care, North Shore Surf Shop, Seamaids, The Spot, North Shore Tacos and others are in discussion. These are all Hawai'i-based enterprises, with some from the North Shore community.

Comment: *8.8 Page 2-5, Culture and Sustainability: The DEIS mentions the Pūpūkea "region."*

Comment: Pūpūkea is an ahupua'a not a "region." Given that emphasis in the DEIS and this section in particular on culture and sustainability, the lack of understanding of, and appropriate reference to, the ahupua'a in which the Project is located is surprising and disappointing.

8.9 Page 2-5, Culture and Sustainability: The DEIS wraps the project in "culture" by mentioning native plants, a gathering place for hula and music, and just "talk story." This promise is repeated at Page 3-29.

Q: Will HP commit to using only native plants for all of its landscaping? If not, then what percentage of the landscaping will be native plants? Will interpretive signage that is culturally and scientifically accurate be utilized?

Q: What is the size of the area where hula would be performed? How often will hula be performed and by which hālau? Is it culturally appropriate to have hula performances so near a three-lane highway, with the associated noise, and in an area where there may be to eight food trucks? Who will ensure, and how will it be ensured, that the hula performances are authentic and culturally appropriate and not "Kodak Hula Show" for tourists?

Q: Does HP have any experience with cultural programming? If so, please detail that experience.
Q: Who is advising HP on the cultural sensitivity of this Project?

Q: Does HP take the position that promises of some native plants and some hula performances make the Project culturally appropriate or a cultural center?

Response: The inclusion of native plants in the landscaping is for beauty, cultural authenticity and water conservation. The landscaping will not be 100% native plants. The plant palette is being developed with the landscape architect and will include native plants that are suited to the lowlands of the Pūpūkea-Paumalu area. We welcome your recommendations for plants to include in this landscape, as this will become a place for everyone in the community to feel welcome and at home.

Cultural aspects of the rural center will include the landscape elements, as well as cultural educational signage, cultural art, and places for cultural gatherings and performance. The location for gathering and performance is within the village green gathering place along the makai area of the property. There is no specific hālau scheduled for performances at this early point in time. Local families associated with the businesses and employees of the rural center will undoubtedly be interested in these opportunities. The Pūpūkea and Sunset Beach community also has many talented artists and musicians who may want to participate in gatherings and events at the rural center. These are enriching aspects of the rural center that will bring the community together and strengthen 'ohana.

Comment: *8.10 Page 2-5: Culture and Sustainability: The DEIS states that "Principles of sustainability are integrated" into the Project.*

Q: Will HP commit to achieving a high level of green building design for the Project equivalent to USGBC LEED Silver or Gold? If so, then please indicate this in the DEIS. If not, why not?

Response: Sustainable design is part of everyday practice, particularly for the owners, who are solar industry leaders, and their architect-planner-engineer consultant team. There has been no decision on seeking LEED certification of the buildings, however, many sustainability elements and features are integrated and supported with the project, such as sensitive building siting, use of recycled materials, energy efficiency, natural ventilation, native plants, water conservation, renewable energy, and multi-modal transportation.

Comment: *8.11 Page 3-46: The DEIS states that HP is committed to non-polystyrene food containers for its operations.*

Comment: This is commendable.

Q: Is this the current policy of HP for its vendors or is HP currently allowing vendors to use polystyrene containers?

Q: Will HP also commit to operating "plastic free" for all operations at the Project? See https://www.kokuahawaiifoundation.org/pfh

Response: Mahalo for your supportive remarks. The owners cannot commit to operating plastic free but will commit to work with vendors to emphasize the objective to minimize the use of plastic at the rural center, and the containment of commercial waste on the grounds.

Comment: *8.12 Page 2-10: The DEIS indicates that the "community gathering place" is "anchored" by "Hawaiian settlement and stewardship of resources."*

Comment: This appears to be unfortunate "brown-washing" of this commercial development.

Q: What is the connection between the "central" area and "Hawaiian settlement and stewardship of resources?"

8.13 Page 2-6: The DEIS refers to "park-like," "community gathering place," or "green space" numerous times in the document. (See, for example, p. 1-20, 2-10, 2-14, 3-52)

Comment: These "green washing" terms should be deleted throughout the document as inappropriate for what is essentially and primarily a shopping center, with a very small green area located between potentially eight food trucks and a few feet away from a very busy two (or three-lane) highway and sandwiched between a restaurant and a retail outlet. Call a duck a duck.

Response: The rural center presents an opportunity to create a true community gathering place with an authentic connection to culture and the environment. As noted by MPW, this unique location provides a special opportunity to bring together culture, environment and community. Concepts for cultural and environmental education continue to be developed during the planning process.

Comment:*8.14 Page 2-7: Figure 2-3 Conceptual Site Plan.*

Comment: There are numerous problems with this Figure that need to be clarified or corrected, including:

(a) the location of the bathrooms,
(b) the location of any mini-bus or full-size bus parking,
(c) the size of the "Central Green,"
(d) the clear identification of the parking spaces on the makai portion of the property,
(e) the width of the internal driveways and pathways,
(f) the location of the dumpsters,
(g) the loading and unloading zones for delivery trucks,
(h) ADA parking stalls,
(i) the location of the 8 potential food trucks and the seating or outside service areas,
(j) the location of the proposed new bus stops,
(k) the lost parking stalls in the Foodland parking lot in the two new internal connection driveway areas,
(l) the two- v. one-story nature of each building,
(m) the location of the wastewater treatment plant,
(n) whether parking will be added over the Foodland leach field, and
(o) the dimensions of the highway modifications (turn lane, relocated shoulders, sidewalk, bus stops, and bus turnouts).

Response: Thank you for providing the above-listed items and requesting more specific identification with notations to the concept site plan. Each of the requested items are provided in scaled drawings in the Final EIS and appendices. The SMA Use Permit application requires more detailed scaled plans.

A concise response is provided to each point below:

(a) location of the public restrooms
Mauka end of North Building
(b) location of any mini-bus or fullsize bus parking
No bus parking is provided
(c) size of the "Central Green,"
Roughly 0.5 acre, over 40,000 SF with plaza
(d) identification of parking spaces on the makai portion of the property
see Final EIS Figure 3-8
(e) width of the internal driveways and pathways,
Min. 24 ft. driveway, 6 ft. paths
(f) location of the dumpsters,
Mauka end of North Building
(g) loading and unloading zones for delivery trucks,
Mauka end of North Building
(h) ADA parking stalls,
As identified on Figure 3-8 in the Final EIS
(i) the location of the 8 potential food trucks and the seating or outside service areas,
Six food trucks are located on Figure 2-6, as revised in the Final EIS
(j) location of the proposed new bus stops,

Bus stop on highway at Foodland to be finalized with input from City Department of Transportation Services

(k) lost parking stalls in the Foodland parking lot in the two-new internal connection driveway areas,

Seven (7) additional parking spaces are anticipated to be added in the Foodland lot

(l) two- v. one-story nature of each building,

All buildings to be two-story except Ocean Sports (Section 2.4 and Figure 2-4 of the EIS).

(m) location of the wastewater treatment plant

WWTP at SE Corner of site (added Figure 3-9 to the Final EIS).

(n) whether parking will be over the Foodland leach field

Parking on all leach fields, with access for maintenance of the systems.

(o) dimensions of the highway modifications (turn lane, relocated shoulders, sidewalk, bus stops, and bus turnouts).

Design plans in progress; decisions to be made with agency input.

Comment: *8.15 Page 2-9: The DEIS lists several possible businesses as lessees.*

Q: What binds HP to make good on its promises to lease to these kinds of businesses? Is HP willing to enter into covenants and conditions to the SMA that will make these kinds of commitments binding?

Response: The owners of the rural center have prioritized local Hawai'i based businesses for the leasing of tenant spaces, particularly those with North Shore roots. The specific businesses committed with letter of intent for the rural center include Waialua Federal Credit Union, Island Urgent Care, North Shore Surf Shop, Seamaids, The Spot, North Shore Tacos and others are in discussion. These are all Hawaii based enterprises, with some from the North Shore community.

Comment: *Q: Do one or both of the owners still own business names for cannabis dispensaries, such as The North Shore Dispensary (registered 2015 by Andrew Yani), The Hot House (registered 2015 by Andrew Yani)?*

Q: Will the owners commit to not opening a dispensary at the project site?

Response: The owners will commit to not opening a cannabis/medical marijuana dispensary at the rural center.

Comment: *8.16 Page 3-32 provides further detail on the potential businesses including Waialua Federal Credit Union.*

Q: Are the services of the Waialua Credit Union open to only credit union members or to all members of the public?

Response: The Waialua Federal Credit Union is primarily organized to service its members, many of which live in the Sunset Beach and Pūpūkea community. Specific questions on membership and services can be answered directly by WFCU at tel. (808) 637-5980 or stop by their current location at 67-292 Goodale Avenue, Suite A2 in Waialua.

Comment: *Q: Which kinds of "local community/environmental organizations" does HP have in mind for tenancy and would the fees for the space be charged at commercial rates?*

Response: The owners would like for local community/environmental organizations to become part of the rural center. Rates for community-based tenants will be discounted below standard commercial rates, with specific rates yet to be set. The owners would be pleased to discuss these opportunities with prospective community organization tenants.

Comment: *Q: With the full-service bar, and the required liquor license, how will excessive drinking by patrons be controlled?*

Response: The restaurant tenant will be required to manage the full-service bar as part of the required liquor license. Management policies will include measures for identifying and managing the potential excessive consumption by patrons.

Comment: *8.17 Page 2-10: The DEIS states a height limit of 40 feet for the two-story building and 25 feet for the one-story building.*

Q: What is the legal basis for the height limits indicated and is there is a maximum height limit that applies to the Project?

Response: The City and County of Honolulu Land Use Ordinance defines height limits for commercial zoning districts, which is 40 feet for the subject properties.

Comment: *8.18 Page 2-11: Figure 2-4: The figure indicates approximately 26 mature coconut trees that appear to block the views from the second stories of the buildings.*

Q: Is HP committed to the cost, risk, and maintenance of the coconut trees as represented in this Figure? Comment: If not, then the Figure needs to be redrawn realistically.

Response: The owners are responsible for maintaining the landscape plantings on the rural center property.

Comment: *8.19 Page 2-12, Figure 2-5: The figure indicates a boy playing soccer and children playing with a dog in the "green" area.*

Q: Has HP assessed the safety risk of such activities within close proximity to what could be a three-lane highway with no fencing or other kind of barrier between patrons or activities in this area? What will HP do protect the safety of children and others using this area?

Response: The open space areas on the property, its landscape, walkways and parking areas will be properly designed to address the safety consideration for people enjoying the rural center.

Comment: *Q: The figure appears to indicate several cars parked in the "Central Green" – is this accurate? If so, how many cars can be parked in this area?*

Response: There are parking spaces adjacent to the Central Green located in the plaza area along a one-way drive, which provides 8 parking spaces on the makai side and 11 parking spaces on the mauka side.

Comment: *8.20 Page 2-13, Figure 2.6: The figure shows seven small dots as possible food truck locations.*

Comment: The potential location of the eight food trucks (the number of which was presented by G70 at the North Shore Neighborhood Board meeting and at page 271) is not well indicated on this drawing, which shows single dots over a single parking stall and, in the earlier Figure 2-5, at most, one yellow food truck. MPW has attached a more realistic sketch of the areas needed by the eight food trucks that could be located in this area. See Attachment A.

Response: The owners are reducing the number of food trucks in the rural center plan from eight to six food trucks. The potential for siting up to six food trucks on the property is shown in an updated site plan, depicting the locations within designated parking spaces. The food truck locations shown in the attachment you provided are not correct; no parking will be allowed on the central green.

Comment: *8.21 Page 2-13: The DEIS states "[t]here will be no access to or from the privately owned Pāhoe Road."*

Q: Is HP willing to make this commitment a binding condition or covenant to its SMA permit? If not, why not?

Response: There will be no regular access to the project site from Pāhoe Road, and the owners will commit to this condition. A gate on the property boundary with Pāhoe Road will allow for emergency access to/from the property, and periodic maintenance access.

Comment: *8.22 Page 2-14: The DEIS states that average daily water consumption will be approximately 8,160 gpd. A few paragraphs later, the DEIS states that "[t]he total anticipated net increase in wastewater flow is estimated to be 6,920 gpd."*

Q: How can these two different numbers for input and output be reconciled as accurate? Does the wastewater number account for the end result of the service of fountain or bottle drinks to patrons, brought on site by vendors, which could mean hundreds if not thousands of gallons a day of wastewater through use of the restrooms on site?

Response: Accepted environmental engineering practice and State DOH standards calculate on-site wastewater generation at approximately 80% of average daily water consumption, which is 6,528 GPD. The net increase in wastewater flow is beyond the current 400 gpd flow (*Section 3.16.1*).

The wastewater system is sized, per DOH standards, for patrons of the restaurant, offices, and businesses. Transient users, such as those who may patronize the food trucks, are also counted in the system design to ensure sufficient capacity (*Table 3* in *Appendix H).* Low flow fixtures and water saving measures will minimize water usage. The design and operation of

the wastewater system requires rigorous review by the State DOH and its official approval, with ongoing monitoring and reporting requirements.

Comment: *8.23 Page 2-16, Project Schedule and Costs.*

Comment: The project schedule is clearly inaccurate given that the EIS has not been completed in "Winter 2017." Most likely, the EIS will not be completed, if at all, until 2018 or 2019. With the usual schedule overruns that occur for project in Hawai'i, particularly where there is strong community opposition, the entire schedule should be corrected to extend the likely completion date to 2025 or 2030.

Response: Acceptance of the Final EIS is currently anticipated in the 2nd quarter of 2018, with SMA Use Permit approval by late 2018. The design and permitting stage will follow in 2019, with construction planned to start in 2020, with estimated completion by late 2021.

Comment: *8.24 Page 2-16: The DEIS states "Construction costs are estimated at a value of $18 M."*

Q: What is the basis of the cost estimate? Who will bear those costs?

Response: The architects, leasing agents and professional cost estimators collaborated on the estimate of construction costs. The owners are financing the project.

Comment: *8.25 Page 3-16: The DEIS states that the wastewater treatment system will be approved by DOH Waste Water Branch. At Page 3-43, the DEIS indicates that pathogens will be treated.*

Q: Will the Waste Water Treatment System (WWTS) use disinfection? If so, what kind?

Comment: UV is the preferred type of disinfection given the potential impact of chlorine on the groundwater and marine environment.

Response: Should the State DOH recommend the wastewater treatment system include disinfection, we agree that the preferred system to install would be UV disinfection.

Comment: *8.26 Page 3-18: The DEIS discusses storm water management and BMPs.*

Q: Will HP publicly disclose, in a timely and freely accessible manner, all of the information about plans and implementation of storm water management and BMPs for this Project, in perpetuity?

Response: The storm water management system design plans and BMPs will be part of the Grading Permit and NPDES Permit applications and resulting permit records. The owners are committed to maintaining a perfect record of environmental compliance, and a tight ongoing relationship with the community, including addressing future concerns about storm water management practices.

Comment: *8.27 Page 3-20, Figure 3-5:*

Q: What is the "Parking Court"? What is the location of the LID such as bioswales and drainage areas in relation to the "lawn" and pedestrian accessible areas? Has HP assessed the hazard of having accessible uneven surface and drainage features in these areas?

Response: There are parking spaces adjacent to the Central Green located in the plaza area along a one-way drive, including a "Parking Court" which provides 8 parking spaces on the makai side and 12 parking spaces on the mauka side. The LID and bioswales are positioned along the north and south sides of the Mauka building. The roadway/plaza paving conditions must be reviewed and approved by the City for site development. See *Figure 3-5* of the EIS.

Comment: *Q: What is "renaturalized lava" and what is the source of these lava rocks?*

Response: The renaturalized lava stones are small aʻa pieces which will be sourced from an Oʻahu aggregate material business. This material is suitable for the ground surface treatment above the storm water collection and storage basin located along the makai edge of the property.

Comment: *8.28 Page 3-42: The DEIS indicates current electrical demand and mentions the food trucks.*

Q: Are the food trucks currently connected to electrical utilities on the site? If so, is this permitted under City and State law?

Response: The electrical system will be designed and constructed to the Electrical Code. Operational connections by the food trucks will part of the design and code review for permit approval.

8.29 Page 3-43: The DEIS discussed the on-site WWTS.

Q: What is the top and bottom depth from the normal soil surface of the absorption beds?

Response: The depth of the absorption beds is approximately five to six feet. To ensure permeable soil contact, a minimum of three feet at the bottom of the absorption bed will be over-excavated and replaced with granular material.

Comment: *8.30 Page 3-43: The DEIS indicates that "up to eight mobile food trucks" will be connected to the WWTS.*

Q: Do DOH regulations allow the connection of mobile food trucks to a WWTS?

The DEIS then states "[t]he trucks will not be connected to, not utilize, the on-site wastewater treatment system."

Comment: If this is correct, then the prior sentence needs to be corrected and clarified.

Response: The DOH regulations do not allow for food trucks to connect to the on-site wastewater collection system. The reading of the paragraph may have been confusing, where it is stated in *Section 3.16.2* p 3-43 par 4: "[t]he wastewater and parking capacity are sized to

support up to eight mobile food trucks, their patrons and employees." There will be no connection to the wastewater system, but patrons of the food trucks can use the restroom. The sentence in the section has been revised in the Final EIS.

Q: Will HP commit, as a condition or covenant of its SMA permit, to not connect the mobile food trucks to its WWTS? MPW notes that HP requested that the 2017/SMA-21 allows food truck connection to the existing ATU, which contradicts the promise HP in making in the DEIS now.

Response: The DOH regulations do not allow for food trucks to connect to the on-site wastewater collection system. There was no request to connect food trucks to the on-site ATU system as part of the 2017/SMA-21. The existing commissary located in an existing building on site that supports one food truck is connected to the permitted individual wastewater system approved for the current operations. The proposed action will remove and replace these systems.

Comment: *8.32 Page 3-45: The DEIS discusses the production of the PV system at 526,000 kilowatt hours annually. Later, at Page 3-56, the DEIS estimates 560,000 kv/yr of PV.*

Q: Which number is correct?

Response: The onsite photovoltaic system is projected to generate 526,000 kilowatt hours (kWh) annually. Thank you for noting this error in *Section 3.18.4*; it has been corrected in the Final EIS.

Q: Is this an estimate of total capacity or of actual likely production under real conditions at the site? HP may not realize that PV usually does not perform at its rated capacity so this distinction is important to an accurate picture of the actual contribution of the system.

Q: With the PV system, even at its rated capacity, what is the total annual net power demand of the Project?

Response: The onsite photovoltaic system is projected to generate 526,000 kilowatt hours (kWh) annually. The onsite PV system power generation will satisfy approximately one-third of the electrical power demand, projected at 4,000 kWh per day (*Section 3.16.2*).

Comment: *8.33 Page 3.46: The DEIS describes "large iron woods trees along the highway."*

Comment: HP or its tenants, presumably so its customers can have a better view of the ocean, have cut these ironwoods severely in recent years to the point that they look like stumps. Please update this information to be more accurate.

Response: Thank you for clarifying the status of the tree trimming along the highway frontage. Several ironwood trees remain along the southern half of the property frontage. The Conceptual Site Plan (

Comment: *8.34 Page 3-47, Figure 3-8.*

Comment: This figure is an outdated photo. It shows a highly vegetated lot, which is not currently the property condition.

8.35 Pages 3-48 and 3-50, Figures 3-9 series.

Q: What are the dates of all of these photos? Some of these photos are very old and do not accurately reflect the condition of the property.

Response: The site photos are from 2017.

Comment: *Q: In Figure 3-9A, what is the "fuzzed out" photo-shopped blocking in front of the Seamaids retail shop?*

Response: This photo has the former shave ice machine blocked out.

Comment: *Q: Was Figure 3-9C below the walking path on the beach? It does not appear to have been taken at the level of the Highway or the rock wall where most pedestrians walk.*

Response: This site photo is taken on a steep angle view toward the property.

Comment: *8.36 Page 3-52: The DEIS references the Master Plan for Pūpūkea Beach Park.*

Q: Did anyone from HP participate in the process of development of the Master Plan? Did HP or its consultants study the Master Plan in terms of connected and cumulative impacts to parking, recreation, bathrooms, pathway use and over-use, or other facilities? If not, why not? Is HP willing to contribute to major capital improvements needed as part of the Master Plan?

Q: Where in the DEIS does HP analyze the impacts of the Project on recreational use of the Beach Park?

Response: The owners did not participate in the Pūpūkea Beach Park Master Plan process. The City Parks Department was consulted in the EISPN and Draft EIS review process. The Parks Department does not believe the project will affect the beach park since the rural center will provide adequate on-site parking and restroom facilities per LUO requirements. The owners are interested in the future of the beach park and ongoing community efforts to improve and maintain this park.

Comment: *8.37 Page 3-56: The DEIS references irreversible and irretrievable commitment of resources.*

Comment: The DEIS has misconstrued the meaning of the terms "irreversible and irretrievable commitment of resources." The primary commitment that is "irreversible and irretrievable commitment of resources" is the development of the property itself by this Project. Once this property is developed, it will not be undone. Development in Hawai'i only goes one way – toward density and growth of traffic, tourism, and impacts. Thus, the DEIS should acknowledge that the Project itself will forever permanently alter these lots and that represents an "irreversible and irretrievable commitment of resources" for the community.

Response: The Pūpūkea Rural Community Commercial Center will be developed in a manner that is consistent with the City/County and North Shore community's expressed long-range planning policies as envisioned in the NS Sustainable Communities Plan. The irreversible and irretrievable commitment of resources should be weighed against the greater access to goods and services including medical care, and additional job opportunities in the Pūpūkea-Sunset Beach communities that may reduce vehicle trips for some area residents.

Comment: *8.38 Page 3-56: The DEIS refers to adverse environmental effects.*

Q: Will HP commit to a transparent and robust monitoring system, in perpetuity, that will provide timely information about the groundwater and surface water run off impacts of this Project? Will HP commit to mitigation measures if effects are indicated at levels above acceptable federal, state, or county limits or beyond that projected in the DEIS?

Response: The owners will be tied to specific conditions and requirements under the SMA Use Permit, and numerous construction and operational permits. These approvals are listed in the EIS at Table 1-1, and include the Grading Permit, NPDES Permit, Building Permit, and approvals for the highway driveway connection and wastewater system operations. There are monitoring requirements associated with several of these approvals.

Comment: *8.39 Pages 4-3 through 4-71.*

Comment: This entire section appears to be a very biased review of the applicable standards and plans. Often checkmarks appear to be almost randomly made, or made without support, and never is a negative effect indicated. This is simply unintelligible and must be revised with clear supporting data, not just assertions.

Response: Your comment did not indicate that there are conclusions which you felt are incorrect. As preparers, we effort to provide the EIS reader with the full scope of government plans and policies. The EIS Section 4.0 presents a concise listing of this information, along with the consistency/inconsistency/non-applicability of the proposed action with these plans and policies. Granted, we acknowledge that this Section presents a large amount of written information, and thus we make our best effort to consolidate the material in a presentation form that is both readable and meets the requirements of disclosure under Chapter 25 ROH, Chapter 343 HRS and Title 11-200 HAR.

Comment: *8.40 Page 1-9: "contemplates only minimal improvements to the Foodland parcel"*

Q: Has Foodland approved these improvements? Internal traffic circulation within the Foodland parking lot is very poor and hazardous; how will the project affect that internal traffic pattern and safety risk to shoppers and drivers?

Response: The Sullivan Family has reviewed and approved the improvements shown in the EIS. Parking lot restriping and driveway modifications are expected to improve circulation at the Foodland parcel. The letter of support for the project is contained in the Final EIS Chapter 6 with comments provided on the Draft EIS.

Comment: Page 1-10: The DEIS correctly includes the Foodland parcel as part of the integrated project site. This integrated review is required by HRS Chapter 343 and by the Joint Development Agreement.

Response: The inclusion of the Sullivan family property at Foodland is required under the 1978 Development Agreement. The modifications to the Foodland parcel and adjoining public rights-of-way are part of the proposed action as addressed in this EIS.

Comment: *8.41 Page 1-9: "Hanapohaku acquired its land in 2014 to retain local ownership of an important commercial property to provide goods and services . . . ."*

Q: What restrictions are placed on, or is HP willing to place on, its ability to resell the property at any time to another buyer who might not be "local"?

Response: The owners have not intention to sell the rural center property but are not willing to foreclose their future rights to resell the property.

Comment: *8.42 Page 1-9: "The owners are committed to pursuing Hawai'i-based businesses as tenants of the center." This promise is repeated at Page 3-32.*

Q: What restrictions are placed on, or is HP willing to place on, its ability to lease space to "Hawai'i-based" tenants? What is the definition HP is using of "Hawai'i-based businesses"?

Page 1-9: "The types of businesses and services may include . . . ."

Q: What restrictions are placed on, or is HP willing to place on, its ability to lease only to these kinds of businesses and services? Do one or both of the owners still own business names for cannabis dispensaries, such as The North Shore Dispensary (registered 2015 by Andrew Yani), The Hot House (registered 2015 by Andrew Yani)? Will the owners commit to not opening a dispensary at the project site?

Response: The same comments were responded to earlier in this letter. The owners will commit to not opening a cannabis dispensary at this property.

The owners of the rural center have prioritized local Hawai'i-based businesses for the leasing of tenant spaces, particularly those with North Shore roots. The specific businesses committed with letter of intent for the rural center include Waialua Federal Credit Union, Island Urgent Care, North Shore Surf Shop, Seamaids, The Spot, North Shore Tacos and others are in discussion. These are all Hawai'i-based enterprises, with some from the North Shore community.

Comment: *8.44 Page 1-20 Park-Community Center: DEIS references a "park-like space," a "central green landscaped area," "a community gathering place," yet it mentions that the food trucks "can utilize the hardscaped area adjacent to the central green," and that "[v]ehicle access will be restricted from the hardscape during some periods to allow for pedestrian-friendly community gatherings and cultural events such as art shows, farmer's markets and dance performances."*

Q: Please provide the dimension of the spaces mentioned, both landscaped "lawn" and the "hardscaped" area that might be closed off for events? What is the distance between these areas and Kamehameha Highway?

How will user safety be assured given the proximity to the highway? How will the sound of two or three lanes of traffic be attenuated to allow usage of these areas?

Response: These same comments were responded to previously in this letter. This is a significant open space area with nearly 0.5 acre of landscaped open space in the front area, connected to another 0.5 acre of plaza space. Together these areas will create a lively public venue for informal engagement, community gatherings, festivals and events, along with commercial support uses. There is limited parking along a one-way drive, with the option of closing off this area to regular traffic during events.

Comment: *8.45 Page 1-10: DEIS references the FAR as "25 percent of the floor area ratio (FAR) allows for this property under the City Land Use Ordinance."*

Q: Does that statement take into account the restricted design elements in the UA? In other words, given the restriction to one- and two-story buildings, is the FAR still 25%?

Response: The 1.0 FAR allowed under B-1 zoning would allow for development of over 100,000 SF of commercial floor area on the subject properties, with the calculated maximum floor area of 117,443 SF. The full development scenarios could be design in two story buildings with underground parking for maximum use of this site. This large-scale use would not be appropriate for the property. A much more appropriate scale for the rural center is FAR 0.25, which is compatible with the adjoining Foodland site (0.294 FAR).

Comment: *8.46 Page 1-10: The DEIS mentions "utilize sustainable building materials" but does not indicate that the project will adhere to any particular sustain green building standards such as LEED or equivalent. Q: Please specify the goal and standards for sustainability building design for this project.*

Response: These same comments were responded to previously in this letter. Sustainable design is part of everyday practice for the owners, who are solar industry leaders, and their architect-planner-engineer consultant team. There has been no decision on seeking LEED certification of the buildings, however, many of the sustainability elements and features are integrated and supported with the project, such as sensitive building siting, use of recycled materials, energy efficiency, natural ventilation, native plants, water conservation, renewable energy, and multi-modal transportation.

Comment: *8.47 Page 1-11: The project cost is estimated at $17.8 million.*

Q: Please provide a breakdown of that cost estimate? Does it include improvements on properties not owned by HP?

Response: Project costs are estimated at $17.8 M including on-site and off-site work.

Comment: *8.48 Page 1-11: The GET is estimated at $103,664.*

Q: What is the breakdown of the estimated annual revenue on which this number is based?

Response: The projection of HI GET is based on $3.132 M annualized revenues.

Comment: *8.49 Page 1-11: The County property tax is estimated to be $187,500.*

Q: What is the underlying assessed value of the three parcels upon which this estimate is based?

Response: The correct estimate of County Real Property Tax is $148,600, as shown in the EIS *Section 3.11.2*. This is based on a projected Net Taxable Value of $11.98 M.

Comment: *9. HP's Proposed Development Will Not Serve the Needs of the North Shore Community*

9.1 Page 1-11: The reference to B-2 Neighborhood Business District should provide a complete statement of the requirements, which are:

B-1 Business - Neighborhood

The intent of the B-1 neighborhood business district is to provide relatively small areas that serve the daily retail and other business needs of the surrounding population. It is intended that this district be generally applied to areas within or adjacent to urban residential areas, along local and collector streets, but not along major travel routes or on a large-scale basis. It would also be applied to rural and urban fringe town centers, which may or may not be located along major travel routes. (Taken from Land Use Ordinance, May 1999, Sec. 21-3.110(b)) (emphasis added).

9.2 Page 1-11: Because in the past HP has selectively quoted the North Shore Sustainable Communities Plan (SCP) in public meetings, including dropping the word "primarily" that is underlined below, the DEIS should quote the entire SCP provisions regarding a Rural Community Commercial Center:

"Both the rural community commercial center and country stores emphasize convenient and essential services to meet the needs of the surrounding community." (Emphasis added.)

"3.6.3 Rural Community Commercial Center

The rural community commercial center is a small cluster of commercial and service businesses located on major thoroughfares that provide a range of goods and services to meet the needs of the surrounding residential communities. Located along highways and major thoroughfares, these centers also attract visitors and residents from outside the immediate community. Commercial establishments may include grocery stores, sundries stores, restaurants and other services and shops catering to residents and visitors to the region. They are generally one- and two story in height and equivalent in size to neighborhood grocery stores. With fewer business establishments and services than a country town, the rural community commercial center typically covers less land area and has less commercial floor area than a country town. The area between the existing Foodland market and the adjacent commercially zoned properties between Pūpūkea Road and Pāhoe Road is designated as a Rural Community Commercial Center."

9.3 Comment: As referenced above, the North Shore Sustainable Communities Plan's definition of Rural Community Commercial Center requires that development of these parcels be "small cluster" and "meet the needs of the surrounding residential communities." The proposed development exceeds the "small cluster" level because – through buildings, parking lots, roadways, and food trucks – it takes up nearly all empty space on the three parcels. The sprawl of this development is not small. The total proposed gross floor area is 30,000 (Page 1-10). This number, however, is a substantial under-estimate of the footprint because the DEIS does not provide information about the total footprint of the development from the proposed paved parking lots, paved roadways, drainage systems, and the eight food trucks (with associated tables, chairs, decks, walkways, and spillover equipment areas).

Response: The NSSPC also states: "The rural community commercial center . . . located on major thoroughfares. . . are generally one- and two-story in height and equivalent in size to neighborhood grocery stores . . . with fewer business establishments and services than a country town. . . typically covers less commercial floor area than a country town." A country town land use designation in the NSSCP is defined as "the two primary country town districts on the North Shore: Hale'iwa and Waialua. The rural community commercial center is close in scale to the neighboring Foodland, and has a lower FAR.

Further, the NSSCP acknowledges that rural community commercial centers, while primarily to "meet the needs of the surrounding residential communities," it also will "attract visitors and residents from outside the immediate community." The single rural community commercial center identified for the North Shore includes the parcels owned by Hanapohaku and the existing Foodland grocery store.

Comment: *9.4 Comment: HP's DEIS violates the spirit and letter of the NSSCP because it does not cater to "the needs of the surrounding residential communities." Instead, HP proposes a commercial center that is focused on attracting tourists and non-residential customers.*

Response: See previous response.

Comment: *9.5 Comment: As stated above, while HP may claim that they will rent to local businesses with local owners, and cater to local residents, this is an illusory promise. HP is not going to be bound to do any catering to local needs once the development is completed. All of the retail units can, and likely will be, flipped to high-traffic tourism-focused businesses on a dime. HP owners have demonstrated over the past two years a propensity to kapakahi commercial activity with hundreds if not thousands of tourists a day (far outweighing resident customers).*

MPW is deeply concerned about the true purpose and nature of HP's proposed Pūpūkea commercial mall development – euphemistically dubbed the "Rural Community Commercial Center" – and how it will become a magnet for major increases in tourism and traffic in our quiet community. This development is not a community center and should not be called a community center any more than Foodland. Our community already has the Pūpūkea Recreational Center, only .5 miles North along Kamehameha Highway, which has place for meetings, cultural events, and recreational activities, and the park at Sunset Beach Elementary School, which hosts a playground, exercise and parent classes, a gathering pavilion, and local crafts farmers market. HP's development is, plain and simple, a commercial shopping mall that is likely to turn into a "Sharks Cove Tourist Trap." The very small "green" along the front of the development,

particularly when surrounded by parking and food trucks, and within only a few feet of three lanes of busy highway, is not a community center, a place for family recreation, or a culturally grounded gathering plane. Picnic tables and occasional music performances will be for tourists, not locals. This commercial development should, therefore, be recognized and labeled as what it truly will become – the Sharks Cove Commercial Mall for Tourists – not what conveniently looks and sounds benign in an DEIS.

Conclusion: The proposed Project will attract more tourism, more traffic, and more pollution to this small sensitive area resulting in major impacts to the Pūpūkea community and environment. The serious flaws in the procedure and content of the DEIS outline in our comments require that the process be started fresh, with a new EISPN, then new DEIS, and full compliance with HRS Chapter 343.

Mahalo for the opportunity to comment on the DEIS.

Response: The owners have taken great strides to engage a qualified professional team to listen closely to the community and design a project which is consistent with the NSSCP policies and objectives for the Rural Community Commercial Center. It is recognized from your comments that the project brings concerns about the scale and type of development. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. We welcome your continued involvement in this planning process, as it is this community's care and attention to good planning helps to retain the special qualities that we all share in common.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

MĀLAMA PŪPŪKEA-WAIMEA
PROTECTING OUR OCEAN'S RESOURCES

Mālama Pūpūkea-Waimea
Post Office Box 188
Hale'iwa, HI 96712

Board of Directors

Denise Antolini
Colette Coty
John Cutting
Bob Leinau
Laura Parsons
Jim Parsons

Advisory Council

Athline Clark
Dr. Alan Friedlander
Debbie Gowensmith
Bill Quinlan
Palakiko Yagodich

Staff

Maxx Elizabeth Phillips, Managing Director
Jenny Yagodich, Director of Educational Programs & Community Outreach

Federal Nonprofit Organization
501(c)(3) FEIN 27-0855937
www.pupukeawaimea.org

January 8, 2018

Ardis Shaw-Kim, (808) 768-8021, ashaw@honolulu.gov
Jeff Overton, AICP LEED AP, (808) 523-5866, pupukea@g70.design

Re: Pūpūkea Rural Community Commercial Center DEIS –
MPW Expert Tom Brohard's Comments on the TIAR

Dear Ms. Shaw-Kim and Mr. Overton:

Mālama Pūpūkea-Waimea (MPW) submits these comments from our traffic expert Tom Brohard regarding the TIAR. He concludes:

"In sum, the November 2017 DEIS for the proposed Pupukea Rural Community Commercial Center is seriously flawed as it does not provide an adequate assessment of traffic impacts on the adjacent roadway segments and intersections. As explained in detail throughout this letter, many of the assumptions and conclusions in the TIAR are not supported by proper documentation and substantial evidence. Errors in the TIAR methodology include faulty trip generation calculations based on superseded, outdated information. Further study of these and the other issues identified in this letter is required as part of a Recirculated DEIS for the Proposed Project."

These comments are submitted in addition to MPW's detailed comments emailed January 8, 2018 regarding the other serious errors and insufficiencies of the Pūpūkea Rural Community Commercial Center DEIS.

Sincerely,

Denise Antolini
President

Cc: Maxx E. Phillips

Attachments:
Letter from Tom Brohard to Denise Antolini, Jan. 7, 2018
Enclosures 01-07 to the Brohard Letter

Tom Brohard and Associates

January 7, 2018

Denise Antolini, President
Malama Pupukea-Waimea
Post Office Box 188
Haleiwa, Hawaii 96712

SUBJECT: Pupukea Rural Community Commercial Center Draft Environmental Impact Statement (DEIS) – Traffic – Findings and Comments

Dear Ms. Antolini:

At your request on behalf of Malama Pupukea-Waimea (MPW) and as you authorized, I have reviewed the traffic and transportation portions of the November 2017 Pupukea Rural Community Commercial Center Draft Environmental Impact Statement (DEIS) prepared by G70. In preparing my findings and comments, I have reviewed the following sections and appendices related to traffic and transportation for the Proposed Project:

- Chapter 1 – Project Summary
- Chapter 2 – Project Description
- Chapter 3.13 – Environmental Setting, Probable Impacts, and Recommended Mitigation - Traffic
- Appendix F – July 25, 2017 Transportation Impact Analysis Report (TIAR) prepared by Fehr & Peers
- TIAR Appendices A through D (TIAR Appendices)

In sum, the November 2017 DEIS for the proposed Pupukea Rural Community Commercial Center is seriously flawed as it does not provide an adequate assessment of traffic impacts on the adjacent roadway segments and intersections. As explained in detail throughout this letter, many of the assumptions and conclusions in the TIAR are not supported by proper documentation and substantial evidence. Errors in the TIAR methodology include faulty trip generation calculations based on superseded, outdated information. Further study of these and the other issues identified in this letter is required as part of a Recirculated DEIS for the Proposed Project.

Education and Experience

Since receiving a Bachelor of Science in Engineering from Duke University in Durham, North Carolina in 1969, I have gained over 45 years of professional engineering experience. I am licensed as a Professional Civil Engineer both in Hawaii and California, and as a Professional Traffic Engineer in California. I

81905 Mountain View Lane, La Quinta, California 92253-7611
Phone (760) 398-8885 Fax: (760) 398-8897
Email tbrohard@earthlink.net

formed Tom Brohard and Associates in 2000 and now serve as the City Traffic Engineer for the City of Indio and as Consulting Transportation Engineer for the City of San Fernando. I have extensive experience in traffic engineering and transportation planning. During my career in both the public and private sectors, I have reviewed many environmental documents and traffic studies, with only a few of these listed in the enclosed resume (see Enclosure 1). In addition, on behalf of Keep the North Shore Country, I have also reviewed all prior Traffic Impact Analysis Reports, Updates and Addendums prepared between 1985 and 2009 for the community's review of the Turtle Bay Resort EISs.

Traffic and Transportation Issues/Concerns – Findings and Comments

Based on the information provided in the November 2017 DEIS and July 25, 2017 TIAR, my review disclosed a number of serious issues and concerns relating to traffic and transportation. Each of the following findings and comments must be addressed through further study and modifications to the DEIS and TIAR, together with recirculation of these documents for public review and comment:

1) TIAR Must Be Signed and Stamped by a Civil Engineer Licensed in Hawaii - Fehr & Peers, the firm that performed the TIAR for the DEIS, is a transportation engineering firm with offices throughout the Western United States. On their website at http://www.fehrandpeers.com/contactus/, the firm also shows an office at 500 Ala Moana Boulevard, Suite 7-400 in Honolulu. According to Maxx Phillips, Managing Director of Malama Pupukea-Waimea who visited the Honolulu location on December 20, 2017, the "office" is merely a mail drop location and no Fehr & Peers staff work there. The receptionist did not have a contact name or phone number.

   Hawaii Administrative Rules Title 16, Chapter 115 regarding Professional Engineers, Architects, Surveyors, and Landscape Architects published by the Department of Commerce and Consumer Affairs, requires that civil engineering works be directly controlled and personally supervised by an engineer licensed in Hawaii (see Enclosure 2). As a reviewer of civil engineering works prepared by others, I too am required to be licensed as a civil engineer in Hawaii.

   The Professional and Vocational Licensing Division (PVL) of the Department of Commerce and Consumer Affairs licenses individuals but is not able to identify members of firms who are licensed in Hawaii. As a result, I cannot determine if this TIAR was prepared under the direction of a civil engineer licensed in Hawaii. The Rules put forth in Chapter 115 requiring that the TIAR be signed and stamped were not followed by Fehr & Peers.

The purpose of requiring a locally licensed engineer is to ensure the integrity of the information gathered and analyzed. As further indicated below, the TIAR indicates a surprising lack of familiarity with the local conditions along Kamehameha Highway on the North Shore and specifically at Pupukea, which appears to have led to several faulty assumptions and weak analysis in the TIAR and DEIS.

2) Traffic Counts Used in the TIAR May Not Be Properly Factored or Adjusted - The only traffic counts provided in the TIAR Appendix were conducted from Thursday through Saturday, November 17 through 19, 2016. Your email to Jeff Overton at G70 in August 2017 requesting additional traffic counts and documentation and expressing concerns about the validity of the data gathered were not addressed by G70 before the release of the DEIS, in the document itself, or in the TIAR (dated July 25, 2017 but not released until November 23, 2017), which did not include any additional traffic counts.

Page 21 of the TIAR indicates that traffic counts on the two-lane Kamehameha Highway in the area of the Proposed Project vary up and down but the TIAR reaches no conclusion regarding traffic volume trends. Page 24 of the TIAR indicates that it considered historic DOT traffic data "in the study area from 2013, 2014, 2015, and 2016" but does not reference 2017 and does explain or attach any of the reviewed data. Page 24 of the TIAR concludes "the review of these volumes did not reveal a clear trend in the roadway system's growth..." This detailed information, including the definition of "the study area," the precise location of the counts, and the "consideration" or analysis of this data by Fehr & Peers must be included in the DEIS to properly inform the agency and the public on this critical traffic issue.

In response to my recent emails to the Department of Transportation (DOT), I was provided with a number of traffic counts that have been conducted over the last few years (see Enclosure 3). At minimum, these traffic counts should have been used by Fehr & Peers to establish proper seasonal adjustment factors as well as ambient annual growth factors. Best practice would have been for Fehr & Peers to (1) provide historic data from the *same location* as the TIAR traffic counts, and (2) to take a second traffic count during the high season of July-August 2017, before Labor Day Weekend, as requested by Malama Pupukea-Waimea (MPW). Lacking this kind of depth and understanding of local conditions, the data and information presented are an inadequate basis on which to draw sound conclusions.

The 1% annual ambient traffic growth factor used in the TIAR is not supported by count data. Page 23 of the TIAR attempts to support this assumption stating it is "reasonable given the built-out nature of the Pupukea

neighborhood and the limited planned development in the greater North Shore area." Neither of these factors is a valid basis for the 1% assumption.

Data from DOT traffic counts provided to MPW for Pupukea Road from 2014, 2015, and 2016 (Enclosures 4, 5, 6) indicate that peak am traffic is steadily increasing in these recent three years. For example, for the comparable January data in each of these years, the highest three numbers in the 7:30 am and 7:45 am commute periods went from 87-89-90 vehicles (2014) (average 89), to 92-93-93 vehicles (2015) (average 92), to 117-127-135 vehicles (2016) (average 126), roughly a **30%** increase in three years.

According to the DOT counts in Enclosure 3 taken in October 2013 at Sunset Chevron and six months later in April 2014 at Chun's (both of which are during the "low" traffic season, Enclosure 3), a monthly count along the Joseph Leong Bypass indicates April was the second lowest traffic month in 2016 and October was the 6th lowest month. Even so, the growth rate in just that six-month period was **15%** as indicated below:

DOT Count Point	Date	D1+D2	Count Difference	% Difference
Sunset Chevron	Oct. 16-17, 2013	12,910 12,593= **12,751** (average)		
Chun's	Apr. 29-30, 2014	14,835 14,575= **14,701** (average)	**+ 1,950**	**+15.29%**

Although this does not represent the annual growth rate, because the DOT data are not from the same days and months, it does demonstrate that the 1% assumption is likely erroneous and that data collection must be more robust, transparent, and comprehensive to be meaningful for the review of this DEIS.

To establish accurate future baseline conditions at occupancy of the Proposed Project in 2021, five years after the 2016 counts were made, adjustment factors must be properly disclosed and calculated and then added to the baseline traffic volumes to create a proper baseline upon which the Proposed Project traffic volumes can then be added and evaluated.

3) Project Trip Generation Was Not Properly Calculated - Trip generation for the Proposed Project was developed using Trip Generation, 9th Edition published in 2012 by the Institute of Transportation Engineers, ITE. In Summer 2017,

ITE published Trip Generation, 10th Edition, which contains a number of changes and supersedes the 2012 edition. The TIAR must be updated to reflect the following changes and the latest information as follows:

a) Specialty Retail (Old Land Use Code 826 from 2012, 9th Edition) – The TIAR used the trip generation data from this land use code which had lower peak hour and daily trip rates than those for other commercial and retail land uses. The 10th Edition no longer includes trip rates for the "specialty retail" land use. The studies upon which these rates were based have been moved to other land use codes.

   Using Shopping Center (New Land Use Code 820 from 2017, 10th Edition) to calculate revised trip generation forecasts for the Proposed Project will result in higher traffic volumes than were assumed in the TIAR using Specialty Retail. Weekday daily trips for a 30,000-square foot shopping center would be about **2,650 rather than 1,122**, with PM peak hour trips of about 220 rather than 90. Similar increases can be expected on Saturdays for daily and mid-day peak hour trips.

   Thus, by using outdated guidelines and the incorrect code, **the TIAR underestimated trip generation of the project by 57%.** This serious error must be addressed and corrected in a Recirculated DEIS.

b) Food Cart Pod (New Land Use Code 926 in 2017, 10th Edition) – The 10th Edition includes new Land Use Code 926, which has not appeared in prior editions of Trip Generation. This land use is described as "... a group of food carts or food trucks congregated in an established location such as a parking lot on a semi-permanent or regular basis. Food pods typically serve lunch and dinner with lunchtime typically generating the highest volumes of the day. Food cart pods often include limited covered seating or dining area and may include the sale of alcoholic beverages."

   The number of food trucks in the Proposed Project is higher than the five currently using the site. The site plans shown in the documents illustrate as many as seven food trucks whereas Page 6 of the TIAR indicates between four and six food trucks; in a community presentation, as noted by Malama Pupukea-Waimea, I understand G70 projected up to eight food trucks, twice as many as the lower number stated in the TIAR.

   The Fehr & Peers traffic counts taken in November 2016 need to identify the number of food trucks present on the count days as well as all changes in the square footage of the shops that will remain (e.g., real estate, ocean sports, beachwear) to properly support the trip generation estimates and forecasts that were previously used. The TIAR incorrectly dismisses the potential differences in trip generation. Significant trip

   generation errors could be introduced by merely assuming that the number of food trucks and the square footage of the shops that remain will be the same in the "before" and "after" conditions. More detailed and specific calculations are required, not generalities.

c) The Proposed Project Could Create Significant Traffic Impacts – Correcting the trip generation estimates and forecasts as described above could certainly result in significant traffic impacts on Kamehameha Highway at intersections along the frontage of the Proposed Project and at midblock segments. This will require further analysis together with the development of feasible mitigation measures that must be implemented in a timely manner.

4) Lane Geometrics at Project Driveway Are Incorrectly Illustrated - Figures 7, 8, 9, and 10 of the TIAR incorrectly illustrate the number of traffic lanes on Kamehameha Highway at the Proposed Project driveway by showing two southbound through lanes and two northbound through lanes. This is an odd error and highly inaccurate. At this location, Kamehameha Highway has only two lanes. Even under the proposed (but not approved) improvements, only one additional traffic lane would be created. Calculations in the TIAR Appendix do not show the additional lanes for through traffic at the proposed driveway. The figures must be explained and corrected to match the calculations.

5) Vehicle Level of Service Calculations Do Not Match "Real Life" - Table 1 and Table 2 on Page 11 of the TIAR relate the various Level of Service (LOS) descriptions and delays for vehicles at signalized and non-signalized intersections. Table 4 on Page 22 of the TIAR provides the result of calculations using the November 2016 traffic counts, indicating LOS "A" during mid weekday, PM weekday, and Saturday mid-day peak hours.

   Field observations summarized on Page 21 certainly do not support the calculated LOS "A" findings. Statements of "Real Life" indicate such observations as "...slow moving queues..., extending approximately 900 feet south of Pupukea Road during all peak hours..." and "...during the highest peak times of the peak hour, vehicle queues on Kamehameha Highway in Pupukea have been observed to extend past the roadway curve on Kamehameha Highway (near Saints Peter and Paul Mission) and vehicles experience an increase in delay by a couple of minutes along the highway." This observation is certainly not representative of Level of Service "A" and the observed queuing does not support the conclusion that "...during the majority of the peak hour, traffic flowed freely on Kamehameha Highway and minimal vehicle delay was experienced along the corridor."

To more completely relate "Real Life" to the calculated intersection Level of Service, the TIAR must calculate mid-block Level of Service in addition to the intersection Level of Service. While unusual, it appears here that the mid-block Level of Service may be significantly worse than what occurs once vehicles finally reach the traffic signal on Kamehameha Highway at Pupukea Road.

The TIAR, with its flawed LOS calculations, indicates Kamehameha Highway operates at LOS "A" at Pupukea Road. The calculation results simply do not match up with various real-time traffic data sources such as Google Maps, WAZE, and other sources, all of which colorfully show significant congestion in "red" and slow traffic in "yellow" during many hours of most days. Congestion now occurs regularly throughout the year. Traffic conditions are now being reported as "stand still - traffic jammed" at 3:50 PM on December 27, 2017 just to the south. Corrected midblock LOS calculations revised as discussed above will likely result in worse LOS for existing conditions as well as for future conditions in Year 2021 without and with the Proposed Project.

Page 41 of the TIAR does not, for example, analyze the impact of moving the bus stop, and the possible inclusion of a bus turnout lane as currently exists on the inland side of the Highway nearer to the Pupukea intersection. These measures may not be allowed by Foodland or DOT, and may, in fact, still increase congestion at the traffic signal regardless of a turnout by the mere pulling over and stopping of a bus at this location so near the intersection. Mitigation measures such as these already indicated must be more developed, disclosed, analyzed, and implemented by the Proposed Project.

6) Pedestrian Level of Service is "F" - Page 18 of the TIAR indicates that the existing Level of Service for pedestrians crossing Kamehameha Highway – at the intersection -- is LOS "F" during the mid-day and PM peak hours. The Proposed Project will certainly generate additional pedestrian crossings of Kamehameha Highway. The TIAR should note that this count does not appear to be taken at mid-block, where the project already generates substantial random midblock pedestrian crossings of the Highway.

   The TIAR and the DEIS do not address either the LOS "F" at the existing signalized intersection or the midblock pedestrian crossings.

   While the proposed rectangular rapid flashing beacons at the new proposed crosswalk across Kamehameha Highway at Pahoe Road seem to be the better of several options, Page 43 of the TIAR forecasts the projected LOS for pedestrians will still be an unacceptable "F" under this scenario. The TIAR also does not analyze the resulting congestion that can be created by the

RRFB system, which can be activated at any time by pedestrians, along both directions of the Highway for drivers at this location.

Also, the Proposed Project must also address the increased crossings at the two other locations and include continuous dense landscaped pedestrian barriers along the Proposed Project frontage to deter, discourage, and eliminate pedestrian crossings at numerous random midblock locations.

7) Parking Spaces Do Not Match Up within the DEIS or with the TIAR - Figure 2-3 on Page 2-7 in the DEIS, the Conceptual Site Plan, illustrates 104 parking spaces for the Proposed Project. Parking spaces are poorly illustrated between the new buildings proposed in the middle of the site and the highway and cannot be accurately counted. Figure 2-6 on Page 2-13 of the DEIS shows 99 parking spaces and 7 spaces as potential food truck locations. Table 2-1 on Page 2-9 of the DEIS indicates that 126 parking spaces will be provided. Figure 2 on Page 8 of the TIAR illustrates 117 parking spaces on the site plus another 17 parking spaces in the rear designated as an Overflow Lot, totaling 134 parking spaces.

   The number of parking spaces proposed varies wildly from figure to figure and in the supporting tables. All of these inconsistencies must be removed so members of the public can understand exactly what is being proposed and where it will be located. In addition, if spaces are designated for the food trucks, ADA, trucks, or tour buses, those should be clearly delineated, counted, or marked, even if conceptual.

   The parking space count must be accurate and should be assessed in terms of its impact on the inbound traffic flow and traffic outflow from the Project site. For example, one space set aside for a typical four-passenger car might turnover ten times in one day (at least once per operating hour, assuming operating hours of 8:00 am – 9:00 pm). Comparatively, a mini-van with 24 passengers, parked in a designated stall might turn over only five times a day. (The stall usage and count also will impact other data in the DEIS.) The precise nature of the project parking spaces and the estimated stall turnover should all be disclosed and analyzed properly in a Recirculated DEIS.

8) Proposed New Two-Way Turn Lane - Pages 4 and 6 of the TIAR state that the Project "includes the installation of a new center two-way left-turn lane to provide a refuge area to traffic turning left into and out of the site." The Highway modification portion of the Project is later described as: "...the section of Kamehameha Highway between Pupukea Road and Pahoe Road will be widened and re-striped to add a center two-way left-turn lane," which "will be approximately 270 feet long." Page 34 of the TIAR also observes that,

with the new lane, vehicles "will have to wait for a gap in traffic to allow them to cross or merge into traffic", and that "this will enhance safety."

The TIAR does not reconcile this overly optimistic statement with observations elsewhere that traffic in the new driveway area is projected to be at only LOS C or D (page 35) and pedestrian safety in the area is LOS F or worse (page 43). In addition, the TIAR acknowledges that the on-site traffic flow and back up conditions may create additional problems at the new driveway. Page 38 states "The potential concern is that this blockage would cause an inbound queue in the driveway and impeded turns from the Highway." The proposed internal No Left Turn signage will not be enforceable as it is located on private property. This blockage problem requires further analysis and improved mitigation such as a longer entry/exit throat where vehicle turns are physically prohibited into the parking lot cross-aisles.

Neither the TIAR nor the DEIS indicate (a) the feasibility of such an additional third lane including use of the inland and seaside Highway shoulders (Page 21 provides observations on seaside parking along Highway for pedestrian or bike lanes), or (b) if the DOT has approved, even preliminarily, or is likely to approve these modifications to public land and the budget. Furthermore, no timeline has been indicated for approval or implementation of these key modifications to traffic flow.

In addition, the TIAR and DEIS need to analyze the impacts of the Project assuming that the additional turning lane is not approved by DOT or Foodland. Because the Project owners do not own the public land for the proposed modifications and do not have approvals in hand, the assumption cannot be made that the modifications will occur or will occur in a timely manner. This is a critical flaw in the traffic and pedestrian analysis. Therefore, a "no modification" scenario for the Highway must be analyzed in a Recirculated DEIS.

9) Impact on Pupukea Road and Internal Traffic in the Foodland Parking Lot – Pages 4 and 6 of the TIAR states the Project proposes to close the two existing driveways for Foodland along Kamehameha Highway to reduce access points. Neither the TIAR nor the DEIS indicate if Foodland has approved, even preliminarily, or is likely to approve these modifications to private land and the right-of-way for the Highway. Nor is a timeline indicated for approval or implementation of this key modifications to traffic flow.

The TIAR also does not analyze the impact of these modifications to the internal circulation patterns of the Foodland parking lot. Page 29 indicates the Pupukea Road ingress/egress will be much more heavily used, stating "some of the Foodland trips" ... "would shift to the Pupukea Road driveway". Page

34 fails to disclose the adequacy of this narrow driveway aisle inside the parking lot for current and future traffic. In addition, as the TIAR acknowledges on Page 39, the problem of congestion from Foodland truck deliveries is a major concern. The TIAR then makes the unrealistic suggestion of moving the truck deliveries to the early morning or mid-afternoon, even though Page 40 notes that "time period is usually outside of the truck delivery operations." This information on the Foodland parking lot and sole remaining driveway, and the interaction with delivery trucks to Foodland, should be disclosed and analyzed in a Recirculated DEIS.

The TIAR and DEIS need to analyze the impacts of the Project assuming that the modified driveways for Foodland are not approved. Because the Project owners do not own the private land for the proposed modifications and do not have approvals in hand, the assumption cannot be made that the modifications will occur in a timely manner. This is a critical flaw in the traffic and pedestrian analysis. Therefore, the "no modification" scenario for the Foodland driveways must be analyzed in a Recirculated DEIS.

10) Other Errors in the Data and Analysis – The level of error in the design and analysis of the TIAR indicates that insufficient time and care, or local knowledge, was provided to accurately reflect the current traffic and pedestrian conditions at the Project site. Examples provided below should be considered indicative of how the TIAR and the DEIS need to be corrected:

a) Peak Conditions – Page 9 of the TIAR states that "a study of AM peak period conditions (i.e. 6 AM to 9 AM) was not conducted because the number of project-generated vehicle trips was expected to be negligible given the potential uses on the site." This period of time should have been studied. As indicated by DOT data in Enclosure 3, the early commute along Kamehameha Highway shows a significant peak at 8 AM, which is the expected opening time of the project retail and restaurant operations. The AM peak hours must also be studied.

b) Bicycle Lanes and Usage - The TIAR does not accurately portray the existing Ke Ala Pupukea Bike Path locations or usage, or the bike traffic in this area where the bike path is not contiguous. Page 18 of the TIAR does indicate that bicyclists "use the parking lane on located on the inland side of the Highway located north of the Sunset Beach Fire Station ...as a de facto extension of the Ke Ala Pupukea Bike Path." However, the TIAR does not explain how this will be impacted by the Proposed Project or the lack of safety for bicyclists crossing the highway to the inland side in this area. In addition, it appears that the Project will eliminate all current parking on the inland side of the Highway fronting the project, as well as add a third refuge lane within the Highway in this area. The impact of

these two changes on the bicycle traffic should be disclosed and analyzed.

c) Pedestrian Safety and Crosswalks - The pedestrian counts for the peak periods in the TIAR appear to be based on field observations only at the signalized crosswalk. Even at this controlled intersection, the TIAR discloses an **LOS F** during midday and PM peak hours. This is unacceptable and the cumulative impacts of the Project will only degrade the LOS further.

Furthermore, the field observations should have included the high level of random midblock crossings that occur *in front of the Project site*, across the Highway, back and forth to the Pupukea Beach Park, rather than 215 feet away at the signalized crosswalk. Pages 18 and 21 of the TIAR admit that such crossings occur and indicate "this pattern is not desirable from a safety perspective." Page 19 admits that "While formal counts were not conducted at the Pahoe Road intersection or along the segment south of this street, the number of pedestrians crossing the highway during the Saturday peak hour was *estimated to be in excess of 60*." (Emphasis added.) This number is *substantially higher than* the numbers observed of pedestrians crossing at the signalized crosswalk, indicating both that the current project is adversely affecting pedestrian safety and that the problem will only worsen with the Proposed Project.

Page 18 of the TIAR indicates that a crosswalk near Pahoe Road will be part of the mitigation to manage pedestrian safety but does not analyze the likelihood of actual usage of the crosswalk, nor if DOT has approved, or ever would approve, the design, budget, or construction.

d) Surf Contests – Pages 19 and 21 of the TIAR indicate that the traffic counts taken in 2016 were, in part, during the "Haleiwa Surf Competition." The Haleiwa surf competitions occur, as the name used by the TIAR implies, in Haleiwa over six miles away from the Project site. The Haleiwa surf events, in fact, tend to draw traffic *away from* the Pupukea-Sunset area and often results in lower than usual traffic counts near the Project site. In fact, as you have informed me, on the Friday of the traffic count, November 18, 2016, the Hawaiian Pro at Haleiwa was won by local Sunset Beach surfer John John Florence, which is even more reason to suggest that the traffic, with his huge local fan club, concentrated during this period down the coast in Haleiwa and not in the Pupukea area; thus, these dates appear to under-represent the peak local surf contest traffic.

The TIAR should have analyzed traffic in the project study area during the numerous surf contests at Waimea Bay, Ehukai, or Sunset Beach, all of which draw traffic into the Project site area. This is another indication of

how the data behind the TIAR is flawed. At one point, the TIAR appears to inject some local knowledge when Page 21 states "It is important to note that during the highest peak times of the peak hour (i.e. surf competitions, high surf), vehicle queues on Kamehameha Highway in Pupukea have been observed to extend past the roadway curve on Kamehameha Highway (near Saints Peter and Paul Mission) and vehicles experience an increase in delay by a couple of minutes along the highway." Page 22 notes "under field observations, drivers do experience temporarily delays at this intersection during some periods of the peak summer and surf seasons." However, as noted above, the TIAR *did not* gather data during the peak summer (despite the request of Malama Pupukea-Waimea) or local (Waimea-Ehukai-Sunset) surf contests. No data are offered to support these off-hand observations and relevant peak periods of traffic indeed should have been analyzed and data provided to document the cumulative impact of the Project.

Finally, Page 37 of the TIAR concludes that "During the peak surf and summer seasons, the intermittent congestion is expected to continue to occur regardless of project implementation." While this may be true, the key point for this DEIS is that (a) the TIAR should have therefore studied traffic during these peak periods, and (b) the TIAR should have examined the cumulative impacts on LOS for vehicles and pedestrians during these peak periods.

e) Overly Optimistic Conclusions - The TIAR makes several overly optimistic conclusions on Page 37 that are misleading. First, the conclusion that no significant impact is expected to traffic is based on inadequate data and, even then, does not acknowledge the serious problems with LOS C and D in front of the Project site. Second, the acknowledgement of additional traffic to the Highway is based primarily on the signalized intersection, which is a controlled point of flow. Third, the additional traffic added to Pupukea Road does not consider the poor condition of the Foodland driveway or the existing problems with the internal traffic flow at Foodland. Fourth, the TIAR assumes the Highway modifications will address any additional traffic, without acknowledging that those modifications are not designed, funded, or approved by DOT. Fifth, the improvements from the Project driveway modifications that depend on drivers finding "gaps" in the traffic are difficult to reconcile with the poor LOS for vehicle and pedestrians in this specific midblock area.

In sum, the DEIS must address the significant issues and concerns outlined in this letter. The evidence in the DEIS makes clear that the significant traffic impacts created by the Proposed Project will not be addressed in a timely

manner, especially in light of the fact that critical mitigation measures are not specified, approved, or funded.

After correction of the faulty methodology in the DEIS and TIAR, the Pupukea Commercial Center will also be found to create additional significant traffic impacts that must be properly analyzed, evaluated, and mitigated in a Recirculated DEIS.

Respectfully submitted,

Tom Brohard and Associates

Tom Brohard, PE
Principal

THOMAS W. BROHARD, III
LICENSED PROFESSIONAL ENGINEER
No. 12321-C
HAWAII U.S.A.

Enclosures
1 - Resume
2 - Hawaii Administrative Rules
3 – DOT Traffic Counts
4, 5, 6 - DOT Pupukea Traffic Counts 2014, 2015, 2016

THIS WORK WAS PREPARED BY ME.

April 30, 2018

Signature | Expiration Date of License

Tom Brohard and Associates

January 7, 2018

Denise Antolini, President
Malama Pupukea-Waimea
Post Office Box 188
Haleiwa, Hawaii 96712

SUBJECT: Pupukea Rural Community Commercial Center Draft Environmental Impact Statement (DEIS) – Traffic – Findings and Comments

Dear Ms. Antolini:

At your request on behalf of Malama Pupukea-Waimea (MPW) and as you authorized, I have reviewed the traffic and transportation portions of the November 2017 Pupukea Rural Community Commercial Center Draft Environmental Impact Statement (DEIS) prepared by G70. In preparing my findings and comments, I have reviewed the following sections and appendices related to traffic and transportation for the Proposed Project:

- Chapter 1 – Project Summary
- Chapter 2 – Project Description
- Chapter 3.13 – Environmental Setting, Probable Impacts, and Recommended Mitigation - Traffic
- Appendix F – July 25, 2017 Transportation Impact Analysis Report (TIAR) prepared by Fehr & Peers
- TIAR Appendices A through D (TIAR Appendices)

In sum, the November 2017 DEIS for the proposed Pupukea Rural Community Commercial Center is seriously flawed as it does not provide an adequate assessment of traffic impacts on the adjacent roadway segments and intersections. As explained in detail throughout this letter, many of the assumptions and conclusions in the TIAR are not supported by proper documentation and substantial evidence. Errors in the TIAR methodology include faulty trip generation calculations based on superseded, outdated information. Further study of these and the other issues identified in this letter is required as part of a Recirculated DEIS for the Proposed Project.

Education and Experience

Since receiving a Bachelor of Science in Engineering from Duke University in Durham, North Carolina in 1969, I have gained over 45 years of professional engineering experience. I am licensed as a Professional Civil Engineer both in Hawaii and California, and as a Professional Traffic Engineer in California. I

81905 Mountain View Lane, La Quinta, California 92253-7611
Phone (760) 398-8885 Fax (760) 398-8897
Email tbrohard@earthlink.net

formed Tom Brohard and Associates in 2000 and now serve as the City Traffic Engineer for the City of Indio and as Consulting Transportation Engineer for the City of San Fernando. I have extensive experience in traffic engineering and transportation planning. During my career in both the public and private sectors, I have reviewed many environmental documents and traffic studies, with only a few of these listed in the enclosed resume (see Enclosure 1). In addition, on behalf of Keep the North Shore Country, I have also reviewed all prior Traffic Impact Analysis Reports, Updates and Addendums prepared between 1985 and 2009 for the community's review of the Turtle Bay Resort EISs.

Traffic and Transportation Issues/Concerns – Findings and Comments

Based on the information provided in the November 2017 DEIS and July 25, 2017 TIAR, my review disclosed a number of serious issues and concerns relating to traffic and transportation. Each of the following findings and comments must be addressed through further study and modifications to the DEIS and TIAR, together with recirculation of these documents for public review and comment:

1) TIAR Must Be Signed and Stamped by a Civil Engineer Licensed in Hawaii - Fehr & Peers, the firm that performed the TIAR for the DEIS, is a transportation engineering firm with offices throughout the Western United States. On their website at http://www.fehrandpeers.com/contactus/, the firm also shows an office at 500 Ala Moana Boulevard, Suite 7-400 in Honolulu. According to Maxx Phillips, Managing Director of Malama Pupukea-Waimea who visited the Honolulu location on December 20, 2017, the "office" is merely a mail drop location and no Fehr & Peers staff work there. The receptionist did not have a contact name or phone number.

   Hawaii Administrative Rules Title 16, Chapter 115 regarding Professional Engineers, Architects, Surveyors, and Landscape Architects published by the Department of Commerce and Consumer Affairs, requires that civil engineering works be directly controlled and personally supervised by an engineer licensed in Hawaii (see Enclosure 2). As a reviewer of civil engineering works prepared by others, I too am required to be licensed as a civil engineer in Hawaii.

   The Professional and Vocational Licensing Division (PVL) of the Department of Commerce and Consumer Affairs licenses individuals but is not able to identify members of firms who are licensed in Hawaii. As a result, I cannot determine if this TIAR was prepared under the direction of a civil engineer licensed in Hawaii. The Rules put forth in Chapter 115 requiring that the TIAR be signed and stamped were not followed by Fehr & Peers.

   The purpose of requiring a locally licensed engineer is to ensure the integrity of the information gathered and analyzed. As further indicated below, the TIAR indicates a surprising lack of familiarity with the local conditions along Kamehameha Highway on the North Shore and specifically at Pupukea, which appears to have led to several faulty assumptions and weak analysis in the TIAR and DEIS.

2) Traffic Counts Used in the TIAR May Not Be Properly Factored or Adjusted - The only traffic counts provided in the TIAR Appendix were conducted from Thursday through Saturday, November 17 through 19, 2016. Your email to Jeff Overton at G70 in August 2017 requesting additional traffic counts and documentation and expressing concerns about the validity of the data gathered were not addressed by G70 before the release of the DEIS, in the document itself, or in the TIAR (dated July 25, 2017 but not released until November 23, 2017), which did not include any additional traffic counts.

   Page 21 of the TIAR indicates that traffic counts on the two-lane Kamehameha Highway in the area of the Proposed Project vary up and down but the TIAR reaches no conclusion regarding traffic volume trends. Page 24 of the TIAR indicates that it considered historic DOT traffic data "in the study area from 2013, 2014, 2015, and 2016" but does not reference 2017 and does explain or attach any of the reviewed data. Page 24 of the TIAR concludes "the review of these volumes did not reveal a clear trend in the roadway system's growth…" This detailed information, including the definition of "the study area," the precise location of the counts, and the "consideration" or analysis of this data by Fehr & Peers must be included in the DEIS to properly inform the agency and the public on this critical traffic issue.

   In response to my recent emails to the Department of Transportation (DOT), I was provided with a number of traffic counts that have been conducted over the last few years (see Enclosure 3). At minimum, these traffic counts should have been used by Fehr & Peers to establish proper seasonal adjustment factors as well as ambient annual growth factors. Best practice would have been for Fehr & Peers to (1) provide historic data from the *same location* as the TIAR traffic counts, and (2) to take a second traffic count during the high season of July-August 2017, before Labor Day Weekend, as requested by Malama Pupukea-Waimea (MPW). Lacking this kind of depth and understanding of local conditions, the data and information presented are an inadequate basis on which to draw sound conclusions.

   The 1% annual ambient traffic growth factor used in the TIAR is not supported by count data. Page 23 of the TIAR attempts to support this assumption stating it is "reasonable given the built-out nature of the Pupukea

neighborhood and the limited planned development in the greater North Shore area." Neither of these factors is a valid basis for the 1% assumption.

Data from DOT traffic counts provided to MPW for Pupukea Road from 2014, 2015, and 2016 (Enclosures 4, 5, 6) indicate that peak am traffic is steadily increasing in these recent three years. For example, for the comparable January data in each of these years, the highest three numbers in the 7:30 am and 7:45 am commute periods went from 87-89-90 vehicles (2014) (average 89), to 92-93-93 vehicles (2015) (average 92), to 117-127-135 vehicles (2016) (average 126), roughly a **30%** increase in three years.

According to the DOT counts in Enclosure 3 taken in October 2013 at Sunset Chevron and six months later in April 2014 at Chun's (both of which are during the "low" traffic season, Enclosure 3), a monthly count along the Joseph Leong Bypass indicates April was the second lowest traffic month in 2016 and October was the 6th lowest month. Even so, the growth rate in just that six-month period was **15%** as indicated below:

DOT Count Point	Date	D1+D2	Count Difference	% Difference
Sunset Chevron	Oct. 16-17, 2013	12,910 12,593= **12,751** (average)		
Chun's	Apr. 29-30, 2014	14,835 14,575= **14,701** (average)	**+ 1,950**	**+15.29%**

Although this does not represent the annual growth rate, because the DOT data are not from the same days and months, it does demonstrate that the 1% assumption is likely erroneous and that data collection must be more robust, transparent, and comprehensive to be meaningful for the review of this DEIS.

To establish accurate future baseline conditions at occupancy of the Proposed Project in 2021, five years after the 2016 counts were made, adjustment factors must be properly disclosed and calculated and then added to the baseline traffic volumes to create a proper baseline upon which the Proposed Project traffic volumes can then be added and evaluated.

3) Project Trip Generation Was Not Properly Calculated - Trip generation for the Proposed Project was developed using Trip Generation, 9th Edition published in 2012 by the Institute of Transportation Engineers, ITE. In Summer 2017,

ITE published Trip Generation, 10th Edition, which contains a number of changes and supersedes the 2012 edition. The TIAR must be updated to reflect the following changes and the latest information as follows:

a) Specialty Retail (Old Land Use Code 826 from 2012, 9th Edition) – The TIAR used the trip generation data from this land use code which had lower peak hour and daily trip rates than those for other commercial and retail land uses. The 10th Edition no longer includes trip rates for the "specialty retail" land use. The studies upon which these rates were based have been moved to other land use codes.

   Using Shopping Center (New Land Use Code 820 from 2017, 10th Edition) to calculate revised trip generation forecasts for the Proposed Project will result in higher traffic volumes than were assumed in the TIAR using Specialty Retail. Weekday daily trips for a 30,000-square foot shopping center would be about **2,650 rather than 1,122**, with PM peak hour trips of about 220 rather than 90. Similar increases can be expected on Saturdays for daily and mid-day peak hour trips.

   Thus, by using outdated guidelines and the incorrect code, **the TIAR underestimated trip generation of the project by 57%.** This serious error must be addressed and corrected in a Recirculated DEIS.

b) Food Cart Pod (New Land Use Code 926 in 2017, 10th Edition) – The 10th Edition includes new Land Use Code 926, which has not appeared in prior editions of Trip Generation. This land use is described as "... a group of food carts or food trucks congregated in an established location such as a parking lot on a semi-permanent or regular basis. Food pods typically serve lunch and dinner with lunchtime typically generating the highest volumes of the day. Food cart pods often include limited covered seating or dining area and may include the sale of alcoholic beverages."

   The number of food trucks in the Proposed Project is higher than the five currently using the site. The site plans shown in the documents illustrate as many as seven food trucks whereas Page 6 of the TIAR indicates between four and six food trucks; in a community presentation, as noted by Malama Pupukea-Waimea, I understand G70 projected up to eight food trucks, twice as many as the lower number stated in the TIAR.

   The Fehr & Peers traffic counts taken in November 2016 need to identify the number of food trucks present on the count days as well as all changes in the square footage of the shops that will remain (e.g., real estate, ocean sports, beachwear) to properly support the trip generation estimates and forecasts that were previously used. The TIAR incorrectly dismisses the potential differences in trip generation. Significant trip

generation errors could be introduced by merely assuming that the number of food trucks and the square footage of the shops that remain will be the same in the "before" and "after" conditions. More detailed and specific calculations are required, not generalities.

c) The Proposed Project Could Create Significant Traffic Impacts – Correcting the trip generation estimates and forecasts as described above could certainly result in significant traffic impacts on Kamehameha Highway at intersections along the frontage of the Proposed Project and at midblock segments. This will require further analysis together with the development of feasible mitigation measures that must be implemented in a timely manner.

4) Lane Geometrics at Project Driveway Are Incorrectly Illustrated - Figures 7, 8, 9, and 10 of the TIAR incorrectly illustrate the number of traffic lanes on Kamehameha Highway at the Proposed Project driveway by showing two southbound through lanes and two northbound through lanes. This is an odd error and highly inaccurate. At this location, Kamehameha Highway has only two lanes. Even under the proposed (but not approved) improvements, only one additional traffic lane would be created. Calculations in the TIAR Appendix do not show the additional lanes for through traffic at the proposed driveway. The figures must be explained and corrected to match the calculations.

5) Vehicle Level of Service Calculations Do Not Match "Real Life" - Table 1 and Table 2 on Page 11 of the TIAR relate the various Level of Service (LOS) descriptions and delays for vehicles at signalized and non-signalized intersections. Table 4 on Page 22 of the TIAR provides the result of calculations using the November 2016 traffic counts, indicating LOS "A" during mid weekday, PM weekday, and Saturday mid-day peak hours.

Field observations summarized on Page 21 certainly do not support the calculated LOS "A" findings. Statements of "Real Life" indicate such observations as "...slow moving queues..., extending approximately 900 feet south of Pupukea Road during all peak hours..." and "...during the highest peak times of the peak hour, vehicle queues on Kamehameha Highway in Pupukea have been observed to extend past the roadway curve on Kamehameha Highway (near Saints Peter and Paul Mission) and vehicles experience an increase in delay by a couple of minutes along the highway." This observation is certainly not representative of Level of Service "A" and the observed queuing does not support the conclusion that "...during the majority of the peak hour, traffic flowed freely on Kamehameha Highway and minimal vehicle delay was experienced along the corridor."

To more completely relate "Real Life" to the calculated intersection Level of Service, the TIAR must calculate mid-block Level of Service in addition to the intersection Level of Service. While unusual, it appears here that the mid-block Level of Service may be significantly worse than what occurs once vehicles finally reach the traffic signal on Kamehameha Highway at Pupukea Road.

The TIAR, with its flawed LOS calculations, indicates Kamehameha Highway operates at LOS "A" at Pupukea Road. The calculation results simply do not match up with various real-time traffic data sources such as Google Maps, WAZE, and other sources, all of which colorfully show significant congestion in "red" and slow traffic in "yellow" during many hours of most days. Congestion now occurs regularly throughout the year. Traffic conditions are now being reported as "stand still - traffic jammed" at 3:50 PM on December 27, 2017 just to the south. Corrected midblock LOS calculations revised as discussed above will likely result in worse LOS for existing conditions as well as for future conditions in Year 2021 without and with the Proposed Project.

Page 41 of the TIAR does not, for example, analyze the impact of moving the bus stop, and the possible inclusion of a bus turnout lane as currently exists on the inland side of the Highway nearer to the Pupukea intersection. These measures may not be allowed by Foodland or DOT, and may, in fact, still increase congestion at the traffic signal regardless of a turnout by the mere pulling over and stopping of a bus at this location so near the intersection. Mitigation measures such as these already indicated must be more developed, disclosed, analyzed, and implemented by the Proposed Project.

6) Pedestrian Level of Service is "F" - Page 18 of the TIAR indicates that the existing Level of Service for pedestrians crossing Kamehameha Highway – at the intersection -- is LOS "F" during the mid-day and PM peak hours. The Proposed Project will certainly generate additional pedestrian crossings of Kamehameha Highway. The TIAR should note that this count does not appear to be taken at mid-block, where the project already generates substantial random midblock pedestrian crossings of the Highway.

The TIAR and the DEIS do not address either the LOS "F" at the existing signalized intersection or the midblock pedestrian crossings.

While the proposed rectangular rapid flashing beacons at the new proposed crosswalk across Kamehameha Highway at Pahoe Road seem to be the better of several options, Page 43 of the TIAR forecasts the projected LOS for pedestrians will still be an unacceptable "F" under this scenario. The TIAR also does not analyze the resulting congestion that can be created by the

RRFB system, which can be activated at any time by pedestrians, along both directions of the Highway for drivers at this location.

Also, the Proposed Project must also address the increased crossings at the two other locations and include continuous dense landscaped pedestrian barriers along the Proposed Project frontage to deter, discourage, and eliminate pedestrian crossings at numerous random midblock locations.

7) Parking Spaces Do Not Match Up within the DEIS or with the TIAR - Figure 2-3 on Page 2-7 in the DEIS, the Conceptual Site Plan, illustrates 104 parking spaces for the Proposed Project. Parking spaces are poorly illustrated between the new buildings proposed in the middle of the site and the highway and cannot be accurately counted. Figure 2-6 on Page 2-13 of the DEIS shows 99 parking spaces and 7 spaces as potential food truck locations. Table 2-1 on Page 2-9 of the DEIS indicates that 126 parking spaces will be provided. Figure 2 on Page 8 of the TIAR illustrates 117 parking spaces on the site plus another 17 parking spaces in the rear designated as an Overflow Lot, totaling 134 parking spaces.

   The number of parking spaces proposed varies wildly from figure to figure and in the supporting tables. All of these inconsistencies must be removed so members of the public can understand exactly what is being proposed and where it will be located. In addition, if spaces are designated for the food trucks, ADA, trucks, or tour buses, those should be clearly delineated, counted, or marked, even if conceptual.

   The parking space count must be accurate and should be assessed in terms of its impact on the inbound traffic flow and traffic outflow from the Project site. For example, one space set aside for a typical four-passenger car might turnover ten times in one day (at least once per operating hour, assuming operating hours of 8:00 am – 9:00 pm). Comparatively, a mini-van with 24 passengers, parked in a designated stall might turn over only five times a day. (The stall usage and count also will impact other data in the DEIS.) The precise nature of the project parking spaces and the estimated stall turnover should all be disclosed and analyzed properly in a Recirculated DEIS.

8) Proposed New Two-Way Turn Lane - Pages 4 and 6 of the TIAR state that the Project "includes the installation of a new center two-way left-turn lane to provide a refuge area to traffic turning left into and out of the site." The Highway modification portion of the Project is later described as: "...the section of Kamehameha Highway between Pupukea Road and Pahoe Road will be widened and re-striped to add a center two-way left-turn lane," which "will be approximately 270 feet long." Page 34 of the TIAR also observes that,

with the new lane, vehicles "will have to wait for a gap in traffic to allow them to cross or merge into traffic", and that "this will enhance safety."

The TIAR does not reconcile this overly optimistic statement with observations elsewhere that traffic in the new driveway area is projected to be at only LOS C or D (page 35) and pedestrian safety in the area is LOS F or worse (page 43). In addition, the TIAR acknowledges that the on-site traffic flow and back up conditions may create additional problems at the new driveway. Page 38 states "The potential concern is that this blockage would cause an inbound queue in the driveway and impeded turns from the Highway." The proposed internal No Left Turn signage will not be enforceable as it is located on private property. This blockage problem requires further analysis and improved mitigation such as a longer entry/exit throat where vehicle turns are physically prohibited into the parking lot cross-aisles.

Neither the TIAR nor the DEIS indicate (a) the feasibility of such an additional third lane including use of the inland and seaside Highway shoulders (Page 21 provides observations on seaside parking along Highway for pedestrian or bike lanes), or (b) if the DOT has approved, even preliminarily, or is likely to approve these modifications to public land and the budget. Furthermore, no timeline has been indicated for approval or implementation of these key modifications to traffic flow.

In addition, the TIAR and DEIS need to analyze the impacts of the Project assuming that the additional turning lane is not approved by DOT or Foodland. Because the Project owners do not own the public land for the proposed modifications and do not have approvals in hand, the assumption cannot be made that the modifications will occur or will occur in a timely manner. This is a critical flaw in the traffic and pedestrian analysis. Therefore, a "no modification" scenario for the Highway must be analyzed in a Recirculated DEIS.

9) Impact on Pupukea Road and Internal Traffic in the Foodland Parking Lot – Pages 4 and 6 of the TIAR states the Project proposes to close the two existing driveways for Foodland along Kamehameha Highway to reduce access points. Neither the TIAR nor the DEIS indicate if Foodland has approved, even preliminarily, or is likely to approve these modifications to private land and the right-of-way for the Highway. Nor is a timeline indicated for approval or implementation of this key modifications to traffic flow.

   The TIAR also does not analyze the impact of these modifications to the internal circulation patterns of the Foodland parking lot. Page 29 indicates the Pupukea Road ingress/egress will be much more heavily used, stating "some of the Foodland trips" ... "would shift to the Pupukea Road driveway". Page

34 fails to disclose the adequacy of this narrow driveway aisle inside the parking lot for current and future traffic. In addition, as the TIAR acknowledges on Page 39, the problem of congestion from Foodland truck deliveries is a major concern. The TIAR then makes the unrealistic suggestion of moving the truck deliveries to the early morning or mid-afternoon, even though Page 40 notes that "time period is usually outside of the truck delivery operations." This information on the Foodland parking lot and sole remaining driveway, and the interaction with delivery trucks to Foodland, should be disclosed and analyzed in a Recirculated DEIS.

The TIAR and DEIS need to analyze the impacts of the Project assuming that the modified driveways for Foodland are not approved. Because the Project owners do not own the private land for the proposed modifications and do not have approvals in hand, the assumption cannot be made that the modifications will occur in a timely manner. This is a critical flaw in the traffic and pedestrian analysis. Therefore, the "no modification" scenario for the Foodland driveways must be analyzed in a Recirculated DEIS.

10) Other Errors in the Data and Analysis – The level of error in the design and analysis of the TIAR indicates that insufficient time and care, or local knowledge, was provided to accurately reflect the current traffic and pedestrian conditions at the Project site. Examples provided below should be considered indicative of how the TIAR and the DEIS need to be corrected:

a) Peak Conditions – Page 9 of the TIAR states that "a study of AM peak period conditions (i.e. 6 AM to 9 AM) was not conducted because the number of project-generated vehicle trips was expected to be negligible given the potential uses on the site." This period of time should have been studied. As indicated by DOT data in Enclosure 3, the early commute along Kamehameha Highway shows a significant peak at 8 AM, which is the expected opening time of the project retail and restaurant operations. The AM peak hours must also be studied.

b) Bicycle Lanes and Usage - The TIAR does not accurately portray the existing Ke Ala Pupukea Bike Path locations or usage, or the bike traffic in this area where the bike path is not contiguous. Page 18 of the TIAR does indicate that bicyclists "use the parking lane on located on the inland side of the Highway located north of the Sunset Beach Fire Station ...as a de facto extension of the Ke Ala Pupukea Bike Path." However, the TIAR does not explain how this will be impacted by the Proposed Project or the lack of safety for bicyclists crossing the highway to the inland side in this area. In addition, it appears that the Project will eliminate all current parking on the inland side of the Highway fronting the project, as well as add a third refuge lane within the Highway in this area. The impact of

these two changes on the bicycle traffic should be disclosed and analyzed.

c) Pedestrian Safety and Crosswalks - The pedestrian counts for the peak periods in the TIAR appear to be based on field observations only at the signalized crosswalk. Even at this controlled intersection, the TIAR discloses an **LOS F** during midday and PM peak hours. This is unacceptable and the cumulative impacts of the Project will only degrade the LOS further.

Furthermore, the field observations should have included the high level of random midblock crossings that occur *in front of the Project site*, across the Highway, back and forth to the Pupukea Beach Park, rather than 215 feet away at the signalized crosswalk. Pages 18 and 21 of the TIAR admit that such crossings occur and indicate "this pattern is not desirable from a safety perspective." Page 19 admits that "While formal counts were not conducted at the Pahoe Road intersection or along the segment south of this street, the number of pedestrians crossing the highway during the Saturday peak hour was *estimated to be in excess of 60*." (Emphasis added.) This number is *substantially higher than* the numbers observed of pedestrians crossing at the signalized crosswalk, indicating both that the current project is adversely affecting pedestrian safety and that the problem will only worsen with the Proposed Project.

Page 18 of the TIAR indicates that a crosswalk near Pahoe Road will be part of the mitigation to manage pedestrian safety but does not analyze the likelihood of actual usage of the crosswalk, nor if DOT has approved, or ever would approve, the design, budget, or construction.

d) Surf Contests – Pages 19 and 21 of the TIAR indicate that the traffic counts taken in 2016 were, in part, during the "Haleiwa Surf Competition." The Haleiwa surf competitions occur, as the name used by the TIAR implies, in Haleiwa over six miles away from the Project site. The Haleiwa surf events, in fact, tend to draw traffic *away from* the Pupukea-Sunset area and often results in lower than usual traffic counts near the Project site. In fact, as you have informed me, on the Friday of the traffic count, November 18, 2016, the Hawaiian Pro at Haleiwa was won by local Sunset Beach surfer John John Florence, which is even more reason to suggest that the traffic, with his huge local fan club, concentrated during this period down the coast in Haleiwa and not in the Pupukea area; thus, these dates appear to under-represent the peak local surf contest traffic.

The TIAR should have analyzed traffic in the project study area during the numerous surf contests at Waimea Bay, Ehukai, or Sunset Beach, all of which draw traffic into the Project site area. This is another indication of

how the data behind the TIAR is flawed. At one point, the TIAR appears to inject some local knowledge when Page 21 states "It is important to note that during the highest peak times of the peak hour (i.e. surf competitions, high surf), vehicle queues on Kamehameha Highway in Pupukea have been observed to extend past the roadway curve on Kamehameha Highway (near Saints Peter and Paul Mission) and vehicles experience an increase in delay by a couple of minutes along the highway." Page 22 notes "under field observations, drivers do experience temporarily delays at this intersection during some periods of the peak summer and surf seasons." However, as noted above, the TIAR *did not* gather data during the peak summer (despite the request of Malama Pupukea-Waimea) or local (Waimea-Ehukai-Sunset) surf contests. No data are offered to support these off-hand observations and relevant peak periods of traffic indeed should have been analyzed and data provided to document the cumulative impact of the Project.

Finally, Page 37 of the TIAR concludes that "During the peak surf and summer seasons, the intermittent congestion is expected to continue to occur regardless of project implementation." While this may be true, the key point for this DEIS is that (a) the TIAR should have therefore studied traffic during these peak periods, and (b) the TIAR should have examined the cumulative impacts on LOS for vehicles and pedestrians during these peak periods.

e) Overly Optimistic Conclusions - The TIAR makes several overly optimistic conclusions on Page 37 that are misleading. First, the conclusion that no significant impact is expected to traffic is based on inadequate data and, even then, does not acknowledge the serious problems with LOS C and D in front of the Project site. Second, the acknowledgement of additional traffic to the Highway is based primarily on the signalized intersection, which is a controlled point of flow. Third, the additional traffic added to Pupukea Road does not consider the poor condition of the Foodland driveway or the existing problems with the internal traffic flow at Foodland. Fourth, the TIAR assumes the Highway modifications will address any additional traffic, without acknowledging that those modifications are not designed, funded, or approved by DOT. Fifth, the improvements from the Project driveway modifications that depend on drivers finding "gaps" in the traffic are difficult to reconcile with the poor LOS for vehicle and pedestrians in this specific midblock area.

In sum, the DEIS must address the significant issues and concerns outlined in this letter. The evidence in the DEIS makes clear that the significant traffic impacts created by the Proposed Project will not be addressed in a timely

manner, especially in light of the fact that critical mitigation measures are not specified, approved, or funded.

After correction of the faulty methodology in the DEIS and TIAR, the Pupukea Commercial Center will also be found to create additional significant traffic impacts that must be properly analyzed, evaluated, and mitigated in a Recirculated DEIS.

Respectfully submitted,

Tom Brohard and Associates

Tom Brohard, PE
Principal

THOMAS W. BROHARD, III
LICENSED PROFESSIONAL ENGINEER
No. 12321-C
HAWAII U.S.A.

Enclosures
1 - Resume
2 - Hawaii Administrative Rules
3 – DOT Traffic Counts
4, 5, 6 - DOT Pupukea Traffic Counts 2014, 2015, 2016

THIS WORK WAS PREPARED BY ME.

Signature — Expiration Date of License: April 30, 2018

Licenses: 1975 / Professional Engineer / California – Civil, No. 24577
1977 / Professional Engineer / California – Traffic, No. 724
2006 / Professional Engineer / Hawaii – Civil, No. 12321

Education: 1969 / BSE / Civil Engineering / Duke University

Experience: 45+ Years

Memberships: 1977 / Institute of Transportation Engineers – Fellow, Life
1978 / Orange County Traffic Engineers Council - Chair 1982-1983
1981 / American Public Works Association – Life Member

Tom is a recognized expert in the field of traffic engineering and transportation planning. His background also includes responsibility for leading and managing the delivery of various contract services to numerous cities in Southern California.

Tom has extensive experience in providing transportation planning and traffic engineering services to public agencies. Since May 2005, he has served as Consulting City Traffic Engineer for the City of Indio. He also currently provides "on call" Traffic and Transportation Engineer services to the Cities of Big Bear Lake and San Fernando. In addition to conducting traffic engineering investigations for Los Angeles County from 1972 to 1978, he has previously served as City Traffic Engineer in the following communities:

- Bellflower ..... 1997 - 1998
- Bell Gardens ..... 1982 - 1995
- Huntington Beach ..... 1998 - 2004
- Lawndale ..... 1973 - 1978
- Los Alamitos ..... 1981 - 1982
- Oceanside ..... 1981 - 1982
- Paramount ..... 1982 - 1988
- Rancho Palos Verdes ..... 1973 - 1978
- Rolling Hills ..... 1973 - 1978, 1985 - 1993
- Rolling Hills Estates ..... 1973 - 1978, 1984 - 1991
- San Marcos 1981
- Santa Ana ..... 1978 - 1981
- Westlake Village ..... 1983 - 1994

During these assignments, Tom has supervised City staff and directed other consultants including traffic engineers and transportation planners, traffic signal and street lighting personnel, and signing, striping, and marking crews. He has secured over $10 million in grant funding for various improvements. He has managed and directed many traffic and transportation studies and projects. While serving these communities, he has personally conducted investigations of hundreds of citizen requests for various traffic control devices. Tom has also successfully presented numerous engineering reports at City Council, Planning Commission, and Traffic Commission meetings in these and other municipalities.

In his service to the City of Indio since May 2005, Tom has accomplished the following:

- Oversaw preparation and adoption of the 2008 Circulation Element Update of the General Plan including development of Year 2035 buildout traffic volumes, revised and simplified arterial roadway cross sections, and reduction in acceptable Level of Service criteria under certain conditions.

- Oversaw preparation of fact sheets/design exceptions to reduce shoulder widths on Jackson Street and on Monroe Street over I-10 as well as justifications for protected-permissive left turn phasing at I-10 on-ramps, the first such installations in Caltrans District 8 in Riverside County; reviewed plans and provided assistance during construction of both $2 million projects to install traffic signals and widen three of four ramps at these two interchanges under Caltrans encroachment permits.

- Reviewed traffic signal, signing, striping, and work area traffic control plans for the County's $45 million I-10 Interchange Improvement Project at Jefferson Street.

- Reviewed traffic impact analyses for Project Study Reports evaluating different alternatives for buildout improvements of the I-10 Interchanges at Jefferson Street, Monroe Street, Jackson Street and Golf Center Parkway.

- Oversaw preparation of plans, specifications, and contract documents and provided construction assistance for over 50 traffic signal installations and modifications.

- Reviewed and approved over 1,200 work area traffic control plans as well as signing and striping plans for all City and developer funded roadway improvement projects.

- Oversaw preparation of a City wide traffic safety study of conditions at all schools.

- Obtained $47,000 grant from the California Office of Traffic Safety and implemented the City's Traffic Collision Database System. Annually reviews "Top 25" collision locations and provides traffic engineering recommendations to reduce collisions.

- Prepared over 900 work orders directing City forces to install, modify, and/or remove traffic signs, pavement and curb markings, and roadway striping.

- Oversaw preparation of engineering and traffic surveys to establish enforceable speed limits on over 400 street segments.

- Reviewed and approved traffic impact studies for more than 35 major projects and special events including the annual Coachella and Stagecoach Music Festivals.

- Developed and implemented the City's Golf Cart Transportation Program.

Since forming Tom Brohard and Associates in 2000, Tom has reviewed many traffic impact reports and environmental documents for various development projects. He has provided expert witness services and also prepared traffic studies for public agencies and private sector clients.

HAWAII ADMINISTRATIVE RULES

TITLE 16

DEPARTMENT OF COMMERCE AND CONSUMER AFFAIRS

CHAPTER 115

PROFESSIONAL ENGINEERS, ARCHITECTS, SURVEYORS, AND LANDSCAPE ARCHITECTS

Subchapter 1 General Provisions

§16-115-1	Objective
§16-115-2	Definitions
§16-115-3	Notification and filing of names, addresses, and changes
§16-115-4	Business entities
§16-115-5	Display of certificate
§16-115-6	Lost, destroyed, or mutilated certificate of licensure
§16-115-7	Biennial renewal
§16-115-8	Seal or stamp
§16-115-9	Authentication: preparation or supervision of design and observation of construction
§16-115-10	Misconduct in the practice
§16-115-11	Oral testimony
§16-115-12	Denial
§16-115-13	Demand for hearing
§16-115-14	Proceedings upon demand for hearing
§16-115-15	Administrative practice and procedure

Subchapter 2 Professional Engineers

§16-115-21	Branches of engineering
§16-115-22	Forms and instructions
§16-115-24	Licensure by endorsement
§16-115-26	Licensure by examination
§16-115-27	Examination requirements for licensure
§16-115-29	Passing score

similar members where such investigation, design, selection, and supervision requires a knowledge of engineering laws, formulae, practice, and knowledge of the methods used in their erection.

"Supervise", "supervision", "supervision of design", or "under the supervision of" means that a licensed engineer, architect, surveyor, or landscape architect, as the case may be, shall:

(1) Exercise direct control and oversee the subject activity through physical presence or through the use of communication devices; provided the licensee has both direct control and detailed professional knowledge of the work being supervised; or

(2) Substantially redraft, redraw, redesign, or recalculate the plans, specifications, and other related documents;

and be responsible for all work within the licensee's discipline performed on plans, specifications, and other related documents.

"Written examination" means paper-pencil or computer-assisted examination. [Eff 8/29/94; am and comp 10/26/01; am and comp 5/23/13] (Auth: HRS §464-7) (Imp: HRS §§464-7, 464-8, 464-11)

§16-115-3 Notification and filing of names, addresses, and changes. A licensee shall file the licensee's mailing address and name with the board and shall immediately notify the board in writing within thirty days of any and all changes of address or name. [Eff 8/29/94; am and comp 10/26/01; comp 5/23/13] (Auth: HRS §464-7) (Imp: HRS §§464-7, 464-9)

§16-115-4 Business entities. Pursuant to chapters 428 and 464, HRS, a corporation, partnership, or limited liability company may engage in the practice of professional engineering, architecture, land surveying, or landscape architecture in the State provided the person or persons connected with the business entity directly in charge of the professional work is or are duly licensed under chapter 464, HRS. The person or persons in direct charge shall be full-time employee(s), principal(s), officer(s), partner(s), member(s), or manager(s) of the business entity, and shall have been delegated the legal authority to bind the business entity in all matters relating to the professional work. [Eff 8/29/94; am and comp 10/26/01; comp 5/23/13] (Auth: HRS §464-7) (Imp: HRS §§464-7, 464-12)

§16-115-5 Display of certificate. Every licensee who, as an individual or as a member of a firm, partnership, corporation, or limited liability company, conducts

an office or other place of business for the practice of the licensee's profession, shall display the licensee's certificate together with evidence of current validation in a conspicuous manner, in the licensee's principal office or place of business. [Eff 8/29/94; am and comp 10/26/01; comp 5/23/13] (Auth: HRS §464-7) (Imp: HRS §§464-7, 464-9)

§16-115-6 Lost, destroyed, or mutilated certificate of licensure. Upon request accompanied by affidavit showing loss, destruction, or mutilation of a certificate, a licensee shall be furnished a new certificate. [Eff 8/29/94; comp 10/26/01; comp 5/23/13] (Auth: HRS §464-7) (Imp: HRS §§464-7, 464-9)

§16-115-7 Biennial renewal. Renewal fees paid by mail shall be considered as paid when due if the envelope bears a postmark of April 30 or earlier. [Eff 8/29/94; comp 10/26/01; comp 5/23/13] (Auth: HRS §464-7) (Imp: HRS §§464-7, 464-9)

§16-115-8 Seal or stamp. (a) The licensee shall use a seal or stamp that is legible and reproducible of the following design:

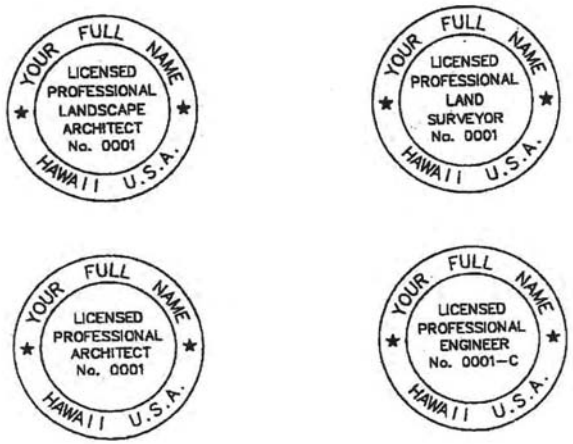
(1) Two circles - a smaller one, 1-1/8" in diameter, within a larger one, 1-1/2" in diameter. The name of the licensee and the words "Hawaii, U.S.A." shall be in the outer or annular space. The words "Licensed Professional Engineer", "Licensed Professional Architect", "Licensed Professional Land Surveyor", or "Licensed Professional Landscape Architect", together with the licensee's license number, shall be inserted in the center space;

(2) The engineer shall also insert in the center space and after the license number, the abbreviation of the engineering branch in which the engineer has especially qualified; and

(3) The engineering branch abbreviations shall be:

(A) "Ag." - Agricultural;
(B) "Ch." - Chemical;
(C) "C." - Civil;
(D) "E." - Electrical;
(E) "I." - Industrial;
(F) "M." - Mechanical; and
(G) "S." - Structural.

(4) An example of an acceptable seal or stamp is as follows:



(b) An engineer who is licensed in more than one branch shall have a seal or rubber stamp for each branch.

(c) All plans, specifications, maps, reports, surveys, and descriptions prepared by or under the supervision of a licensed professional engineer, architect, land surveyor, or landscape architect submitted to public officials for approval shall be stamped with the authorized seal or stamp and authenticated as provided in section 16-115-9. [Eff 8/29/94; am and comp 10/26/01; am and comp 5/23/13] (Auth: HRS §§464-7, 464-11) (Imp: HRS §§464-7, 464-11)

§16-115-9 Authentication: preparation or supervision of design and observation of construction. (a) All plans, specifications, maps, reports, surveys, descriptions, and every sheet in a set of design drawings prepared by or under the supervision of a licensed professional engineer, architect, land surveyor, or landscape architect shall be stamped with the authorized seal or stamp when filed with public officials. Below the seal or stamp, the authentication shall state "This work was prepared by me or under my supervision", be signed by the licensee, and state the expiration date of the license, as follows:

THIS WORK WAS PREPARED BY ME OR UNDER MY SUPERVISION.

Signature Expiration Date of the License

Provided that where applicable, the form of authentication shall be as determined by the rules of the land court, the statute relating to file plans, or other legal authorities relating to maps, surveys, descriptions, etc.

(b) In addition to the requirements of subsection (a), when applications are made for building or construction permits involving public safety or health, all plans and specifications in connection therewith shall bear the authorized seal or stamp of the duly licensed professional engineer, architect, or landscape architect charged with observation of construction pursuant to sections 464-4 and 464-5, HRS. Below the seal or stamp, the authentication shall state "Construction of this project will be under my observation", be signed by the licensee, and state the expiration date of the license, as follows:

CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.

Signature Expiration Date of the License

(c) Where the licensed professional engineer, architect, or landscape architect has responsibility for design and observation of construction, the authentication shall state "This work was prepared by me or under my supervision and construction of this project will be under my observation", be signed by the licensee, and state the expiration date of the license, as follows:

THIS WORK WAS PREPARED BY ME OR
UNDER MY SUPERVISION AND CONSTRUCTION OF THIS PROJECT
WILL BE UNDER MY OBSERVATION.

Signature Expiration Date of the License

(d) In the event the licensed professional engineer, architect, or landscape architect whose seal or stamp and signature appear in connection with the statement in subsection (b) or (c) concerning observation of construction has been removed, replaced, or is otherwise unable to discharge the licensee's duties, the licensed professional engineer, architect, or landscape architect shall so notify the appropriate public official(s) in writing within fifteen days. The notification shall include the name, if known, of the licensed professional engineer, architect, or landscape architect charged with continuing the construction observation.

(e) All signatures required under this section shall be original. The use of rubber signature stamps, or computer-generated or other facsimile_signatures is prohibited. [Eff 8/29/94; am and comp 10/26/01; am and comp 5/23/13] (Auth: HRS §§464-7, 464-11) (Imp: HRS §§464-7, 464-11)

§16-115-10 Misconduct in the practice. Misconduct in the practice of the profession of engineering, architecture, land surveying, or landscape architecture means without limitation the following:

(1) Acting for licensee's client, or employer, in matters otherwise than as a faithful agent or trustee, or accepting any remuneration other than the licensee's stated recompense for services rendered;
(2) To knowingly injure or attempt to injure falsely or maliciously, directly or indirectly, the professional reputation, prospects, or practice of another engineer, architect, land surveyor, or landscape architect;
(3) Advertising in a false, misleading, or deceptive manner;
(4) "Plan stamping"; i.e. sealing, stamping, or certifying any document which was not prepared by or supervised by the licensee; and
(5) Misrepresentation, deceit, fraud, gross negligence, and other offenses relating to misconduct of the licensee's practice. [Eff 8/29/94; am and comp 10/26/01; comp 5/23/13] (Auth: HRS §464-7) (Imp: HRS §§464-7, 464-10, 464-11)

§16-115-11 Oral testimony. (a) The board shall accept oral testimony on any item which is on the board's agenda, provided that the testimony shall be subject to the following conditions:

(1) Each person seeking to present oral testimony is requested to notify the board not later than forty-eight hours prior to the meeting, and at that time, to state the item on which testimony is to be presented;

Run Date: 2015/04/24

Hawaii Department of Transportation
Highways Division — **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72008300358 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 16000
Functional Class: RURAL:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 83
Location: Kamehameha Hwy btwn Pohaku Loa Way (N. Jct) _Punalau Place

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/29/2014															
12:00-12:15	9	5	14	06:00-06:15	45	52	97	12:00-12:15	130	100	230	06:00-06:15	103	111	214
12:15-12:30	7	8	15	06:15-06:30	60	79	139	12:15-12:30	163	119	282	06:15-06:30	119	90	209
12:30-12:45	12	5	17	06:30-06:45	62	103	165	12:30-12:45	148	132	280	06:30-06:45	106	67	173
12:45-01:00	8	4	12	06:45-07:00	53	82	135	12:45-01:00	139	121	260	06:45-07:00	99	78	177
01:00-01:15	4	2	6	07:00-07:15	77	93	170	01:00-01:15	159	135	294	07:00-07:15	92	65	157
01:15-01:30	2	1	3	07:15-07:30	81	123	204	01:15-01:30	162	123	285	07:15-07:30	85	95	180
01:30-01:45	6	5	11	07:30-07:45	77	128	205	01:30-01:45	118	133	251	07:30-07:45	78	67	145
01:45-02:00	9	4	13	07:45-08:00	86	131	217	01:45-02:00	142	119	261	07:45-08:00	69	38	107
02:00-02:15	2	3	5	08:00-08:15	95	136	231	02:00-02:15	144	163	307	08:00-08:15	66	35	101
02:15-02:30	0	1	1	08:15-08:30	75	121	196	02:15-02:30	152	168	320	08:15-08:30	45	38	83
02:30-02:45	3	1	4	08:30-08:45	92	111	203	02:30-02:45	136	162	298	08:30-08:45	69	36	105
02:45-03:00	0	5	5	08:45-09:00	94	109	203	02:45-03:00	154	152	306	08:45-09:00	53	39	92
03:00-03:15	4	2	6	09:00-09:15	91	118	209	03:00-03:15	166	155	321	09:00-09:15	50	25	75
03:15-03:30	5	6	11	09:15-09:30	100	113	213	03:15-03:30	124	181	305	09:15-09:30	47	24	71
03:30-03:45	3	7	10	09:30-09:45	101	108	209	03:30-03:45	184	136	320	09:30-09:45	51	35	86
03:45-04:00	5	5	10	09:45-10:00	113	126	239	03:45-04:00	160	162	322	09:45-10:00	42	27	69
04:00-04:15	4	14	18	10:00-10:15	129	111	240	04:00-04:15	160	151	311	10:00-10:15	33	15	48
04:15-04:30	9	20	29	10:15-10:30	112	106	218	04:15-04:30	165	154	319	10:15-10:30	40	15	55
04:30-04:45	14	23	37	10:30-10:45	107	117	224	04:30-04:45	141	128	269	10:30-10:45	27	15	42
04:45-05:00	9	29	38	10:45-11:00	144	121	265	04:45-05:00	131	128	259	10:45-11:00	29	13	42
05:00-05:15	18	55	73	11:00-11:15	150	127	277	05:00-05:15	117	127	244	11:00-11:15	36	11	47
05:15-05:30	26	53	79	11:15-11:30	152	128	280	05:15-05:30	115	115	230	11:15-11:30	32	10	42
05:30-05:45	22	69	91	11:30-11:45	133	106	239	05:30-05:45	156	119	275	11:30-11:45	21	9	30
05:45-06:00	36	71	107	11:45-12:00	173	127	300	05:45-06:00	124	104	228	11:45-12:00	11	4	15

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	339	518	857
AM - K FACTOR (%)			5.78
AM - D (%)	39.56	60.44	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	356	518	

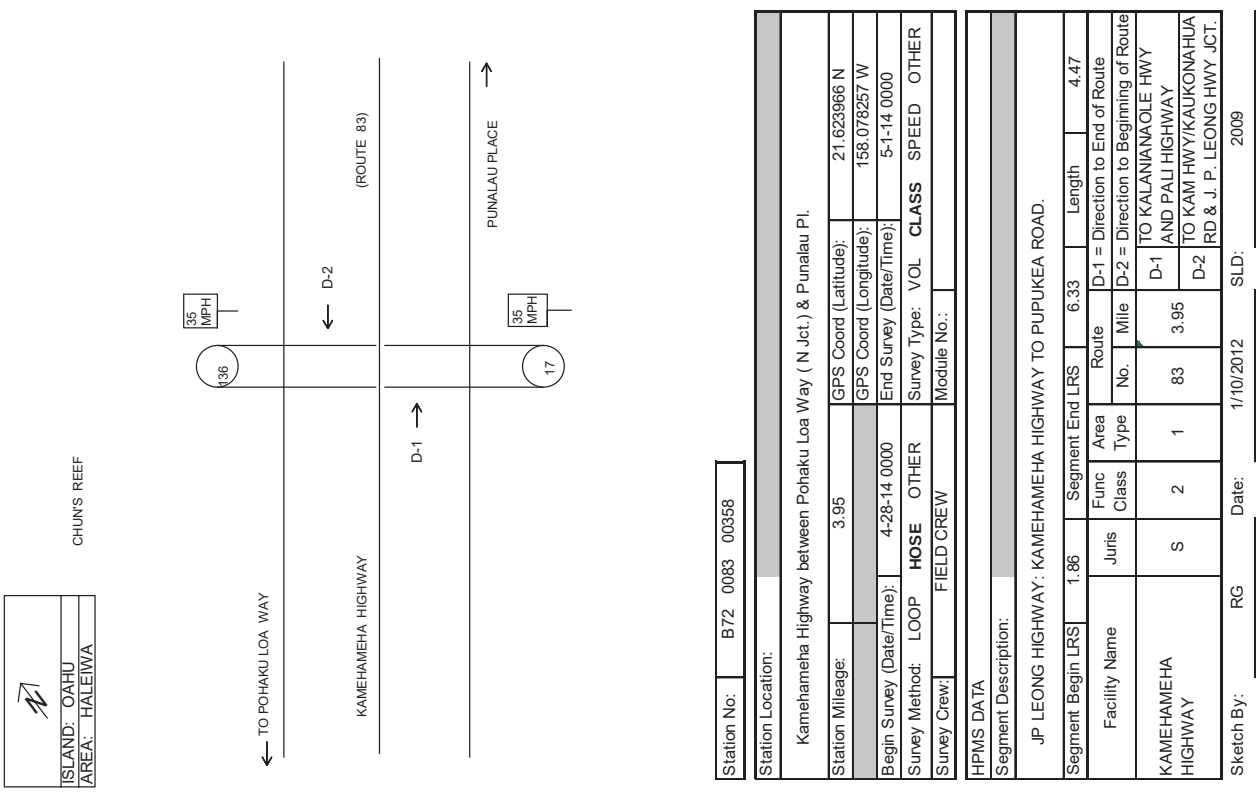
PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	669	603	1272
PM - K FACTOR (%)			8.57
PM - D (%)	52.59	47.41	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM	03:00 PM to 04:00 PM	
PM - PEAK HR VOLUME	669	634	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM		
AM - PEAK HR VOLUME	608	488	1096
AM - K FACTOR (%)			7.39
AM - D (%)	55.47	44.53	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	669	603	1272
PM - K FACTOR (%)			8.57
PM - D (%)	52.59	47.41	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	586	645	1231
DIRECTIONAL PEAK			
PEAK HR TIME	11:45 AM to 12:45 PM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	614	645	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	2,402	2,676	5,078
AM 12-HR PERIOD (00:00-12:00)	2,619	3,074	5,693
PM 6-HR PERIOD (12:00-18:00)	3,490	3,287	6,777
PM 12-HR PERIOD (12:00-24:00)	4,893	4,249	9,142
24 HOUR PERIOD	7,512	7,323	14,835
D (%)	50.64	49.36	100.00



Run Date: 2015/04/24

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section
Vehicle Classification Data Summary
2014

Site ID: B72008300358 **Route No:** 83 **Date From:** 2014/04/29 0:00
Town: Oahu **Direction:** +MP **Date To:** 2014/04/30 23:45
Location: Kamehameha Hwy btwn Pohaku Loa Way (N. Jct) _Punalau Place

Functional Classification: 2 RURAL:PRINCIPAL ARTERIAL - OTHER

REPORT TOTALS - 48 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	300	1.02%	600
PC	24715	84.04%	49429
2A-4T	3645	12.39%	7291
LIGHT VEHICLE TOTALS	28660	97.45%	57320
HEAVY VEHICLES			
Bus	139	0.47%	348
SINGLE UNIT TRUCK			
2A-6T	300	1.02%	600
3A-SU	137	0.47%	411
4A-SU	4	0.01%	16
SINGLE-TRAILER TRUCKS			
4A-ST	79	0.27%	316
5A-ST	63	0.21%	315
6A-ST	6	0.02%	36
MULTI-TRAILER TRUCKS			
5A-MT	0	0.00%	0
6A-MT	0	0.00%	0
7A-MT	20	0.07%	140
HEAVY VEHICLE TOTALS	750	2.55%	2182
CLASSIFIED VEHICLES TOTALS	29410 (A)	100.00%	59502 (B)
UNCLASSIFIED VEHICLES TOTALS	0	0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.989

ROADTUBE EQUIVALENT(B/2) = 29751 (C)

PEAK HOUR VOLUME : 1268 2014/04/29 15:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	10	(65A-1) 0.81%	285	16000	(65A-2) 1.78%	7.93%
COMBINATION (TYPE 8-13)	8	(65B-1) 0.65%	82		(65B-2) 0.51%	7.93%

Run Date: 2015/04/24

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2014 Program Count - Summary

Site ID: B72008300358 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 16000
Functional Class: RURAL:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 83
Location: Kamehameha Hwy btwn Pohaku Loa Way (N. Jct) _Punalau Place

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/30/2014															
12:00-12:15	9	10	19	06:00-06:15	41	58	99	12:00-12:15	136	100	236	06:00-06:15	118	97	215
12:15-12:30	11	7	18	06:15-06:30	67	74	141	12:15-12:30	141	102	243	06:15-06:30	96	111	207
12:30-12:45	13	2	15	06:30-06:45	55	86	141	12:30-12:45	80	107	187	06:30-06:45	100	96	196
12:45-01:00	10	6	16	06:45-07:00	55	93	148	12:45-01:00	85	140	225	06:45-07:00	106	90	196
01:00-01:15	11	0	11	07:00-07:15	73	115	188	01:00-01:15	146	166	312	07:00-07:15	91	92	183
01:15-01:30	4	4	8	07:15-07:30	87	115	202	01:15-01:30	203	153	356	07:15-07:30	92	74	166
01:30-01:45	4	2	6	07:30-07:45	75	139	214	01:30-01:45	164	130	294	07:30-07:45	102	74	176
01:45-02:00	4	1	5	07:45-08:00	82	137	219	01:45-02:00	142	156	298	07:45-08:00	80	52	132
02:00-02:15	5	4	9	08:00-08:15	65	102	167	02:00-02:15	136	128	264	08:00-08:15	84	38	122
02:15-02:30	3	2	5	08:15-08:30	94	101	195	02:15-02:30	156	147	303	08:15-08:30	59	33	92
02:30-02:45	4	3	7	08:30-08:45	77	118	195	02:30-02:45	163	127	290	08:30-08:45	57	29	86
02:45-03:00	1	4	5	08:45-09:00	72	109	181	02:45-03:00	162	136	298	08:45-09:00	57	28	85
03:00-03:15	4	3	7	09:00-09:15	79	111	190	03:00-03:15	134	125	259	09:00-09:15	55	37	92
03:15-03:30	3	3	6	09:15-09:30	79	112	191	03:15-03:30	153	164	317	09:15-09:30	55	19	74
03:30-03:45	5	6	11	09:30-09:45	83	104	187	03:30-03:45	162	152	314	09:30-09:45	55	60	115
03:45-04:00	6	9	15	09:45-10:00	86	118	204	03:45-04:00	164	144	308	09:45-10:00	50	32	82
04:00-04:15	6	9	15	10:00-10:15	114	90	204	04:00-04:15	181	157	338	10:00-10:15	36	28	64
04:15-04:30	10	15	25	10:15-10:30	103	109	212	04:15-04:30	149	167	316	10:15-10:30	34	13	47
04:30-04:45	9	28	37	10:30-10:45	102	109	211	04:30-04:45	160	159	319	10:30-10:45	38	11	49
04:45-05:00	7	28	35	10:45-11:00	119	102	221	04:45-05:00	128	133	261	10:45-11:00	33	13	46
05:00-05:15	17	37	54	11:00-11:15	111	122	233	05:00-05:15	149	121	270	11:00-11:15	22	8	30
05:15-05:30	25	43	68	11:15-11:30	116	113	229	05:15-05:30	152	104	256	11:15-11:30	14	11	25
05:30-05:45	25	51	76	11:30-11:45	126	106	232	05:30-05:45	151	137	288	11:30-11:45	19	10	29
05:45-06:00	29	68	97	11:45-12:00	131	114	245	05:45-06:00	126	140	266	11:45-12:00	10	19	29

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM		
AM - PEAK HR VOLUME	317	506	823
AM - K FACTOR (%)			5.65
AM - D (%)	38.52	61.48	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	318	506	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	654	627	1281
PM - K FACTOR (%)			8.79
PM - D (%)	51.05	48.95	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	660	627	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM		
AM - PEAK HR VOLUME	484	455	939
AM - K FACTOR (%)			6.44
AM - D (%)	51.54	48.46	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	654	627	1281
PM - K FACTOR (%)			8.79
PM - D (%)	51.05	48.95	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:00 PM to 02:00 PM		
PEAK HR VOLUME	655	605	1260
DIRECTIONAL PEAK			
PEAK HR TIME	01:00 PM to 02:00 PM	01:00 PM to 02:00 PM	
PEAK HR VOLUME	655	605	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	2,092	2,557	4,649
AM 12-HR PERIOD (00:00-12:00)	2,317	2,902	5,219
PM 6-HR PERIOD (12:00-18:00)	3,523	3,295	6,818
PM 12-HR PERIOD (12:00-24:00)	4,986	4,370	9,356
24 HOUR PERIOD	7,303	7,272	14,575
D (%)	50.11	49.89	100.00

Run Date: 2014/05/29

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2013 Program Count - Summary

Site ID: B72008300633 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 12800
Functional Class: RURAL:PRINCIPAL ARTERIAL - OTHER **Count Type:** VOLUME **Counter Type:** Tube **Route No:** 83
Location: Kamehameha Hwy btwn Sunset Elementary School _Wooden Indian Statue at 8 MP

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/16/2013															
12:00-12:15	7	4	11	06:00-06:15	30	40	70	12:00-12:15	98	111	209	06:00-06:15	97	108	205
12:15-12:30	3	7	10	06:15-06:30	49	32	81	12:15-12:30	134	104	238	06:15-06:30	102	85	187
12:30-12:45	13	8	21	06:30-06:45	62	44	106	12:30-12:45	123	108	231	06:30-06:45	90	145	235
12:45-01:00	3	4	7	06:45-07:00	61	57	118	12:45-01:00	154	131	285	06:45-07:00	84	111	195
01:00-01:15	3	3	6	07:00-07:15	82	76	158	01:00-01:15	131	132	263	07:00-07:15	79	95	174
01:15-01:30	3	2	5	07:15-07:30	98	76	174	01:15-01:30	142	185	327	07:15-07:30	70	67	137
01:30-01:45	3	3	6	07:30-07:45	98	84	182	01:30-01:45	121	116	237	07:30-07:45	47	56	103
01:45-02:00	1	3	4	07:45-08:00	119	101	220	01:45-02:00	143	127	270	07:45-08:00	58	51	109
02:00-02:15	5	4	9	08:00-08:15	83	130	213	02:00-02:15	129	139	268	08:00-08:15	46	43	89
02:15-02:30	3	3	6	08:15-08:30	76	91	167	02:15-02:30	131	169	300	08:15-08:30	41	34	75
02:30-02:45	2	2	4	08:30-08:45	75	85	160	02:30-02:45	92	122	214	08:30-08:45	47	36	83
02:45-03:00	2	1	3	08:45-09:00	104	96	200	02:45-03:00	177	119	296	08:45-09:00	38	35	73
03:00-03:15	2	2	4	09:00-09:15	99	111	210	03:00-03:15	117	144	261	09:00-09:15	37	29	66
03:15-03:30	1	3	4	09:15-09:30	85	106	191	03:15-03:30	114	127	241	09:15-09:30	35	37	72
03:30-03:45	4	3	7	09:30-09:45	100	87	187	03:30-03:45	109	105	214	09:30-09:45	35	27	62
03:45-04:00	3	3	6	09:45-10:00	87	97	184	03:45-04:00	133	105	238	09:45-10:00	34	47	81
04:00-04:15	3	4	7	10:00-10:15	79	108	187	04:00-04:15	126	140	266	10:00-10:15	27	39	66
04:15-04:30	5	8	13	10:15-10:30	98	102	200	04:15-04:30	150	117	267	10:15-10:30	22	20	42
04:30-04:45	8	9	17	10:30-10:45	100	95	195	04:30-04:45	143	134	277	10:30-10:45	27	16	43
04:45-05:00	11	6	17	10:45-11:00	84	86	170	04:45-05:00	104	123	227	10:45-11:00	18	17	35
05:00-05:15	23	17	40	11:00-11:15	116	80	196	05:00-05:15	134	135	269	11:00-11:15	22	13	35
05:15-05:30	26	22	48	11:15-11:30	117	97	214	05:15-05:30	121	98	219	11:15-11:30	13	15	28
05:30-05:45	26	38	64	11:30-11:45	109	90	199	05:30-05:45	119	123	242	11:30-11:45	12	20	32
05:45-06:00	26	39	65	11:45-12:00	109	112	221	05:45-06:00	96	121	217	11:45-12:00	7	13	20

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	398	391	789
AM - K FACTOR (%)			6.11
AM - D (%)	50.44	49.56	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM	07:45 AM to 08:45 AM	
AM - PEAK HR VOLUME	398	407	

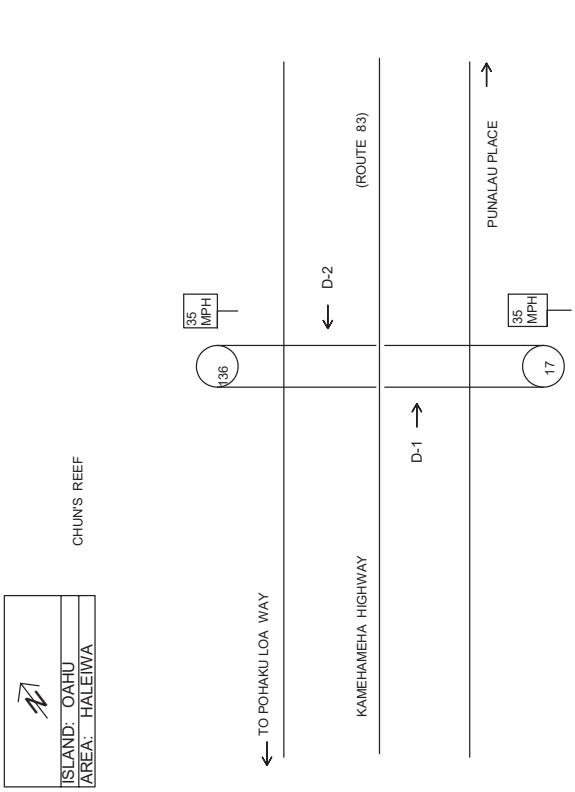
PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	552	496	1048
PM - K FACTOR (%)			8.12
PM - D (%)	52.67	47.33	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	552	514	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM		
AM - PEAK HR VOLUME	451	379	830
AM - K FACTOR (%)			6.43
AM - D (%)	54.34	45.66	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	12:45 PM to 01:45 PM		
PM - PEAK HR VOLUME	548	564	1112
PM - K FACTOR (%)			8.61
PM - D (%)	49.28	50.72	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:45 PM to 01:45 PM		
PEAK HR VOLUME	548	564	1112
DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM	01:15 PM to 02:15 PM	
PEAK HR VOLUME	550	567	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	2,120	2,083	4,203
AM 12-HR PERIOD (00:00-12:00)	2,306	2,281	4,587
PM 6-HR PERIOD (12:00-18:00)	3,041	3,035	6,076
PM 12-HR PERIOD (12:00-24:00)	4,129	4,194	8,323
24 HOUR PERIOD	6,435	6,475	12,910
D (%)	49.85	50.15	100.00



Station No: B72 0083 00358

Station Location:

Kamehameha Highway between Pohaku Loa Way (N Jct.) & Punalau Pl.

Station Mileage: 3.95 GPS Coord (Latitude): 21.623966 N
GPS Coord (Longitude): 158.078257 W
Begin Survey (Date/Time): 4-28-14 0000 End Survey (Date/Time): 5-1-14 0000
Survey Method: LOOP **HOSE** OTHER Survey Type: VOL **CLASS** SPEED OTHER
Survey Crew: FIELD CREW Module No.:

HPMS DATA

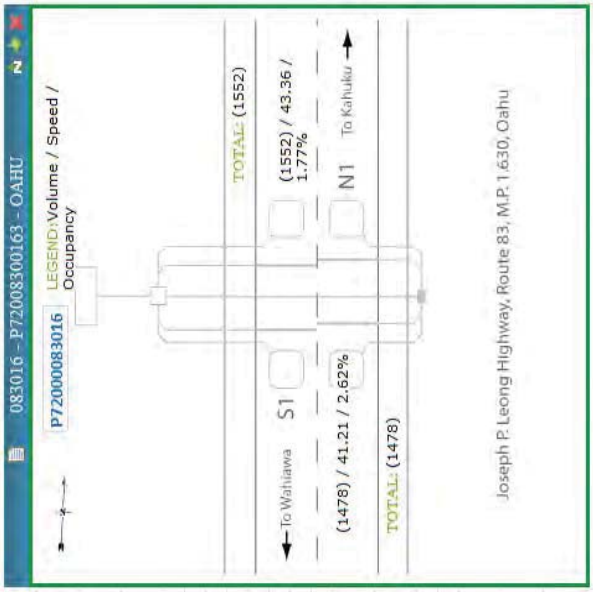
Segment Description:

JP LEONG HIGHWAY: KAMEHAMEHA HIGHWAY TO PUPUKEA ROAD.

Segment Begin LRS	1.86	Segment End LRS	6.33	Length	4.47

Facility Name	Juris	Func Class	Area Type	Route No.	Mile	
KAMEHAMEHA HIGHWAY	S	2	1	83	3.95	D-1 = Direction to End of Route D-2 = Direction to Beginning of Route D-1 TO KALANIANAOLE HWY AND PALI HIGHWAY D-2 TO KAM HWY/KAUKONAHUA RD & J. P. LEONG HWY JCT.

Sketch By: RG Date: 1/10/2012 SLD: 2009



Run Date: 2014/05/29

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2013 Program Count - Summary

Site ID: B72008300633 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 12800
Functional Class: RURAL:PRINCIPAL ARTERIAL - OTHER **Count Type:** VOLUME **Counter Type:** Tube **Route No:** 83
Location: Kamehameha Hwy btwn Sunset Elementary School _Wooden Indian Statue at 8 MP

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/17/2013															
12:00-12:15	8	10	18	06:00-06:15	36	38	74	12:00-12:15	121	104	225	06:00-06:15	93	94	187
12:15-12:30	8	10	18	06:15-06:30	46	33	79	12:15-12:30	116	119	235	06:15-06:30	130	96	226
12:30-12:45	5	9	14	06:30-06:45	62	44	106	12:30-12:45	116	92	208	06:30-06:45	86	109	195
12:45-01:00	5	7	12	06:45-07:00	68	61	129	12:45-01:00	143	135	278	06:45-07:00	84	85	169
01:00-01:15	1	8	9	07:00-07:15	78	67	145	01:00-01:15	116	117	233	07:00-07:15	77	105	182
01:15-01:30	3	0	3	07:15-07:30	81	69	150	01:15-01:30	105	103	208	07:15-07:30	62	79	141
01:30-01:45	3	5	8	07:30-07:45	101	74	175	01:30-01:45	128	97	225	07:30-07:45	70	50	120
01:45-02:00	2	2	4	07:45-08:00	90	114	204	01:45-02:00	117	119	236	07:45-08:00	58	46	104
02:00-02:15	3	3	6	08:00-08:15	80	171	251	02:00-02:15	113	132	245	08:00-08:15	42	43	85
02:15-02:30	0	2	2	08:15-08:30	67	127	194	02:15-02:30	168	123	291	08:15-08:30	45	33	78
02:30-02:45	1	3	4	08:30-08:45	63	104	167	02:30-02:45	131	127	258	08:30-08:45	50	26	76
02:45-03:00	4	1	5	08:45-09:00	95	87	182	02:45-03:00	128	144	272	08:45-09:00	45	33	78
03:00-03:15	2	1	3	09:00-09:15	66	85	151	03:00-03:15	126	124	250	09:00-09:15	43	35	78
03:15-03:30	2	2	4	09:15-09:30	84	78	162	03:15-03:30	111	120	231	09:15-09:30	38	27	65
03:30-03:45	2	2	4	09:30-09:45	87	79	166	03:30-03:45	120	126	246	09:30-09:45	37	31	68
03:45-04:00	2	3	5	09:45-10:00	102	96	198	03:45-04:00	106	155	261	09:45-10:00	27	45	72
04:00-04:15	7	2	9	10:00-10:15	69	102	171	04:00-04:15	111	132	243	10:00-10:15	27	39	66
04:15-04:30	2	3	5	10:15-10:30	88	81	169	04:15-04:30	158	140	298	10:15-10:30	22	28	50
04:30-04:45	9	9	18	10:30-10:45	100	98	198	04:30-04:45	136	145	281	10:30-10:45	30	23	53
04:45-05:00	9	12	21	10:45-11:00	93	85	178	04:45-05:00	125	110	235	10:45-11:00	11	16	27
05:00-05:15	12	16	28	11:00-11:15	98	81	179	05:00-05:15	106	160	266	11:00-11:15	16	14	30
05:15-05:30	19	21	40	11:15-11:30	97	99	196	05:15-05:30	127	148	275	11:15-11:30	10	12	22
05:30-05:45	24	32	56	11:30-11:45	96	100	196	05:30-05:45	112	130	242	11:30-11:45	13	13	26
05:45-06:00	40	33	73	11:45-12:00	117	118	235	05:45-06:00	94	114	208	11:45-12:00	7	14	21

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	338	486	824
AM - K FACTOR (%)			6.54
AM - D (%)	41.02	58.98	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM	07:45 AM to 08:45 AM	
AM - PEAK HR VOLUME	352	516	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	511	572	1083
PM - K FACTOR (%)			8.60
PM - D (%)	47.18	52.82	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	530	572	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	338	486	824
AM - K FACTOR (%)			6.54
AM - D (%)	41.02	58.98	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	511	572	1083
PM - K FACTOR (%)			8.60
PM - D (%)	47.18	52.82	100.00

NON-COMMUTER PERIOD (09:00-15:00)		
TWO DIRECTIONAL PEAK		
PEAK HR TIME	02:00 PM to 03:00 PM	
PEAK HR VOLUME	540	526	1066
DIRECTIONAL PEAK		
PEAK HR TIME	02:00 PM to 03:00 PM	02:00 PM to 03:00 PM
PEAK HR VOLUME	540	526

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	1,964	2,091	4,055
AM 12-HR PERIOD (00:00-12:00)	2,137	2,287	4,424
PM 6-HR PERIOD (12:00-18:00)	2,934	3,016	5,950
PM 12-HR PERIOD (12:00-24:00)	4,057	4,112	8,169
24 HOUR PERIOD	6,194	6,399	12,593
D (%)	49.19	50.81	100.00

STATION: 083016
STATION DESCRIPTION: 083016 Joseph P. Leong Highway, Route 83, MP 1.63
YEAR: 2016 - 2016
LOC'N 21.598398 -158.099586
Oahu
DIRECTION 01 (D1): Northbound, MOV 1

MONTH	MON	TUE	WED	THU	FRI	SAT	SUN	WEEKDAY AVERAGE	MONTHLY AVERAGE	AADT MON AVE	AADT AVE WKDY
January	5458	5480	5681	5874	6394	6473	5690	5777	5864	0.99534	1.01030
February	5507	5888	5966	5846	6263	6649	5457	5894	5939	0.98276	0.99033
March	5609	5510	5443	5696	5815	6414	5511	5614	5714	1.02154	1.03964
April	5254	5449	5491	5626	6075	6667	5537	5579	5728	1.01898	1.04627
May	5299	5382	5367	5694	6120	6542	6006	5572	5773	1.01111	1.04750
June	5564	5768	5621	5926	6102	6931	5979	5796	5985	0.97533	1.00700
July	5531	5978	5901	6109	6544	7080	6144	6012	6184	0.94391	0.97081
August	5365	5735	5556	5973	6366	6659	5423	5799	5868	0.99470	1.00654
September	5098	5422	5327	5407	5811	6111	5614	5413	5542	1.05329	1.07827
October	5390	5638	5483	5765	5944	6437	5500	5644	5737	1.01748	1.03420
November	5394	5373	5545	5899	6053	6587	5602	5653	5779	1.01005	1.03260
December	6049	6159	6111	5834	6238	5842	5284	6078	5931	0.98411	0.96026
AVERAGE	5460	5648	5624	5804	6144	6533	5645	AVERAGE 5736	D1 AADT 5837		

STATION: 083016
STATION DESCRIPTION: 083016 Joseph P. Leong Highway, Route 83, MP 1.63
YEAR: 2016 - 2016
LOC'N 21.598398 -158.099586
Oahu
DIRECTION 01 (D1): Northbound, MOV 1
DIRECTION 02 (D2): Southbound, MOV 5

MONTH	MON	TUE	WED	THU	FRI	SAT	SUN	WEEKDAY AVERAGE	MONTHLY AVERAGE	AADT MON AVE	AADT AVE WKDY
January	10714	10848	11140	11526	12384	12523	11246	11322	11483	0.99548	1.00961
February	10725	11313	11501	11401	12166	12875	10797	11421	11539	0.99061	1.00089
March	10944	10806	10697	11053	11287	12439	10945	10957	11167	1.02364	1.04324
April	10384	10722	10853	10967	11809	12847	11057	10947	11234	1.01754	1.04424
May	10527	10716	10595	11205	11883	12617	11792	10985	11334	1.00860	1.04059
June	10857	11290	11077	11600	11839	13262	11699	11333	11660	0.98033	1.00870
July	10866	11708	11563	11923	12623	13625	12119	11737	12061	0.94777	0.97396
August	10745	11359	10964	11718	12350	13151	10824	11427	11587	0.98653	1.00036
September	10214	10762	10521	10734	11421	11809	11124	10730	10940	1.04485	1.06533
October	10765	11116	10762	11316	11565	12415	10933	11105	11267	1.01455	1.02941
November	10598	10625	11004	11461	11712	12675	11153	11080	11318	1.00998	1.03171
December	11796	12090	12004	11471	12084	11349	10278	11889	11582	0.98700	0.96149
AVERAGE	10761	11113	11057	11364	11927	12632	11164	AVERAGE 11244	D1+D2 AADT 11431		

K-FACTOR 9.48%
K-FACTOR PERIOD PM
D-FACTOR 52.40%

January, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
1/1/2016	Fri	*		50.2	49.8	5127	5089	10216	1852	1086	2938	502	248	3275	4003	7278	568	620
1/2/2016	Sat			51.2	48.8	6223	5922	12145	2212	1498	3710	606	340	4011	4424	8435	562	545
1/3/2016	Sun			50.7	49.3	5510	5360	10870	2275	1384	3659	549	311	3235	3976	7211	490	493
1/4/2016	Mon			51.6	48.4	6105	5718	11823	2465	1995	4460	562	300	3640	3723	7363	438	531
1/5/2016	Tue			51.0	49.0	5639	5416	11055	2078	2098	4176	473	319	3561	3318	6879	455	465
1/6/2016	Wed			51.0	49.0	5562	5339	10901	2146	2104	4250	426	310	3416	3235	6651	447	505
1/7/2016	Thu			50.6	49.4	5886	5751	11637	2240	2128	4368	468	267	3646	3623	7269	492	560
1/8/2016	Fri			51.1	48.9	6244	5968	12212	2392	2307	4699	444	324	3852	3661	7513	518	527
1/9/2016	Sat			51.7	48.3	6141	5732	11873	2286	1753	4039	516	358	3855	3979	7834	436	580
1/10/2016	Sun			50.4	49.6	5492	5415	10907	2196	1518	3714	524	323	3296	3897	7193	396	533
1/11/2016	Mon			50.6	49.4	5026	4911	9937	1773	2092	3865	337	292	3253	2819	6072	457	444
1/12/2016	Tue			50.7	49.3	5518	5360	10878	2038	2185	4223	373	302	3480	3175	6655	474	476
1/13/2016	Wed			51.1	48.9	5714	5469	11183	2176	2217	4393	368	332	3538	3252	6790	512	490
1/14/2016	Thu			51.0	49.0	5974	5748	11722	2274	2350	4624	384	353	3700	3398	7098	523	521
1/15/2016	Fri			52.0	48.0	6781	6269	13050	2602	2477	5079	546	409	4179	3792	7971	523	532
1/16/2016	Sat			51.2	48.8	6134	5839	11973	2368	1817	4185	536	362	3766	4022	7788	388	606
1/17/2016	Sun			50.3	49.7	5556	5482	11038	2176	1501	3677	515	337	3380	3981	7361	417	507
1/18/2016	Mon	*		49.8	50.2	6293	6336	12629	2615	1843	4458	613	390	3678	4493	8171	455	704
1/19/2016	Tue			49.9	50.1	5404	5432	10836	2095	2201	4296	449	293	3309	3231	6540	438	465
1/20/2016	Wed			50.8	49.2	5472	5303	10775	1981	2278	4259	423	300	3491	3025	6516	440	512
1/21/2016	Thu			50.9	49.1	5604	5416	11020	1974	2224	4198	413	281	3630	3192	6822	442	478
1/22/2016	Fri			51.5	48.5	6212	5860	12072	2291	2240	4531	412	327	3921	3620	7541	506	522
1/23/2016	Sat			51.8	48.2	6789	6306	13095	2719	1840	4559	592	438	4070	4466	8536	545	512
1/24/2016	Sun			49.0	51.0	5570	5787	11357	2446	1740	4186	516	366	3124	4047	7171	384	529
1/25/2016	Mon			50.5	49.5	5244	5139	10383	1896	2074	3970	396	278	3348	3065	6413	443	463
1/26/2016	Tue			50.5	49.5	5360	5263	10623	1916	2118	4034	405	285	3444	3145	6589	426	462
1/27/2016	Wed			51.1	48.9	5977	5722	11699	2421	2236	4657	495	292	3556	3486	7042	508	449
1/28/2016	Thu			51.4	48.6	6030	5696	11726	2565	2243	4808	456	327	3465	3453	6918	442	455
1/29/2016	Fri			51.9	48.1	6337	5863	12200	2698	2157	4855	448	321	3639	3706	7345	455	506
1/30/2016	Sat			52.3	47.7	7078	6453	13531	3098	1960	5058	591	386	3980	4493	8473	575	487
1/31/2016	Sun			52.4	47.6	6321	5737	12058	2718	1673	4391	547	395	3603	4064	7667	577	411

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

STATION: 083016
STATION DESCRIPTION: 083016 Joseph P. Leong Highway, Route 83, MP 1.63
YEAR: 2016 - 2016
LOC'N 21.598398 -158.099586

Oahu
DIRECTION 02 (D2): Southbound, MOV 5

MONTH	MON	TUE	WED	THU	FRI	SAT	SUN	WEEKDAY AVERAGE	MONTHLY AVERAGE	AADT MON AVE	AADT AVE WKDY
January	5256	5368	5458	5653	5990	6050	5556	5545	5619	0.99564	1.00889
February	5218	5425	5535	5555	5903	6225	5340	5527	5600	0.99895	1.01214
March	5336	5296	5254	5356	5473	6025	5434	5343	5453	1.02583	1.04703
April	5130	5273	5363	5341	5734	6181	5520	5368	5506	1.01605	1.04214
May	5227	5335	5228	5511	5763	6075	5786	5413	5561	1.00600	1.03349
June	5292	5522	5455	5675	5737	6331	5720	5536	5676	0.98561	1.01047
July	5336	5731	5662	5815	6079	6545	5975	5724	5877	0.95183	0.97727
August	5380	5624	5408	5745	5983	6492	5402	5628	5719	0.97816	0.99400
September	5116	5339	5194	5327	5610	5698	5510	5317	5399	1.03618	1.05216
October	5375	5478	5279	5551	5622	5978	5433	5461	5531	1.01151	1.02446
November	5204	5252	5459	5562	5659	6088	5552	5427	5539	1.00991	1.03077
December	5747	5931	5893	5636	5846	5507	4994	5811	5651	0.99003	0.96277
AVERAGE	5301	5464	5432	5560	5783	6100	5518	AVERAGE 5508	D2 AADT 5594		

March, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
3/1/2016	Tue			51.6	48.4	5602	5245	10847	2028	2237	4265	449	287	3574	3008	6582	535	431
3/2/2016	Wed			50.9	49.1	5282	5099	10381	1902	2153	4055	377	291	3380	2946	6326	437	398
3/3/2016	Thu			51.0	49.0	5445	5223	10668	1991	2200	4191	364	293	3454	3023	6477	474	440
3/4/2016	Fri			51.6	48.4	5970	5606	11576	2167	2140	4307	423	310	3803	3466	7269	520	467
3/5/2016	Sat			52.6	47.4	6766	6103	12869	3008	1961	4969	491	405	3758	4142	7900	481	541
3/6/2016	Sun			50.0	50.0	5448	5444	10892	2156	1532	3688	541	310	3292	3912	7204	547	420
3/7/2016	Mon			50.6	49.4	5311	5193	10504	1942	2208	4150	406	281	3369	2985	6354	455	462
3/8/2016	Tue			50.4	49.6	5020	4944	9964	2017	2314	4331	270	423	3003	2630	5633	373	473
3/9/2016	Wed			50.3	49.7	5136	5080	10216	1827	2164	3991	398	309	3309	2916	6225	445	399
3/10/2016	Thu			51.4	48.6	5383	5097	10480	1960	2077	4037	389	274	3423	3020	6443	482	479
3/11/2016	Fri			51.1	48.9	5826	5575	11401	2045	2291	4336	267	424	3781	3284	7065	478	472
3/12/2016	Sat			50.2	49.8	5774	5735	11509	2178	1774	3952	436	343	3596	3961	7557	432	578
3/13/2016	Sun			50.2	49.8	5395	5345	10740	2294	1574	3868	510	315	3101	3771	6872	468	423
3/14/2016	Mon			51.0	49.0	5318	5102	10420	2139	2158	4297	420	291	3179	2944	6123	396	462
3/15/2016	Tue			50.9	49.1	5565	5359	10924	2218	2137	4355	435	342	3347	3222	6569	440	484
3/16/2016	Wed			50.7	49.3	5249	5100	10349	1859	2106	3965	387	286	3390	2994	6384	466	431
3/17/2016	Thu			52.0	48.0	5764	5321	11085	2001	2050	4051	431	305	3763	3271	7034	523	478
3/18/2016	Fri			51.9	48.1	5648	5237	10885	2037	2148	4185	443	334	3611	3089	6700	485	455
3/19/2016	Sat			52.2	47.8	6476	5928	12404	2408	1745	4153	550	330	4068	4183	8251	533	507
3/20/2016	Sun			50.8	49.2	5690	5513	11203	2354	1551	3905	543	305	3336	3962	7298	539	436
3/21/2016	Mon			51.5	48.5	5833	5504	11337	2295	2115	4410	427	343	3538	3389	6927	488	490
3/22/2016	Tue			51.0	49.0	5898	5660	11558	2408	2203	4611	473	375	3490	3457	6947	509	466
3/23/2016	Wed			51.2	48.8	6033	5746	11779	2382	2223	4605	475	332	3651	3523	7174	427	534
3/24/2016	Thu			51.8	48.2	6270	5833	12103	2400	2248	4648	482	348	3870	3585	7455	543	487
3/25/2016	Fri	*		51.6	48.4	6112	5728	11840	2649	2395	5044	555	577	3463	3333	6796	474	394
3/26/2016	Sat			51.2	48.8	6639	6334	12973	2856	1903	4759	594	411	3783	4431	8214	522	549
3/27/2016	Sun	*		50.6	49.4	6149	5999	12148	2861	1516	4377	604	364	3288	4483	7771	537	427
3/28/2016	Mon			51.9	48.1	5972	5543	11515	2321	2083	4404	482	322	3651	3460	7111	456	490
3/29/2016	Tue			50.9	49.1	5463	5272	10735	1952	2159	4111	423	261	3511	3113	6624	443	494
3/30/2016	Wed			51.2	48.8	5513	5247	10760	2139	2237	4376	415	296	3374	3010	6384	447	440
3/31/2016	Thu			51.4	48.6	5620	5307	10927	2208	2290	4498	408	322	3412	3017	6429	488	450

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

February, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
2/1/2016	Mon			51.6	48.4	5666	5324	10990	2186	2151	4337	424	279	3480	3173	6653	420	459
2/2/2016	Tue			50.7	49.3	5746	5577	11323	2217	2114	4331	400	300	3529	3463	6992	484	555
2/3/2016	Wed			51.1	48.9	5644	5402	11046	2165	2245	4410	417	279	3479	3157	6636	481	471
2/4/2016	Thu			51.5	48.5	6139	5770	11909	2437	2271	4708	471	344	3702	3499	7201	552	467
2/5/2016	Fri			51.6	48.4	6494	6080	12574	2549	2363	4912	392	382	3945	3717	7662	566	471
2/6/2016	Sat			51.8	48.2	6273	5836	12109	2537	1936	4473	537	368	3736	3900	7636	408	627
2/7/2016	Sun			50.5	49.5	4369	4280	8649	1636	1411	3047	380	318	2733	2869	5602	424	330
2/8/2016	Mon			50.2	49.8	5420	5367	10787	1907	2206	4113	368	310	3513	3161	6674	478	462
2/9/2016	Tue			55.3	44.7	7063	5704	12767	2196	2245	4441	423	316	4867	3459	8326	509	475
2/10/2016	Wed			51.0	49.0	6319	6078	12397	3910	2805	6715	682	192	2409	3273	5682	284	406
2/11/2016	Thu			50.5	49.5	5436	5338	10774	2015	2155	4170	437	270	3421	3183	6604	436	461
2/12/2016	Fri			51.5	48.5	6233	5866	12099	2240	2249	4489	421	342	3993	3617	7610	530	491
2/13/2016	Sat			52.0	48.0	7009	6459	13468	2822	1930	4752	614	386	4187	4529	8716	594	461
2/14/2016	Sun			51.7	48.3	6407	5992	12399	2645	1517	4162	651	341	3762	4475	8237	563	488
2/15/2016	Mon	*		50.5	49.5	6318	6193	12511	2498	1868	4366	586	375	3820	4325	8145	551	552
2/16/2016	Tue			50.9	49.1	5419	5218	10637	2015	2320	4335	423	334	3404	2898	6302	487	465
2/17/2016	Wed			50.4	49.6	5382	5297	10679	1919	2338	4257	377	318	3463	2959	6422	480	459
2/18/2016	Thu			50.0	50.0	5593	5589	11182	2162	2341	4503	420	338	3431	3248	6679	424	483
2/19/2016	Fri			51.3	48.7	6062	5763	11825	2277	2239	4516	427	343	3785	3524	7309	521	460
2/20/2016	Sat			51.5	48.5	6890	6500	13390	2886	2039	4925	580	442	4004	4461	8465	557	511
2/21/2016	Sun			50.6	49.4	5443	5315	10758	2161	1564	3725	495	318	3282	3751	7033	465	583
2/22/2016	Mon			53.3	46.7	5597	4897	10494	2222	2144	4366	483	274	3375	2753	6128	464	359
2/23/2016	Tue			50.6	49.4	5324	5201	10525	1885	2218	4103	376	292	3439	2983	6422	445	456
2/24/2016	Wed			54.9	45.1	6518	5364	11882	1968	2196	4164	373	293	4550	3168	7718	501	434
2/25/2016	Thu			52.9	47.1	6214	5523	11737	3665	1568	5233	462	237	2549	3955	6504	352	449
2/26/2016	Fri		1	51.8	48.2	6016	5604	11620	2162	2262	4424	427	324	3854	3342	7196	489	443
2/27/2016	Sat			51.3	48.7	6425	6106	12531	2542	1693	4235	530	291	3883	4413	8296	555	436
2/28/2016	Sun			49.3	50.7	5607	5773	11380	2401	1686	4087	522	346	3206	4087	7293	495	438
2/29/2016	Mon			50.3	49.7	5345	5282	10627	1806	2196	4002	369	284	3539	3086	6625	434	448

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

May, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
5/1/2016	Sun			50.3	49.7	6093	6013	12106	2630	1724	4354	549	393	3463	4289	7752	506	542
5/2/2016	Mon			50.0	50.0	5206	5214	10420	1914	2188	4102	291	388	3292	3026	6318	459	431
5/3/2016	Tue			50.8	49.2	5133	4970	10103	1932	2137	4069	375	274	3201	2833	6034	409	410
5/4/2016	Wed			50.6	49.4	5168	5052	10220	1860	2154	4014	390	290	3308	2898	6206	457	410
5/5/2016	Thu			50.6	49.4	5788	5658	11446	2446	2253	4699	405	340	3342	3405	6747	474	471
5/6/2016	Fri			51.1	48.9	5857	5604	11461	2198	2242	4440	404	305	3659	3362	7021	450	465
5/7/2016	Sat			50.8	49.2	5784	5592	11376	2066	1814	3880	478	347	3718	3778	7496	485	479
5/8/2016	Sun			51.0	49.0	5349	5140	10489	2078	1409	3487	511	325	3271	3731	7002	535	469
5/9/2016	Mon			50.6	49.4	5039	4911	9950	1816	2108	3924	245	366	3223	2803	6026	444	416
5/10/2016	Tue			50.3	49.7	5280	5217	10497	1868	2165	4033	350	291	3412	3052	6464	514	431
5/11/2016	Wed			50.7	49.3	5361	5209	10570	1994	2162	4156	374	286	3367	3047	6414	444	437
5/12/2016	Thu			51.0	49.0	5608	5384	10992	2087	2198	4285	407	269	3521	3186	6707	461	472
5/13/2016	Fri			52.3	47.7	6267	5705	11972	2279	2179	4458	439	306	3988	3526	7514	524	474
5/14/2016	Sat			51.5	48.5	6624	6229	12853	2884	2050	4934	546	389	3740	4179	7919	438	559
5/15/2016	Sun			50.1	49.9	6034	6005	12039	2412	1618	4030	563	342	3622	4387	8009	561	455
5/16/2016	Mon			50.2	49.8	5409	5359	10768	1958	2165	4123	415	289	3451	3194	6645	446	467
5/17/2016	Tue			50.0	50.0	5508	5517	11025	2091	2131	4222	410	296	3417	3386	6803	424	540
5/18/2016	Wed			50.3	49.7	5375	5303	10678	1902	2140	4042	413	298	3473	3163	6636	449	427
5/19/2016	Thu			50.6	49.4	5852	5721	11573	2215	2160	4375	416	315	3637	3561	7198	471	523
5/20/2016	Fri			51.9	48.1	6397	5932	12329	2512	2298	4810	483	303	3885	3634	7519	448	518
5/21/2016	Sat			51.6	48.4	6935	6507	13442	2727	1796	4523	522	379	4208	4711	8919	589	500
5/22/2016	Sun			50.9	49.1	6112	5897	12009	2605	1653	4258	589	371	3507	4244	7751	628	389
5/23/2016	Mon			50.5	49.5	5543	5425	10968	2111	2119	4230	463	276	3432	3306	6738	429	500
5/24/2016	Tue			49.2	50.8	5683	5864	11547	2066	2151	4217	427	289	3617	3713	7330	441	572
5/25/2016	Wed			51.0	49.0	5564	5349	10913	2155	2289	4444	298	424	3409	3060	6469	441	406
5/26/2016	Thu			51.1	48.9	5526	5282	10808	2265	2197	4462	381	329	3261	3085	6346	389	408
5/27/2016	Fri			50.6	49.4	5958	5812	11770	2342	2059	4401	495	312	3616	3753	7369	421	472
5/28/2016	Sat			53.3	46.7	6825	5973	12798	2833	1720	4553	599	327	3992	4253	8245	637	352
5/29/2016	Sun			52.3	47.7	6443	5876	12319	2769	1522	4291	649	289	3674	4354	8028	635	349
5/30/2016	Mon	*		50.8	49.2	6218	6026	12244	3131	1676	4807	662	331	3087	4350	7437	617	473
5/31/2016	Tue			51.0	49.0	5304	5106	10410	1932	2222	4154	346	366	3372	2884	6256	440	386

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

April, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
4/1/2016	Fri			52.0	48.0	5934	5476	11410	2237	2251	4488	439	347	3697	3225	6922	581	406
4/2/2016	Sat			52.0	48.0	6638	6120	12758	2701	1905	4606	517	370	3937	4215	8152	616	473
4/3/2016	Sun			50.0	50.0	6108	6106	12214	2598	1614	4212	522	318	3510	4492	8002	531	463
4/4/2016	Mon			51.0	49.0	5352	5151	10503	2105	2152	4257	403	288	3247	2999	6246	426	409
4/5/2016	Tue			50.8	49.2	5334	5161	10495	2089	2187	4276	414	271	3245	2974	6219	462	437
4/6/2016	Wed			50.6	49.4	5331	5212	10543	1906	2216	4122	363	301	3425	2996	6421	450	428
4/7/2016	Thu			52.6	47.4	5368	4838	10206	1894	1812	3706	332	398	3474	3026	6500	494	407
4/8/2016	Fri			52.0	48.0	6431	5945	12376	2450	2328	4778	350	434	3981	3617	7598	555	475
4/9/2016	Sat			51.5	48.5	6917	6508	13425	2929	2009	4938	627	405	3988	4499	8487	569	533
4/10/2016	Sun			50.3	49.7	5863	5803	11666	2679	1624	4303	575	350	3184	4179	7363	506	491
4/11/2016	Mon			50.7	49.3	5307	5158	10465	1956	2164	4120	395	289	3351	2994	6345	460	413
4/12/2016	Tue			50.9	49.1	5321	5140	10461	2016	2125	4141	418	267	3305	3015	6320	442	495
4/13/2016	Wed			51.0	49.0	5462	5254	10716	2054	2186	4240	337	342	3408	3068	6476	420	507
4/14/2016	Thu			51.4	48.6	5674	5366	11040	2134	2148	4282	421	291	3540	3218	6758	467	480
4/15/2016	Fri			51.5	48.5	6119	5753	11872	2264	2355	4619	389	346	3855	3398	7253	487	448
4/16/2016	Sat			51.8	48.2	6311	5879	12190	2556	1881	4437	501	364	3755	3998	7753	576	384
4/17/2016	Sun			49.3	50.7	4601	4729	9330	1950	1643	3593	388	344	2651	3086	5737	380	530
4/18/2016	Mon			50.4	49.6	5133	5045	10178	1804	2100	3904	265	366	3329	2945	6274	429	433
4/19/2016	Tue			51.6	48.4	5573	5232	10805	2139	2129	4268	399	280	3434	3103	6537	479	432
4/20/2016	Wed			50.5	49.5	5566	5465	11031	2098	2282	4380	399	326	3468	3183	6651	440	460
4/21/2016	Thu			50.4	49.6	5738	5639	11377	2190	2261	4451	394	336	3548	3378	6926	517	504
4/22/2016	Fri			51.3	48.7	6181	5869	12050	2184	2210	4394	360	370	3997	3659	7656	510	489
4/23/2016	Sat			51.8	48.2	6526	6063	12589	2971	1956	4927	608	396	3555	4107	7662	511	461
4/24/2016	Sun			50.6	49.4	5574	5443	11017	2398	1583	3981	494	316	3176	3860	7036	507	397
4/25/2016	Mon			50.3	49.7	5223	5165	10388	1982	2150	4132	374	310	3241	3015	6256	435	433
4/26/2016	Tue			50.0	50.0	5568	5558	11126	2152	2252	4404	331	440	3416	3306	6722	437	481
4/27/2016	Wed			50.4	49.6	5603	5520	11123	2097	2315	4412	275	462	3506	3205	6711	499	433
4/28/2016	Thu			50.9	49.1	5724	5520	11244	2213	2271	4484	277	468	3511	3249	6760	469	464
4/29/2016	Fri			50.4	49.6	5708	5628	11336	2130	2193	4323	401	285	3578	3435	7013	437	495
4/30/2016	Sat			52.3	47.7	6942	6333	13275	2898	1858	4756	524	366	4044	4475	8519	591	487

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

July, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
7/1/2016	Fri			52.7	47.3	7165	6430	13595	2792	2270	5062	583	336	4373	4160	8533	561	541
7/2/2016	Sat			53.2	46.8	6944	6116	13060	2887	1751	4638	667	333	4057	4365	8422	507	499
7/3/2016	Sun			52.0	48.0	6234	5752	11986	2600	1628	4228	575	341	3634	4124	7758	492	513
7/4/2016	Mon	*		49.8	50.2	6292	6354	12646	2999	1263	4262	644	270	3293	5091	8384	585	387
7/5/2016	Tue			51.0	49.0	6004	5773	11777	2124	2126	4250	406	359	3880	3647	7527	527	469
7/6/2016	Wed			50.9	49.1	5838	5630	11468	2106	2170	4276	418	297	3732	3460	7192	456	492
7/7/2016	Thu			51.6	48.4	6083	5715	11798	2303	2097	4400	512	310	3780	3618	7398	494	512
7/8/2016	Fri			51.8	48.2	6470	6015	12485	2374	2079	4453	522	289	4096	3936	8032	519	537
7/9/2016	Sat			52.7	47.3	7456	6704	14160	3153	2105	5258	649	425	4303	4599	8902	696	411
7/10/2016	Sun			49.6	50.4	6255	6360	12615	2498	1591	4089	596	354	3757	4769	8526	584	460
7/11/2016	Mon			50.9	49.1	5729	5526	11255	2142	2022	4164	431	293	3587	3504	7091	481	467
7/12/2016	Tue			50.9	49.1	6000	5796	11796	2254	2119	4373	466	318	3746	3677	7423	487	482
7/13/2016	Wed			51.2	48.8	5952	5666	11618	2327	2207	4534	444	328	3625	3459	7084	463	450
7/14/2016	Thu			50.6	49.4	5932	5798	11730	2328	2128	4456	450	304	3604	3670	7274	436	478
7/15/2016	Fri			52.0	48.0	6385	5893	12278	2384	2201	4585	479	287	4001	3692	7693	481	473
7/16/2016	Sat			50.8	49.2	7251	7010	14261	3042	2007	5049	731	495	4209	5003	9212	666	463
7/17/2016	Sun			50.7	49.3	6450	6273	12723	2782	1733	4515	624	423	3668	4540	8208	617	459
7/18/2016	Mon			50.7	49.3	5493	5338	10831	2137	2132	4269	458	334	3356	3206	6562	389	450
7/19/2016	Tue			51.3	48.7	5977	5665	11642	2310	2081	4391	451	327	3667	3584	7251	438	491
7/20/2016	Wed			51.2	48.8	5934	5651	11585	2286	2133	4419	479	277	3648	3518	7166	420	428
7/21/2016	Thu			51.6	48.4	6206	5828	12034	2389	2143	4532	487	355	3817	3685	7502	522	529
7/22/2016	Fri			51.3	48.7	6354	6043	12397	2284	2257	4541	489	386	4070	3786	7856	470	511
7/23/2016	Sat		3	52.0	48.0	5809	5365	11174	2472	1872	4344	485	393	3337	3493	6830	530	407
7/24/2016	Sun		3	49.9	50.1	3729	3750	7479	1268	1234	2502	284	310	2461	2516	4977	309	325
7/25/2016	Mon			51.1	48.9	5370	5143	10513	1856	1962	3818	395	271	3514	3181	6695	452	476
7/26/2016	Tue			51.0	49.0	5930	5688	11618	2257	2103	4360	474	308	3673	3585	7258	450	501
7/27/2016	Wed			50.8	49.2	5881	5700	11581	2207	2213	4420	411	354	3674	3487	7161	474	466
7/28/2016	Thu			51.2	48.8	6213	5917	12130	2330	2237	4567	454	322	3883	3680	7563	537	475
7/29/2016	Fri			51.3	48.7	6345	6016	12361	2320	2172	4492	502	301	4025	3844	7869	481	501
7/30/2016	Sat			51.2	48.8	6669	6349	13018	2726	1841	4567	645	343	3943	4508	8451	498	528
7/31/2016	Sun			50.6	49.4	5637	5514	11151	2414	1603	4017	526	396	3223	3911	7134	521	435

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

June, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
6/1/2016	Wed			50.8	49.2	5416	5239	10655	2002	2067	4069	428	275	3414	3172	6586	396	463
6/2/2016	Thu			50.8	49.2	5863	5684	11547	2305	2129	4434	476	293	3558	3555	7113	457	458
6/3/2016	Fri			51.2	48.8	6129	5836	11965	2309	2058	4367	492	320	3820	3778	7598	486	507
6/4/2016	Sat			51.6	48.4	6821	6409	13230	2990	1881	4871	630	384	3831	4528	8359	574	528
6/5/2016	Sun			51.0	49.0	5927	5696	11623	2311	1539	3850	544	385	3616	4157	7773	570	417
6/6/2016	Mon			51.4	48.6	5678	5373	11051	2197	2062	4259	485	290	3481	3311	6792	414	495
6/7/2016	Tue			50.7	49.3	5725	5557	11282	2198	2095	4293	417	313	3527	3462	6989	443	499
6/8/2016	Wed			50.8	49.2	5656	5478	11134	2192	2155	4347	441	302	3464	3323	6787	381	464
6/9/2016	Thu			51.2	48.8	6036	5757	11793	2464	2118	4582	435	283	3572	3639	7211	433	474
6/10/2016	Fri	*		51.9	48.1	6419	5957	12376	2503	1977	4480	532	338	3916	3980	7896	516	449
6/11/2016	Sat			52.3	47.7	6876	6281	13157	2823	1849	4672	564	367	4053	4432	8485	542	470
6/12/2016	Sun			51.0	49.0	5816	5586	11402	2326	1559	3885	545	325	3490	4027	7517	511	463
6/13/2016	Mon			50.9	49.1	5294	5101	10395	1943	2000	3943	407	283	3351	3101	6452	430	440
6/14/2016	Tue			51.3	48.7	5611	5330	10941	2170	1989	4159	451	265	3441	3341	6782	452	445
6/15/2016	Wed			50.2	49.8	5347	5308	10655	2036	2110	4146	377	304	3311	3198	6509	410	485
6/16/2016	Thu			51.5	48.5	5731	5400	11131	2239	2033	4272	428	284	3492	3367	6859	452	433
6/17/2016	Fri			51.2	48.8	6026	5733	11759	2274	2227	4501	471	314	3752	3506	7258	466	481
6/18/2016	Sat			52.5	47.5	6701	6056	12757	2717	1621	4338	619	308	3984	4435	8419	565	455
6/19/2016	Sun			50.4	49.6	5583	5489	11072	2474	1511	3985	540	315	3109	3978	7087	558	435
6/20/2016	Mon			51.1	48.9	5531	5296	10827	2083	2046	4129	422	310	3448	3250	6698	457	434
6/21/2016	Tue			50.8	49.2	5804	5613	11417	2235	2112	4347	457	288	3569	3501	7070	451	469
6/22/2016	Wed			51.1	48.9	5933	5688	11621	2228	2223	4451	396	329	3705	3465	7170	452	479
6/23/2016	Thu			51.2	48.8	6059	5776	11835	2377	2152	4529	442	313	3682	3624	7306	447	466
6/24/2016	Fri			52.2	47.8	6151	5642	11793	2257	2151	4408	449	342	3894	3491	7385	492	516
6/25/2016	Sat			52.7	47.3	7325	6577	13902	3020	1982	5002	587	447	4305	4595	8900	665	409
6/26/2016	Sun			51.9	48.1	6591	6107	12698	2858	1537	4395	647	363	3733	4570	8303	653	417
6/27/2016	Mon			51.6	48.4	5754	5399	11153	2193	2093	4286	508	307	3561	3306	6867	461	507
6/28/2016	Tue			51.5	48.5	5933	5588	11521	2302	1980	4282	466	320	3631	3608	7239	436	498
6/29/2016	Wed			50.8	49.2	5754	5564	11318	2203	2111	4314	448	282	3551	3453	7004	466	424
6/30/2016	Thu			50.8	49.2	5940	5756	11696	2224	2085	4309	462	323	3716	3671	7387	445	501

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

September, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
9/1/2016	Thu			50.0	50.0	5250	5243	10493	2020	2108	4128	252	407	3230	3135	6365	421	455
9/2/2016	Fri			51.2	48.8	5962	5688	11650	2146	2138	4284	394	320	3816	3550	7366	540	503
9/3/2016	Sat			51.9	48.1	5410	5018	10428	1952	1517	3469	412	318	3458	3501	6959	427	477
9/4/2016	Sun			51.1	48.9	5709	5462	11171	2328	1446	3774	493	300	3381	4016	7397	583	403
9/5/2016	Mon	*		49.5	50.5	6067	6188	12255	2704	1527	4231	692	334	3363	4661	8024	533	592
9/6/2016	Tue			50.2	49.8	5241	5208	10449	1918	2108	4026	337	302	3323	3100	6423	429	471
9/7/2016	Wed			50.4	49.6	5080	5007	10087	1803	2062	3865	264	324	3277	2945	6222	441	445
9/8/2016	Thu			50.1	49.9	5403	5387	10790	2159	2181	4340	280	442	3244	3206	6450	442	494
9/9/2016	Fri			50.3	49.7	5509	5435	10944	2006	2079	4085	317	353	3503	3356	6859	417	501
9/10/2016	Sat			51.1	48.9	5915	5655	11570	2470	1728	4198	513	358	3445	3927	7372	505	427
9/11/2016	Sun			49.8	50.2	5047	5096	10143	2077	1489	3566	466	279	2970	3607	6577	415	465
9/12/2016	Mon			50.4	49.6	4895	4814	9709	1830	2081	3911	336	299	3065	2733	5798	438	449
9/13/2016	Tue			50.9	49.1	5659	5459	11118	2229	2220	4449	397	319	3430	3239	6669	496	467
9/14/2016	Wed			51.4	48.6	5233	4954	10187	1944	2197	4141	264	415	3289	2757	6046	463	421
9/15/2016	Thu			51.0	49.0	5468	5253	10721	2080	2125	4205	248	408	3388	3128	6516	487	498
9/16/2016	Fri			51.2	48.8	5996	5719	11715	2214	2297	4511	291	471	3782	3422	7204	504	492
9/17/2016	Sat			52.3	47.7	6641	6051	12692	2806	1992	4798	611	405	3835	4059	7894	549	480
9/18/2016	Sun			50.7	49.3	6203	6036	12239	2822	1682	4504	626	358	3381	4354	7735	555	496
9/19/2016	Mon			50.3	49.7	5547	5491	11038	2236	2188	4424	426	283	3311	3303	6614	450	502
9/20/2016	Tue			50.2	49.8	5565	5514	11079	2207	2123	4330	359	359	3358	3391	6749	434	483
9/21/2016	Wed			50.4	49.6	5523	5436	10959	2196	2185	4381	329	386	3327	3251	6578	441	475
9/22/2016	Thu			50.2	49.8	5646	5605	11251	2307	2230	4537	346	402	3339	3375	6714	438	490
9/23/2016	Fri			51.0	49.0	6019	5772	11791	2320	2201	4521	330	392	3699	3571	7270	473	519
9/24/2016	Sat			51.6	48.4	6478	6066	12544	2611	1825	4436	518	337	3867	4241	8108	562	476
9/25/2016	Sun			50.2	49.8	5497	5447	10944	2307	1511	3818	509	339	3190	3936	7126	385	523
9/26/2016	Mon			49.0	51.0	4853	5042	9895	1963	2084	4047	370	289	2890	2958	5848	402	450
9/27/2016	Tue			50.2	49.8	5224	5176	10400	2030	2025	4055	402	261	3194	3151	6345	412	481
9/28/2016	Wed			50.4	49.6	5472	5377	10849	2123	2150	4273	363	311	3349	3227	6576	447	517
9/29/2016	Thu			50.6	49.4	5269	5145	10414	2057	2111	4168	296	405	3212	3034	6246	382	512
9/30/2016	Fri			50.6	49.4	5570	5434	11004	2104	2187	4291	263	456	3466	3247	6713	422	470

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

August, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
8/1/2016	Mon			49.6	50.4	5566	5657	11223	2061	2162	4223	461	272	3505	3495	7000	504	446
8/2/2016	Tue			50.6	49.4	5799	5669	11468	2108	2139	4247	409	289	3691	3530	7221	449	469
8/3/2016	Wed			50.6	49.4	5786	5654	11440	2105	2174	4279	400	298	3681	3480	7161	482	488
8/4/2016	Thu			51.0	49.0	6029	5788	11817	2297	2247	4544	482	313	3732	3541	7273	472	493
8/5/2016	Fri			51.7	48.3	6202	5802	12004	2283	2233	4516	463	329	3919	3569	7488	517	450
8/6/2016	Sat			51.1	48.9	6541	6247	12788	2664	1948	4612	550	429	3877	4299	8176	603	457
8/7/2016	Sun			49.3	50.7	4425	4551	8976	1395	1479	2874	300	335	3030	3072	6102	377	411
8/8/2016	Mon			50.3	49.7	5657	5583	11240	2057	2071	4128	441	261	3600	3512	7112	472	498
8/9/2016	Tue			50.4	49.6	5884	5780	11664	2327	2202	4529	487	299	3557	3578	7135	458	489
8/10/2016	Wed			51.0	49.0	6026	5781	11807	2362	2168	4530	451	275	3664	3613	7277	453	514
8/11/2016	Thu			51.3	48.7	6111	5791	11902	2347	2230	4577	495	326	3764	3561	7325	507	504
8/12/2016	Fri			51.7	48.3	6546	6123	12669	2394	2301	4695	485	302	4152	3822	7974	397	626
8/13/2016	Sat			50.5	49.5	6636	6515	13151	2729	1900	4629	573	377	3907	4615	8522	493	520
8/14/2016	Sun			50.7	49.3	6072	5900	11972	2696	1659	4355	666	386	3376	4241	7617	484	503
8/15/2016	Mon			50.0	50.0	5450	5445	10895	1992	2143	4135	444	261	3458	3302	6760	443	515
8/16/2016	Tue			50.6	49.4	5816	5688	11504	2263	2227	4490	454	284	3553	3461	7014	483	479
8/17/2016	Wed			50.6	49.4	5761	5630	11391	2195	2266	4461	431	307	3566	3364	6930	463	433
8/18/2016	Thu			50.9	49.1	6037	5835	11872	2420	2361	4781	287	496	3617	3474	7091	406	509
8/19/2016	Fri	*		52.0	48.0	6788	6275	13063	2575	2035	4610	561	360	4213	4240	8453	459	559
8/20/2016	Sat			50.2	49.8	6886	6827	13713	2919	1884	4803	616	395	3967	4943	8910	520	530
8/21/2016	Sun			50.2	49.8	5718	5665	11383	2421	1562	3983	602	347	3297	4103	7400	611	444
8/22/2016	Mon			49.5	50.5	4871	4968	9839	1848	2137	3985	366	292	3023	2831	5854	385	452
8/23/2016	Tue		3	50.2	49.8	3806	3781	7587	1753	1722	3475	250	363	2053	2059	4112	253	314
8/24/2016	Wed			50.6	49.4	5047	4934	9981	1747	1879	3626	381	256	3300	3055	6355	432	466
8/25/2016	Thu			50.7	49.3	5713	5566	11279	2221	2192	4413	429	316	3492	3374	6866	465	481
8/26/2016	Fri			51.3	48.7	6351	6025	12376	2405	2244	4649	272	488	3946	3781	7727	577	492
8/27/2016	Sat			50.7	49.3	6571	6380	12951	2653	1812	4465	559	389	3918	4568	8486	585	479
8/28/2016	Sun			49.9	50.1	5475	5491	10966	2255	1573	3828	543	408	3220	3918	7138	425	466
8/29/2016	Mon			50.2	49.8	5279	5247	10526	1987	2101	4088	387	258	3292	3146	6438	402	488
8/30/2016	Tue			50.4	49.6	5441	5360	10801	2181	2282	4463	444	315	3260	3078	6338	423	492
8/31/2016	Wed			50.6	49.4	5162	5039	10201	2007	2156	4163	244	424	3155	2883	6038	397	399

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

November, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
11/1/2016	Tue			51.0	49.0	5377	5161	10538	2025	2020	4045	347	318	3352	3141	6493	491	468
11/2/2016	Wed			51.5	48.5	5628	5305	10933	2241	2134	4375	438	290	3387	3171	6558	450	463
11/3/2016	Thu			50.9	49.1	5735	5530	11265	2340	2127	4467	439	309	3395	3403	6798	468	492
11/4/2016	Fri			51.4	48.6	5992	5665	11657	2314	2172	4486	327	405	3678	3493	7171	447	499
11/5/2016	Sat			51.2	48.8	6383	6077	12460	2494	1908	4402	531	388	3889	4169	8058	565	459
11/6/2016	Sun			50.0	50.0	5871	5871	11742	2602	1842	4444	461	395	3269	4029	7298	441	533
11/7/2016	Mon			51.5	48.5	5488	5171	10659	2113	2178	4291	413	347	3375	2993	6368	457	395
11/8/2016	Tue	*		51.4	48.6	5763	5458	11221	2343	2032	4375	494	351	3420	3426	6846	412	526
11/9/2016	Wed			50.5	49.5	5479	5369	10848	2040	2160	4200	384	282	3439	3209	6648	468	467
11/10/2016	Thu			52.1	47.9	6106	5623	11729	2461	2263	4724	342	498	3645	3360	7005	471	543
11/11/2016	Fri	*		52.4	47.6	6805	6178	12983	2675	1885	4560	590	376	4130	4293	8423	605	461
11/12/2016	Sat			50.9	49.1	6769	6524	13293	2898	1906	4804	572	382	3871	4618	8489	484	603
11/13/2016	Sun			50.1	49.9	5863	5833	11696	2560	1777	4337	518	389	3303	4056	7359	504	478
11/14/2016	Mon			50.9	49.1	5591	5383	10974	2080	2051	4131	394	304	3511	3332	6843	480	492
11/15/2016	Tue			50.7	49.3	5355	5200	10555	2025	2176	4201	393	278	3330	3024	6354	439	499
11/16/2016	Wed			49.9	50.1	5544	5558	11102	2085	2275	4360	284	411	3459	3283	6742	488	504
11/17/2016	Thu			51.4	48.6	5856	5534	11390	2452	2398	4850	348	483	3404	3136	6540	436	495
11/18/2016	Fri			52.0	48.0	6113	5653	11766	2310	2233	4543	448	309	3803	3420	7223	485	496
11/19/2016	Sat			54.1	45.9	6974	5910	12884	2300	1951	4251	459	378	4674	3959	8633	814	204
11/20/2016	Sun			51.4	48.6	5703	5400	11103	2471	1587	4058	479	342	3232	3813	7045	454	494
11/21/2016	Mon			50.8	49.2	5233	5063	10296	1922	2189	4111	368	335	3311	2874	6185	435	445
11/22/2016	Tue			50.3	49.7	5627	5557	11184	2110	2234	4344	429	314	3517	3323	6840	476	540
11/23/2016	Wed			51.1	48.9	5811	5553	11364	2153	2236	4389	398	318	3658	3317	6975	451	510
11/24/2016	Thu	*		50.2	49.8	4534	4489	9023	1895	1323	3218	400	315	2639	3166	5805	405	345
11/25/2016	Fri		3	51.4	48.6	5460	5161	10621	2240	1769	4009	500	365	3220	3392	6612	448	485
11/26/2016	Sat			51.6	48.4	6223	5840	12063	2472	1751	4223	556	392	3751	4089	7840	508	484
11/27/2016	Sun			49.3	50.7	4969	5102	10071	2081	1552	3633	407	337	2888	3550	6438	418	458
11/28/2016	Mon			50.3	49.7	5263	5200	10463	1919	2144	4063	339	319	3344	3056	6400	449	492
11/29/2016	Tue			50.2	49.8	5131	5090	10221	2036	2111	4147	369	291	3095	2979	6074	443	468
11/30/2016	Wed			48.9	51.1	5264	5508	10772	2077	2674	4751	314	547	3187	2834	6021	449	408

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

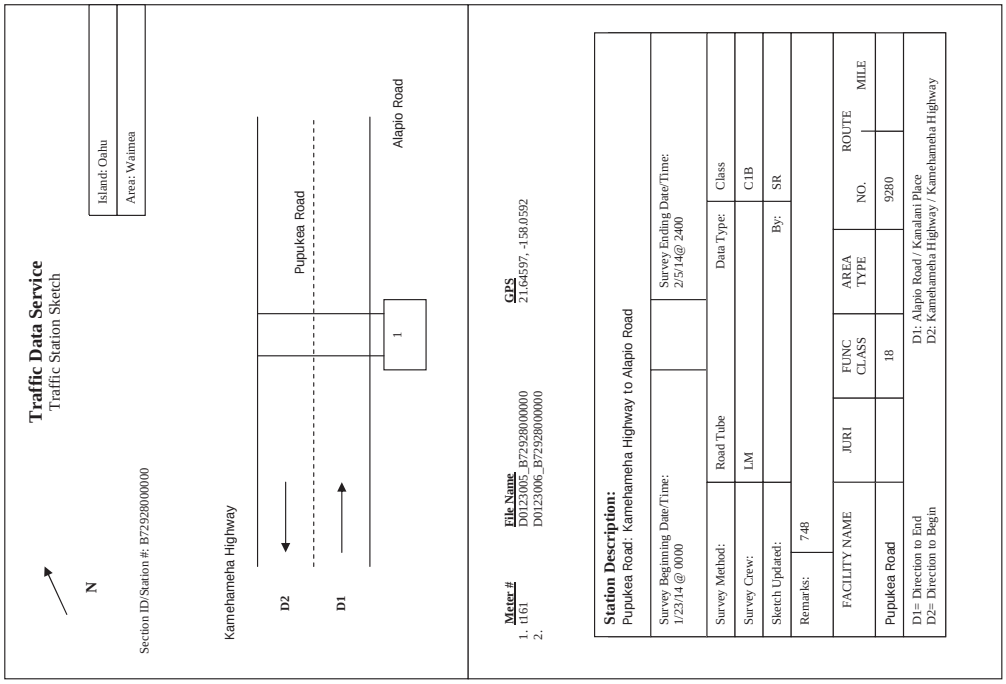
October, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
10/1/2016	Sat			51.0	49.0	5774	5550	11324	2069	1626	3695	502	280	3705	3924	7629	435	498
10/2/2016	Sun			50.3	49.7	4897	4838	9735	1993	1373	3366	432	282	2904	3465	6369	437	405
10/3/2016	Mon			49.5	50.5	4873	4966	9839	1789	2018	3807	279	337	3084	2948	6032	428	470
10/4/2016	Tue			50.4	49.6	5247	5172	10419	1921	2047	3968	260	374	3326	3125	6451	463	490
10/5/2016	Wed			50.8	49.2	5250	5079	10329	1935	2029	3964	346	254	3315	3050	6365	463	423
10/6/2016	Thu			50.9	49.1	5633	5423	11056	2169	2088	4257	391	288	3464	3335	6799	502	490
10/7/2016	Fri			51.2	48.8	5783	5512	11295	2090	2019	4109	413	299	3693	3493	7186	493	514
10/8/2016	Sat			52.4	47.6	7156	6502	13658	3166	2045	5211	674	417	3990	4457	8447	578	466
10/9/2016	Sun			50.5	49.5	6050	5919	11969	2600	1604	4204	550	364	3450	4315	7765	595	407
10/10/2016	Mon			50.7	49.3	6339	6161	12500	2810	2103	4913	592	405	3529	4058	7587	540	509
10/11/2016	Tue			51.5	48.5	6066	5719	11785	2486	2203	4689	512	358	3580	3516	7096	458	531
10/12/2016	Wed			50.9	49.1	5859	5649	11508	2338	2199	4537	426	307	3521	3450	6971	464	494
10/13/2016	Thu			50.8	49.2	6015	5831	11846	2456	2275	4731	453	341	3559	3556	7115	477	508
10/14/2016	Fri			51.4	48.6	6324	5991	12315	2480	2247	4727	477	369	3844	3744	7588	507	519
10/15/2016	Sat			52.4	47.6	7022	6390	13412	2861	2029	4890	526	418	4161	4361	8522	553	496
10/16/2016	Sun			49.8	50.2	5783	5837	11620	2569	1682	4251	497	354	3214	4155	7369	454	497
10/17/2016	Mon			50.0	50.0	5369	5369	10738	2167	2097	4264	394	301	3202	3272	6474	430	502
10/18/2016	Tue			50.3	49.7	5394	5330	10724	2144	2165	4309	382	294	3250	3165	6415	453	511
10/19/2016	Wed			50.6	49.4	5317	5185	10502	2152	2254	4406	274	448	3165	2931	6096	396	455
10/20/2016	Thu			50.9	49.1	5861	5655	11516	2344	2238	4582	422	314	3517	3417	6934	525	545
10/21/2016	Fri			52.0	48.0	6171	5707	11878	2492	2280	4772	385	388	3679	3427	7106	485	468
10/22/2016	Sat			51.6	48.4	6252	5857	12109	2599	1848	4447	510	335	3653	4009	7662	533	506
10/23/2016	Sun			50.1	49.9	5552	5525	11077	2523	1586	4109	491	351	3029	3939	6968	497	470
10/24/2016	Mon			50.0	50.0	5256	5255	10511	2045	2154	4199	329	347	3211	3101	6312	464	469
10/25/2016	Tue			50.7	49.3	5846	5689	11535	2418	2177	4595	448	305	3428	3512	6940	488	493
10/26/2016	Wed			51.4	48.6	5505	5202	10707	2221	2190	4411	382	308	3284	3012	6296	437	486
10/27/2016	Thu			51.2	48.8	5551	5293	10844	2334	2170	4504	409	321	3217	3123	6340	416	536
10/28/2016	Fri			51.0	49.0	5496	5277	10773	2027	2095	4122	396	283	3469	3182	6651	421	500
10/29/2016	Sat			51.7	48.3	5982	5591	11573	2276	1832	4108	503	332	3706	3759	7465	458	506
10/30/2016	Sun			50.8	49.2	5217	5045	10262	2232	1523	3755	470	304	2985	3522	6507	435	401
10/31/2016	Mon			49.9	50.1	5112	5123	10235	1972	2052	4024	269	363	3140	3071	6211	438	458

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR



December, 2016

STATION NO 083016 STATION DESCRIPTION 083016 Joseph P. Leong Highway, Route 83, MP 1.63 DIRECTION 01 Northbound, MOV 1
DIRECTION 02 Southbound, MOV 5

Oahu

Date	Day of Week	H / WD	Unsuccessful Polling	24-HOUR TOTAL					A.M. TOTAL					P.M. TOTAL				
				%		Volume			00:00 - 12:00			PEAK HOUR		12:00-24:00			PEAK HOUR	
				D-01	D-02	D-01	D-02	1+2	D-01	D-02	1+2	D-01	D-02	D-01	D-02	1+2	D-01	D-02
12/1/2016	Thu			50.7	49.3	5201	5049	10250	1884	2134	4018	239	386	3317	2915	6232	457	460
12/2/2016	Fri			52.1	47.9	6071	5585	11656	2242	2060	4302	406	316	3829	3525	7354	515	494
12/3/2016	Sat			52.0	48.0	6252	5773	12025	2645	1907	4552	560	391	3607	3866	7473	578	425
12/4/2016	Sun			51.5	48.5	4827	4541	9368	2256	1509	3765	420	332	2571	3032	5603	395	373
12/5/2016	Mon			50.9	49.1	5616	5410	11026	2143	2179	4322	390	304	3473	3231	6704	482	484
12/6/2016	Tue			50.9	49.1	5842	5635	11477	2211	2229	4440	388	317	3631	3406	7037	500	528
12/7/2016	Wed			50.9	49.1	5829	5632	11461	2271	2310	4581	418	338	3558	3322	6880	493	461
12/8/2016	Thu			50.9	49.1	5603	5401	11004	2315	2332	4647	377	358	3288	3069	6357	444	492
12/9/2016	Fri			51.1	48.9	6332	6055	12387	2151	2214	4365	414	303	4181	3841	8022	549	546
12/10/2016	Sat			51.3	48.7	6212	5895	12107	2486	1885	4371	505	368	3726	4010	7736	445	532
12/11/2016	Sun			51.6	48.4	5713	5368	11081	2433	1616	4049	498	337	3280	3752	7032	392	515
12/12/2016	Mon			51.6	48.4	5945	5572	11517	2414	2095	4509	424	276	3531	3477	7008	453	497
12/13/2016	Tue			50.8	49.2	6019	5820	11839	2331	2275	4606	443	304	3688	3545	7233	519	481
12/14/2016	Wed			51.2	48.8	5978	5709	11687	2345	2155	4500	426	309	3633	3554	7187	440	535
12/15/2016	Thu			50.2	49.8	5608	5572	11180	2080	2346	4426	314	414	3528	3226	6754	436	529
12/16/2016	Fri			50.9	49.1	5924	5717	11641	2242	2186	4428	429	321	3682	3531	7213	457	534
12/17/2016	Sat			51.5	48.5	5867	5515	11382	2203	1580	3783	442	298	3664	3935	7599	423	514
12/18/2016	Sun			51.5	48.5	5838	5505	11343	2748	1452	4200	553	325	3090	4053	7143	462	459
12/19/2016	Mon			51.3	48.7	6586	6259	12845	2800	2223	5023	506	349	3786	4036	7822	518	526
12/20/2016	Tue			50.7	49.3	6465	6299	12764	2573	2347	4920	523	413	3892	3952	7844	511	526
12/21/2016	Wed			50.1	49.9	6258	6229	12487	2273	2204	4477	447	358	3985	4025	8010	431	753
12/22/2016	Thu			50.7	49.3	6349	6173	12522	2354	2175	4529	476	376	3995	3998	7993	548	473
12/23/2016	Fri			51.8	48.2	6739	6267	13006	2677	2119	4796	594	447	4062	4148	8210	529	539
12/24/2016	Sat			51.1	48.9	5296	5064	10360	2114	1673	3787	437	352	3182	3391	6573	453	381
12/25/2016	Sun			51.0	49.0	4758	4563	9321	1702	989	2691	473	261	3056	3574	6630	467	404
12/26/2016	Mon	*		51.0	49.0	6027	5800	11827	2194	1516	3710	586	356	3833	4284	8117	534	537
12/27/2016	Tue			51.4	48.6	6311	5970	12281	2579	1999	4578	636	339	3732	3971	7703	503	502
12/28/2016	Wed			51.5	48.5	6380	6001	12381	2506	2056	4562	553	364	3874	3945	7819	518	501
12/29/2016	Thu			51.7	48.3	6411	5986	12397	2498	2038	4536	615	374	3913	3948	7861	498	543
12/30/2016	Fri			52.2	47.8	6125	5606	11731	2194	2002	4196	510	391	3931	3604	7535	565	410
12/31/2016	Sat			51.4	48.6	5582	5287	10869	2427	1655	4082	576	383	3155	3632	6787	390	537

1 - INCOMPLETE FILE
2 - DIRECTIONAL SPLIT
3 - USER DEFINED ERROR

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/24/2014															
12:00-12:15	1	3	4	06:00-06:15	3	18	21	12:00-12:15	30	23	53	06:00-06:15	25	25	50
12:15-12:30	4	1	5	06:15-06:30	7	18	25	12:15-12:30	17	25	42	06:15-06:30	31	30	61
12:30-12:45	1	0	1	06:30-06:45	15	16	31	12:30-12:45	19	31	50	06:30-06:45	25	33	58
12:45-01:00	1	1	2	06:45-07:00	11	32	43	12:45-01:00	28	21	49	06:45-07:00	32	20	52
01:00-01:15	2	0	2	07:00-07:15	22	34	56	01:00-01:15	20	17	37	07:00-07:15	21	19	40
01:15-01:30	3	1	4	07:15-07:30	5	49	54	01:15-01:30	33	24	57	07:15-07:30	37	14	51
01:30-01:45	1	1	2	07:30-07:45	13	58	71	01:30-01:45	22	25	47	07:30-07:45	14	11	25
01:45-02:00	3	1	4	07:45-08:00	15	51	66	01:45-02:00	29	44	73	07:45-08:00	21	13	34
02:00-02:15	3	1	4	08:00-08:15	19	27	46	02:00-02:15	26	21	47	08:00-08:15	28	12	40
02:15-02:30	4	2	6	08:15-08:30	15	32	47	02:15-02:30	38	17	55	08:15-08:30	38	4	42
02:30-02:45	0	0	0	08:30-08:45	27	34	61	02:30-02:45	34	23	57	08:30-08:45	34	7	41
02:45-03:00	0	0	0	08:45-09:00	33	27	60	02:45-03:00	34	19	53	08:45-09:00	22	9	31
03:00-03:15	0	1	1	09:00-09:15	24	46	70	03:00-03:15	34	17	51	09:00-09:15	23	6	29
03:15-03:30	0	0	0	09:15-09:30	17	32	49	03:15-03:30	25	28	53	09:15-09:30	25	11	36
03:30-03:45	1	1	2	09:30-09:45	20	23	43	03:30-03:45	30	43	73	09:30-09:45	19	12	31
03:45-04:00	1	0	1	09:45-10:00	15	23	38	03:45-04:00	46	28	74	09:45-10:00	14	6	20
04:00-04:15	0	2	2	10:00-10:15	26	29	55	04:00-04:15	37	26	63	10:00-10:15	16	2	18
04:15-04:30	0	2	2	10:15-10:30	22	32	54	04:15-04:30	28	27	55	10:15-10:30	14	5	19
04:30-04:45	0	10	10	10:30-10:45	15	22	37	04:30-04:45	39	31	70	10:30-10:45	16	3	19
04:45-05:00	0	9	9	10:45-11:00	19	20	39	04:45-05:00	32	39	71	10:45-11:00	9	2	11
05:00-05:15	0	8	8	11:00-11:15	15	17	32	05:00-05:15	28	23	51	11:00-11:15	6	1	7
05:15-05:30	0	10	10	11:15-11:30	26	26	52	05:15-05:30	30	24	54	11:15-11:30	6	4	10
05:30-05:45	2	12	14	11:30-11:45	19	31	50	05:30-05:45	36	31	67	11:30-11:45	9	3	12
05:45-06:00	3	24	27	11:45-12:00	25	29	54	05:45-06:00	38	27	65	11:45-12:00	11	3	14

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM		
AM - PEAK HR VOLUME	55	192	247
AM - K FACTOR (%)			7.28
AM - D (%)	22.27	77.73	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	94	192	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	141	124	265
PM - K FACTOR (%)			7.81
PM - D (%)	53.21	46.79	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM	03:15 PM to 04:15 PM	
PM - PEAK HR VOLUME	150	125	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM		
AM - PEAK HR VOLUME	55	192	247
AM - K FACTOR (%)			7.28
AM - D (%)	22.27	77.73	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	141	124	265
PM - K FACTOR (%)			7.81
PM - D (%)	53.21	46.79	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	127	105	232
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	132	124	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	428	726	1,154
AM 12-HR PERIOD (00:00-12:00)	458	816	1,274
PM 6-HR PERIOD (12:00-18:00)	733	634	1,367
PM 12-HR PERIOD (12:00-24:00)	1,229	889	2,118
24 HOUR PERIOD	1,687	1,705	3,392
D (%)	49.73	50.27	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/23/2014															
12:00-12:15	5	0	5	06:00-06:15	1	19	20	12:00-12:15	18	28	46	06:00-06:15	36	23	59
12:15-12:30	3	2	5	06:15-06:30	4	27	31	12:15-12:30	31	28	59	06:15-06:30	38	18	56
12:30-12:45	2	2	4	06:30-06:45	18	25	43	12:30-12:45	18	19	37	06:30-06:45	36	18	54
12:45-01:00	0	0	0	06:45-07:00	12	37	49	12:45-01:00	18	15	33	06:45-07:00	28	17	45
01:00-01:15	2	1	3	07:00-07:15	10	32	42	01:00-01:15	32	18	50	07:00-07:15	35	7	42
01:15-01:30	1	0	1	07:15-07:30	6	49	55	01:15-01:30	22	21	43	07:15-07:30	19	13	32
01:30-01:45	0	0	0	07:30-07:45	20	69	89	01:30-01:45	22	22	44	07:30-07:45	32	12	44
01:45-02:00	0	0	0	07:45-08:00	31	52	83	01:45-02:00	25	25	50	07:45-08:00	27	11	38
02:00-02:15	0	0	0	08:00-08:15	28	37	65	02:00-02:15	17	30	47	08:00-08:15	22	8	30
02:15-02:30	1	0	1	08:15-08:30	24	23	47	02:15-02:30	35	32	67	08:15-08:30	8	3	11
02:30-02:45	0	0	0	08:30-08:45	20	40	60	02:30-02:45	33	23	56	08:30-08:45	23	4	27
02:45-03:00	0	0	0	08:45-09:00	20	31	51	02:45-03:00	36	20	56	08:45-09:00	22	6	28
03:00-03:15	0	0	0	09:00-09:15	21	32	53	03:00-03:15	24	23	47	09:00-09:15	19	5	24
03:15-03:30	0	0	0	09:15-09:30	17	35	52	03:15-03:30	21	25	46	09:15-09:30	17	4	21
03:30-03:45	1	1	2	09:30-09:45	13	38	51	03:30-03:45	34	31	65	09:30-09:45	20	2	22
03:45-04:00	0	1	1	09:45-10:00	10	33	43	03:45-04:00	37	23	60	09:45-10:00	23	2	25
04:00-04:15	1	3	4	10:00-10:15	22	22	44	04:00-04:15	36	30	66	10:00-10:15	11	6	17
04:15-04:30	0	4	4	10:15-10:30	11	21	32	04:15-04:30	40	29	69	10:15-10:30	18	3	21
04:30-04:45	0	7	7	10:30-10:45	19	24	43	04:30-04:45	30	37	67	10:30-10:45	8	3	11
04:45-05:00	2	5	7	10:45-11:00	15	12	27	04:45-05:00	12	32	44	10:45-11:00	8	3	11
05:00-05:15	0	5	5	11:00-11:15	18	29	47	05:00-05:15	71	13	84	11:00-11:15	4	1	5
05:15-05:30	1	15	16	11:15-11:30	29	20	49	05:15-05:30	28	22	50	11:15-11:30	9	0	9
05:30-05:45	0	18	18	11:30-11:45	15	18	33	05:30-05:45	35	26	61	11:30-11:45	2	0	2
05:45-06:00	2	11	13	11:45-12:00	28	21	49	05:45-06:00	29	16	45	11:45-12:00	5	0	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	85	207	292
AM - K FACTOR (%)			9.17
AM - D (%)	29.11	70.89	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	103	207	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	153	111	264
PM - K FACTOR (%)			8.29
PM - D (%)	57.95	42.05	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	163	128	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	85	207	292
AM - K FACTOR (%)			9.17
AM - D (%)	29.11	70.89	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	153	111	264
PM - K FACTOR (%)			8.29
PM - D (%)	57.95	42.05	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	121	105	226
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	121	138	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	412	746	1,158
AM 12-HR PERIOD (00:00-12:00)	433	821	1,254
PM 6-HR PERIOD (12:00-18:00)	704	588	1,292
PM 12-HR PERIOD (12:00-24:00)	1,174	757	1,931
24 HOUR PERIOD	1,607	1,578	3,185
D (%)	50.46	49.54	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/26/2014															
12:00-12:15	3	1	4	06:00-06:15	1	12	13	12:00-12:15	29	16	45	06:00-06:15	37	17	54
12:15-12:30	1	1	2	06:15-06:30	1	6	7	12:15-12:30	29	32	61	06:15-06:30	44	15	59
12:30-12:45	4	0	4	06:30-06:45	5	15	20	12:30-12:45	39	32	71	06:30-06:45	32	17	49
12:45-01:00	3	0	3	06:45-07:00	1	13	14	12:45-01:00	15	27	42	06:45-07:00	41	20	61
01:00-01:15	1	0	1	07:00-07:15	3	9	12	01:00-01:15	24	20	44	07:00-07:15	27	25	52
01:15-01:30	2	0	2	07:15-07:30	8	21	29	01:15-01:30	15	18	33	07:15-07:30	24	9	33
01:30-01:45	2	3	5	07:30-07:45	4	17	21	01:30-01:45	19	16	35	07:30-07:45	17	7	24
01:45-02:00	2	0	2	07:45-08:00	4	26	30	01:45-02:00	25	24	49	07:45-08:00	10	8	18
02:00-02:15	1	1	2	08:00-08:15	6	27	33	02:00-02:15	20	22	42	08:00-08:15	19	6	25
02:15-02:30	2	0	2	08:15-08:30	15	18	33	02:15-02:30	16	17	33	08:15-08:30	20	2	22
02:30-02:45	1	0	1	08:30-08:45	13	23	36	02:30-02:45	24	33	57	08:30-08:45	14	9	23
02:45-03:00	0	0	0	08:45-09:00	17	36	53	02:45-03:00	19	30	49	08:45-09:00	14	9	23
03:00-03:15	1	1	2	09:00-09:15	12	19	31	03:00-03:15	22	18	40	09:00-09:15	10	3	13
03:15-03:30	0	0	0	09:15-09:30	11	33	44	03:15-03:30	25	18	43	09:15-09:30	14	4	18
03:30-03:45	0	1	1	09:30-09:45	17	24	41	03:30-03:45	25	27	52	09:30-09:45	5	2	7
03:45-04:00	2	2	4	09:45-10:00	27	35	62	03:45-04:00	29	15	44	09:45-10:00	11	2	13
04:00-04:15	1	0	1	10:00-10:15	19	28	47	04:00-04:15	22	21	43	10:00-10:15	8	4	12
04:15-04:30	0	1	1	10:15-10:30	16	14	30	04:15-04:30	21	22	43	10:15-10:30	10	8	18
04:30-04:45	2	1	3	10:30-10:45	20	16	36	04:30-04:45	29	26	55	10:30-10:45	4	4	8
04:45-05:00	1	3	4	10:45-11:00	19	18	37	04:45-05:00	21	22	43	10:45-11:00	8	1	9
05:00-05:15	2	5	7	11:00-11:15	30	28	58	05:00-05:15	21	25	46	11:00-11:15	6	4	10
05:15-05:30	1	3	4	11:15-11:30	22	20	42	05:15-05:30	26	31	57	11:15-11:30	5	1	6
05:30-05:45	2	7	9	11:30-11:45	22	22	44	05:30-05:45	36	21	57	11:30-11:45	6	2	8
05:45-06:00	1	2	3	11:45-12:00	23	29	52	05:45-06:00	24	19	43	11:45-12:00	2	2	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	51	104	155
AM - K FACTOR (%)			5.99
AM - D (%)	32.90	67.10	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	51	104	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM		
PM - PEAK HR VOLUME	154	69	223
PM - K FACTOR (%)			8.62
PM - D (%)	69.06	30.94	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:30 PM to 05:30 PM	
PM - PEAK HR VOLUME	154	104	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM		
AM - PEAK HR VOLUME	97	99	196
AM - K FACTOR (%)			7.57
AM - D (%)	49.49	50.51	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM		
PM - PEAK HR VOLUME	154	69	223
PM - K FACTOR (%)			8.62
PM - D (%)	69.06	30.94	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:45 AM to 12:45 PM		
PEAK HR VOLUME	120	109	229
DIRECTIONAL PEAK			
PEAK HR TIME	11:45 AM to 12:45 PM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	120	120	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	316	509	825
AM 12-HR PERIOD (00:00-12:00)	351	541	892
PM 6-HR PERIOD (12:00-18:00)	575	552	1,127
PM 12-HR PERIOD (12:00-24:00)	963	733	1,696
24 HOUR PERIOD	1,314	1,274	2,588
D (%)	50.77	49.23	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/25/2014															
12:00-12:15	4	1	5	06:00-06:15	3	9	12	12:00-12:15	30	34	64	06:00-06:15	26	20	46
12:15-12:30	8	4	12	06:15-06:30	7	6	13	12:15-12:30	25	26	51	06:15-06:30	55	15	70
12:30-12:45	3	7	10	06:30-06:45	16	10	26	12:30-12:45	27	24	51	06:30-06:45	42	15	57
12:45-01:00	7	4	11	06:45-07:00	10	16	26	12:45-01:00	33	36	69	06:45-07:00	25	20	45
01:00-01:15	5	3	8	07:00-07:15	18	21	39	01:00-01:15	19	29	48	07:00-07:15	38	15	53
01:15-01:30	6	0	6	07:15-07:30	20	25	45	01:15-01:30	27	24	51	07:15-07:30	27	16	43
01:30-01:45	7	1	8	07:30-07:45	8	23	31	01:30-01:45	26	21	47	07:30-07:45	13	12	25
01:45-02:00	6	1	7	07:45-08:00	8	22	30	01:45-02:00	29	23	52	07:45-08:00	22	16	38
02:00-02:15	1	0	1	08:00-08:15	14	23	37	02:00-02:15	23	29	52	08:00-08:15	18	8	26
02:15-02:30	2	1	3	08:15-08:30	17	27	44	02:15-02:30	20	22	42	08:15-08:30	24	3	27
02:30-02:45	8	0	8	08:30-08:45	11	30	41	02:30-02:45	31	17	48	08:30-08:45	23	10	33
02:45-03:00	2	1	3	08:45-09:00	12	39	51	02:45-03:00	26	19	45	08:45-09:00	19	12	31
03:00-03:15	0	0	0	09:00-09:15	15	29	44	03:00-03:15	22	27	49	09:00-09:15	14	10	24
03:15-03:30	2	1	3	09:15-09:30	12	34	46	03:15-03:30	28	19	47	09:15-09:30	17	14	31
03:30-03:45	2	0	2	09:30-09:45	18	25	43	03:30-03:45	27	21	48	09:30-09:45	17	14	31
03:45-04:00	1	2	3	09:45-10:00	28	30	58	03:45-04:00	36	25	61	09:45-10:00	13	17	30
04:00-04:15	2	0	2	10:00-10:15	26	29	55	04:00-04:15	37	22	59	10:00-10:15	15	17	32
04:15-04:30	1	4	5	10:15-10:30	27	32	59	04:15-04:30	38	25	63	10:15-10:30	14	10	24
04:30-04:45	3	5	8	10:30-10:45	27	25	52	04:30-04:45	36	21	57	10:30-10:45	9	11	20
04:45-05:00	1	2	3	10:45-11:00	15	26	41	04:45-05:00	33	31	64	10:45-11:00	7	8	15
05:00-05:15	5	4	9	11:00-11:15	20	23	43	05:00-05:15	36	30	66	11:00-11:15	10	7	17
05:15-05:30	3	1	4	11:15-11:30	27	34	61	05:15-05:30	25	29	54	11:15-11:30	8	10	18
05:30-05:45	2	4	6	11:30-11:45	30	26	56	05:30-05:45	29	25	54	11:30-11:45	3	7	10
05:45-06:00	1	2	3	11:45-12:00	29	27	56	05:45-06:00	39	30	69	11:45-12:00	4	3	7

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	54	119	173
AM - K FACTOR (%)			5.40
AM - D (%)	31.21	68.79	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:30 AM to 07:30 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	64	119	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	143	107	250
PM - K FACTOR (%)			7.81
PM - D (%)	57.20	42.80	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	162	115	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:45 AM to 10:45 AM		
AM - PEAK HR VOLUME	108	116	224
AM - K FACTOR (%)			6.99
AM - D (%)	48.21	51.79	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	143	107	250
PM - K FACTOR (%)			7.81
PM - D (%)	57.20	42.80	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:15 AM to 12:15 PM		
PEAK HR VOLUME	116	121	237
DIRECTIONAL PEAK			
PEAK HR TIME	11:15 AM to 12:15 PM	11:15 AM to 12:15 PM	
PEAK HR VOLUME	116	121	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	418	591	1,009
AM 12-HR PERIOD (00:00-12:00)	500	639	1,139
PM 6-HR PERIOD (12:00-18:00)	702	609	1,311
PM 12-HR PERIOD (12:00-24:00)	1,165	899	2,064
24 HOUR PERIOD	1,665	1,538	3,203
D (%)	51.98	48.02	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/28/2014															
12:00-12:15	6	0	6	06:00-06:15	0	14	14	12:00-12:15	27	30	57	06:00-06:15	50	15	65
12:15-12:30	5	0	5	06:15-06:30	5	19	24	12:15-12:30	30	34	64	06:15-06:30	55	12	67
12:30-12:45	0	1	1	06:30-06:45	8	23	31	12:30-12:45	16	24	40	06:30-06:45	50	22	72
12:45-01:00	1	0	1	06:45-07:00	7	23	30	12:45-01:00	25	27	52	06:45-07:00	33	18	51
01:00-01:15	2	0	2	07:00-07:15	11	20	31	01:00-01:15	32	20	52	07:00-07:15	36	21	57
01:15-01:30	2	1	3	07:15-07:30	10	24	34	01:15-01:30	31	23	54	07:15-07:30	27	11	38
01:30-01:45	2	3	5	07:30-07:45	14	32	46	01:30-01:45	30	22	52	07:30-07:45	25	12	37
01:45-02:00	1	1	2	07:45-08:00	25	40	65	01:45-02:00	24	35	59	07:45-08:00	26	12	38
02:00-02:15	0	0	0	08:00-08:15	19	27	46	02:00-02:15	31	19	50	08:00-08:15	16	10	26
02:15-02:30	1	0	1	08:15-08:30	18	32	50	02:15-02:30	28	20	48	08:15-08:30	16	9	25
02:30-02:45	0	0	0	08:30-08:45	23	48	71	02:30-02:45	24	29	53	08:30-08:45	11	8	19
02:45-03:00	1	0	1	08:45-09:00	12	39	51	02:45-03:00	30	34	64	08:45-09:00	12	5	17
03:00-03:15	0	0	0	09:00-09:15	24	42	66	03:00-03:15	26	30	56	09:00-09:15	17	7	24
03:15-03:30	0	0	0	09:15-09:30	22	31	53	03:15-03:30	29	31	60	09:15-09:30	15	4	19
03:30-03:45	1	1	2	09:30-09:45	20	43	63	03:30-03:45	40	31	71	09:30-09:45	19	3	22
03:45-04:00	1	0	1	09:45-10:00	19	33	52	03:45-04:00	34	16	50	09:45-10:00	15	11	26
04:00-04:15	0	1	1	10:00-10:15	25	31	56	04:00-04:15	32	29	61	10:00-10:15	13	5	18
04:15-04:30	0	3	3	10:15-10:30	19	29	48	04:15-04:30	41	26	67	10:15-10:30	11	2	13
04:30-04:45	1	5	6	10:30-10:45	23	26	49	04:30-04:45	40	46	86	10:30-10:45	8	2	10
04:45-05:00	0	12	12	10:45-11:00	27	24	51	04:45-05:00	46	33	79	10:45-11:00	8	7	15
05:00-05:15	1	8	9	11:00-11:15	27	24	51	05:00-05:15	37	35	72	11:00-11:15	6	2	8
05:15-05:30	2	17	19	11:15-11:30	25	31	56	05:15-05:30	30	23	53	11:15-11:30	4	1	5
05:30-05:45	1	12	13	11:30-11:45	34	40	74	05:30-05:45	36	26	62	11:30-11:45	6	1	7
05:45-06:00	2	17	19	11:45-12:00	30	30	60	05:45-06:00	36	28	64	11:45-12:00	7	1	8

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM		
AM - PEAK HR VOLUME	85	147	232
AM - K FACTOR (%)			6.83
AM - D (%)	36.64	63.36	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:45 AM to 08:45 AM	
AM - PEAK HR VOLUME	85	147	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	164	140	304
PM - K FACTOR (%)			8.95
PM - D (%)	53.95	46.05	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	191	140	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:30 AM to 09:30 AM		
AM - PEAK HR VOLUME	81	160	241
AM - K FACTOR (%)			7.09
AM - D (%)	33.61	66.39	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	164	140	304
PM - K FACTOR (%)			8.95
PM - D (%)	53.95	46.05	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:30 AM to 12:30 PM		
PEAK HR VOLUME	121	134	255
DIRECTIONAL PEAK			
PEAK HR TIME	11:30 AM to 12:30 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	121	149	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	447	725	1,172
AM 12-HR PERIOD (00:00-12:00)	477	807	1,284
PM 6-HR PERIOD (12:00-18:00)	755	671	1,426
PM 12-HR PERIOD (12:00-24:00)	1,241	872	2,113
24 HOUR PERIOD	1,718	1,679	3,397
D (%)	50.57	49.43	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/27/2014															
12:00-12:15	1	3	4	06:00-06:15	2	24	26	12:00-12:15	36	18	54	06:00-06:15	46	12	58
12:15-12:30	5	1	6	06:15-06:30	8	14	22	12:15-12:30	19	27	46	06:15-06:30	47	28	75
12:30-12:45	6	0	6	06:30-06:45	6	19	25	12:30-12:45	25	21	46	06:30-06:45	47	21	68
12:45-01:00	2	1	3	06:45-07:00	13	28	41	12:45-01:00	20	24	44	06:45-07:00	49	13	62
01:00-01:15	5	0	5	07:00-07:15	10	30	40	01:00-01:15	23	15	38	07:00-07:15	39	14	53
01:15-01:30	1	0	1	07:15-07:30	10	45	55	01:15-01:30	20	21	41	07:15-07:30	32	14	46
01:30-01:45	0	1	1	07:30-07:45	14	69	83	01:30-01:45	20	27	47	07:30-07:45	22	12	34
01:45-02:00	1	0	1	07:45-08:00	22	57	79	01:45-02:00	24	26	50	07:45-08:00	22	13	35
02:00-02:15	1	0	1	08:00-08:15	34	18	52	02:00-02:15	17	27	44	08:00-08:15	15	11	26
02:15-02:30	1	0	1	08:15-08:30	19	41	60	02:15-02:30	39	25	64	08:15-08:30	17	4	21
02:30-02:45	0	0	0	08:30-08:45	22	24	46	02:30-02:45	38	20	58	08:30-08:45	25	4	29
02:45-03:00	1	0	1	08:45-09:00	20	44	64	02:45-03:00	29	18	47	08:45-09:00	19	8	27
03:00-03:15	0	1	1	09:00-09:15	14	33	47	03:00-03:15	21	23	44	09:00-09:15	16	3	19
03:15-03:30	0	0	0	09:15-09:30	21	27	48	03:15-03:30	26	21	47	09:15-09:30	14	3	17
03:30-03:45	0	1	1	09:30-09:45	21	25	46	03:30-03:45	34	31	65	09:30-09:45	3	5	8
03:45-04:00	2	0	2	09:45-10:00	22	33	55	03:45-04:00	28	35	63	09:45-10:00	15	3	18
04:00-04:15	0	4	4	10:00-10:15	20	27	47	04:00-04:15	32	28	60	10:00-10:15	15	4	19
04:15-04:30	0	4	4	10:15-10:30	17	19	36	04:15-04:30	35	28	63	10:15-10:30	13	1	14
04:30-04:45	0	7	7	10:30-10:45	8	25	33	04:30-04:45	47	36	83	10:30-10:45	8	2	10
04:45-05:00	2	8	10	10:45-11:00	21	17	38	04:45-05:00	41	26	67	10:45-11:00	9	3	12
05:00-05:15	1	12	13	11:00-11:15	18	27	45	05:00-05:15	33	28	61	11:00-11:15	5	1	6
05:15-05:30	1	12	13	11:15-11:30	23	24	47	05:15-05:30	30	17	47	11:15-11:30	9	1	10
05:30-05:45	2	19	21	11:30-11:45	22	21	43	05:30-05:45	29	31	60	11:30-11:45	3	0	3
05:45-06:00	2	16	18	11:45-12:00	18	23	41	05:45-06:00	44	27	71	11:45-12:00	2	1	3

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	89	185	274
AM - K FACTOR (%)			8.49
AM - D (%)	32.48	67.52	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	97	201	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	156	118	274
PM - K FACTOR (%)			8.49
PM - D (%)	56.93	43.07	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	189	127	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	89	185	274
AM - K FACTOR (%)			8.49
AM - D (%)	32.48	67.52	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	156	118	274
PM - K FACTOR (%)			8.49
PM - D (%)	56.93	43.07	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	118	98	216
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	123	118	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	405	714	1,119
AM 12-HR PERIOD (00:00-12:00)	439	804	1,243
PM 6-HR PERIOD (12:00-18:00)	710	600	1,310
PM 12-HR PERIOD (12:00-24:00)	1,202	781	1,983
24 HOUR PERIOD	1,641	1,585	3,226
D (%)	50.87	49.13	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/30/2014															
12:00-12:15	4	0	4	06:00-06:15	1	13	14	12:00-12:15	30	25	55	06:00-06:15	46	17	63
12:15-12:30	6	1	7	06:15-06:30	2	23	25	12:15-12:30	20	25	45	06:15-06:30	51	21	72
12:30-12:45	4	2	6	06:30-06:45	10	21	31	12:30-12:45	15	16	31	06:30-06:45	35	12	47
12:45-01:00	4	1	5	06:45-07:00	10	27	37	12:45-01:00	16	19	35	06:45-07:00	32	14	46
01:00-01:15	1	0	1	07:00-07:15	14	40	54	01:00-01:15	24	17	41	07:00-07:15	30	15	45
01:15-01:30	0	0	0	07:15-07:30	13	41	54	01:15-01:30	35	26	61	07:15-07:30	24	13	37
01:30-01:45	1	2	3	07:30-07:45	18	69	87	01:30-01:45	26	25	51	07:30-07:45	24	13	37
01:45-02:00	0	0	0	07:45-08:00	24	53	77	01:45-02:00	29	41	70	07:45-08:00	18	8	26
02:00-02:15	1	0	1	08:00-08:15	25	32	57	02:00-02:15	25	22	47	08:00-08:15	22	4	26
02:15-02:30	1	0	1	08:15-08:30	20	41	61	02:15-02:30	29	28	57	08:15-08:30	15	5	20
02:30-02:45	0	0	0	08:30-08:45	27	25	52	02:30-02:45	40	18	58	08:30-08:45	18	4	22
02:45-03:00	0	0	0	08:45-09:00	18	46	64	02:45-03:00	24	25	49	08:45-09:00	20	5	25
03:00-03:15	2	0	2	09:00-09:15	24	38	62	03:00-03:15	34	23	57	09:00-09:15	19	4	23
03:15-03:30	0	0	0	09:15-09:30	22	36	58	03:15-03:30	33	31	64	09:15-09:30	12	0	12
03:30-03:45	1	1	2	09:30-09:45	25	39	64	03:30-03:45	31	34	65	09:30-09:45	19	2	21
03:45-04:00	0	1	1	09:45-10:00	13	34	47	03:45-04:00	35	20	55	09:45-10:00	17	4	21
04:00-04:15	1	4	5	10:00-10:15	17	25	42	04:00-04:15	34	24	58	10:00-10:15	5	7	12
04:15-04:30	0	5	5	10:15-10:30	18	20	38	04:15-04:30	37	29	66	10:15-10:30	12	4	16
04:30-04:45	1	9	10	10:30-10:45	15	26	41	04:30-04:45	40	29	69	10:30-10:45	13	0	13
04:45-05:00	4	6	10	10:45-11:00	15	28	43	04:45-05:00	42	27	69	10:45-11:00	5	2	7
05:00-05:15	1	12	13	11:00-11:15	23	29	52	05:00-05:15	41	28	69	11:00-11:15	3	1	4
05:15-05:30	1	11	12	11:15-11:30	21	30	51	05:15-05:30	36	28	64	11:15-11:30	4	0	4
05:30-05:45	2	20	22	11:30-11:45	24	11	35	05:30-05:45	36	18	54	11:30-11:45	7	2	9
05:45-06:00	2	11	13	11:45-12:00	25	20	45	05:45-06:00	40	17	57	11:45-12:00	4	1	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	87	195	282
AM - K FACTOR (%)			8.61
AM - D (%)	30.85	69.15	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	96	203	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	160	113	273
PM - K FACTOR (%)			8.34
PM - D (%)	58.61	41.39	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	173	113	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	87	195	282
AM - K FACTOR (%)			8.61
AM - D (%)	30.85	69.15	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	160	113	273
PM - K FACTOR (%)			8.34
PM - D (%)	58.61	41.39	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	123	109	232
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	123	147	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	424	767	1,191
AM 12-HR PERIOD (00:00-12:00)	461	853	1,314
PM 6-HR PERIOD (12:00-18:00)	752	595	1,347
PM 12-HR PERIOD (12:00-24:00)	1,207	753	1,960
24 HOUR PERIOD	1,668	1,606	3,274
D (%)	50.95	49.05	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/29/2014															
12:00-12:15	2	0	2	06:00-06:15	4	16	20	12:00-12:15	23	17	40	06:00-06:15	30	23	53
12:15-12:30	6	0	6	06:15-06:30	6	20	26	12:15-12:30	21	29	50	06:15-06:30	45	18	63
12:30-12:45	2	0	2	06:30-06:45	8	30	38	12:30-12:45	28	40	68	06:30-06:45	35	14	49
12:45-01:00	2	0	2	06:45-07:00	12	32	44	12:45-01:00	23	25	48	06:45-07:00	35	19	54
01:00-01:15	2	1	3	07:00-07:15	10	28	38	01:00-01:15	36	28	64	07:00-07:15	31	13	44
01:15-01:30	4	0	4	07:15-07:30	12	52	64	01:15-01:30	35	23	58	07:15-07:30	33	8	41
01:30-01:45	0	2	2	07:30-07:45	15	75	90	01:30-01:45	38	17	55	07:30-07:45	10	7	17
01:45-02:00	2	0	2	07:45-08:00	29	58	87	01:45-02:00	26	31	57	07:45-08:00	22	8	30
02:00-02:15	3	1	4	08:00-08:15	28	31	59	02:00-02:15	28	21	49	08:00-08:15	23	4	27
02:15-02:30	0	0	0	08:15-08:30	14	29	43	02:15-02:30	24	26	50	08:15-08:30	23	9	32
02:30-02:45	0	0	0	08:30-08:45	20	37	57	02:30-02:45	21	25	46	08:30-08:45	18	5	23
02:45-03:00	0	0	0	08:45-09:00	17	40	57	02:45-03:00	36	21	57	08:45-09:00	26	4	30
03:00-03:15	0	0	0	09:00-09:15	21	36	57	03:00-03:15	27	23	50	09:00-09:15	7	8	15
03:15-03:30	2	0	2	09:15-09:30	27	26	53	03:15-03:30	22	14	36	09:15-09:30	16	7	23
03:30-03:45	0	0	0	09:30-09:45	17	21	38	03:30-03:45	24	16	40	09:30-09:45	16	4	20
03:45-04:00	0	2	2	09:45-10:00	15	28	43	03:45-04:00	22	17	39	09:45-10:00	5	2	7
04:00-04:15	0	1	1	10:00-10:15	19	29	48	04:00-04:15	45	31	76	10:00-10:15	6	3	9
04:15-04:30	1	4	5	10:15-10:30	25	31	56	04:15-04:30	41	36	77	10:15-10:30	14	5	19
04:30-04:45	0	6	6	10:30-10:45	15	31	46	04:30-04:45	32	29	61	10:30-10:45	10	2	12
04:45-05:00	0	9	9	10:45-11:00	22	23	45	04:45-05:00	45	27	72	10:45-11:00	6	4	10
05:00-05:15	1	5	6	11:00-11:15	29	22	51	05:00-05:15	34	16	50	11:00-11:15	4	0	4
05:15-05:30	2	16	18	11:15-11:30	25	25	50	05:15-05:30	36	30	66	11:15-11:30	10	2	12
05:30-05:45	3	15	18	11:30-11:45	30	24	54	05:30-05:45	45	29	74	11:30-11:45	11	3	14
05:45-06:00	7	18	25	11:45-12:00	21	20	41	05:45-06:00	40	25	65	11:45-12:00	2	0	2

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	84	216	300
AM - K FACTOR (%)			9.14
AM - D (%)	28.00	72.00	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	91	216	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	163	123	286
PM - K FACTOR (%)			8.71
PM - D (%)	56.99	43.01	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	163	123	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	84	216	300
AM - K FACTOR (%)			9.14
AM - D (%)	28.00	72.00	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	163	123	286
PM - K FACTOR (%)			8.71
PM - D (%)	56.99	43.01	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM		
PEAK HR VOLUME	122	116	238
DIRECTIONAL PEAK			
PEAK HR TIME	01:00 PM to 02:00 PM	12:15 PM to 01:15 PM	
PEAK HR VOLUME	135	122	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	441	764	1,205
AM 12-HR PERIOD (00:00-12:00)	480	844	1,324
PM 6-HR PERIOD (12:00-18:00)	752	596	1,348
PM 12-HR PERIOD (12:00-24:00)	1,190	768	1,958
24 HOUR PERIOD	1,670	1,612	3,282
D (%)	50.88	49.12	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 02/01/2014															
12:00-12:15	6	1	7	06:00-06:15	2	4	6	12:00-12:15	30	26	56	06:00-06:15	28	24	52
12:15-12:30	5	1	6	06:15-06:30	2	9	11	12:15-12:30	36	30	66	06:15-06:30	42	18	60
12:30-12:45	5	3	8	06:30-06:45	1	11	12	12:30-12:45	32	28	60	06:30-06:45	33	21	54
12:45-01:00	4	0	4	06:45-07:00	8	17	25	12:45-01:00	22	29	51	06:45-07:00	40	20	60
01:00-01:15	2	2	4	07:00-07:15	10	21	31	01:00-01:15	18	25	43	07:00-07:15	31	11	42
01:15-01:30	1	5	6	07:15-07:30	3	17	20	01:15-01:30	31	33	64	07:15-07:30	23	22	45
01:30-01:45	2	1	3	07:30-07:45	7	20	27	01:30-01:45	43	27	70	07:30-07:45	19	13	32
01:45-02:00	6	1	7	07:45-08:00	21	35	56	01:45-02:00	24	29	53	07:45-08:00	17	8	25
02:00-02:15	2	1	3	08:00-08:15	13	34	47	02:00-02:15	30	26	56	08:00-08:15	16	8	24
02:15-02:30	3	1	4	08:15-08:30	11	24	35	02:15-02:30	28	15	43	08:15-08:30	21	4	25
02:30-02:45	4	1	5	08:30-08:45	16	38	54	02:30-02:45	23	29	52	08:30-08:45	6	10	16
02:45-03:00	2	0	2	08:45-09:00	19	41	60	02:45-03:00	24	25	49	08:45-09:00	11	3	14
03:00-03:15	1	2	3	09:00-09:15	21	29	50	03:00-03:15	28	29	57	09:00-09:15	13	6	19
03:15-03:30	0	0	0	09:15-09:30	14	37	51	03:15-03:30	24	22	46	09:15-09:30	19	8	27
03:30-03:45	2	0	2	09:30-09:45	15	23	38	03:30-03:45	19	22	41	09:30-09:45	17	5	22
03:45-04:00	1	0	1	09:45-10:00	20	29	49	03:45-04:00	18	22	40	09:45-10:00	25	6	31
04:00-04:15	0	2	2	10:00-10:15	22	26	48	04:00-04:15	18	22	40	10:00-10:15	20	7	27
04:15-04:30	2	4	6	10:15-10:30	31	28	59	04:15-04:30	20	24	44	10:15-10:30	17	2	19
04:30-04:45	0	1	1	10:30-10:45	19	32	51	04:30-04:45	24	24	48	10:30-10:45	19	6	25
04:45-05:00	2	5	7	10:45-11:00	34	38	72	04:45-05:00	33	16	49	10:45-11:00	16	10	26
05:00-05:15	2	1	3	11:00-11:15	26	31	57	05:00-05:15	19	25	44	11:00-11:15	20	5	25
05:15-05:30	2	0	2	11:15-11:30	23	27	50	05:15-05:30	17	24	41	11:15-11:30	12	8	20
05:30-05:45	1	7	8	11:30-11:45	26	21	47	05:30-05:45	26	28	54	11:30-11:45	12	2	14
05:45-06:00	1	8	9	11:45-12:00	21	24	45	05:45-06:00	33	23	56	11:45-12:00	8	1	9

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	59	137	196
AM - K FACTOR (%)			6.45
AM - D (%)	30.10	69.90	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	61	137	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM		
PM - PEAK HR VOLUME	143	83	226
PM - K FACTOR (%)			7.43
PM - D (%)	63.27	36.73	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	05:00 PM to 06:00 PM	
PM - PEAK HR VOLUME	143	100	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	10:15 AM to 11:15 AM		
AM - PEAK HR VOLUME	110	129	239
AM - K FACTOR (%)			7.86
AM - D (%)	46.03	53.97	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	01:15 PM to 02:15 PM		
PM - PEAK HR VOLUME	128	115	243
PM - K FACTOR (%)			7.99
PM - D (%)	52.67	47.33	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM		
PEAK HR VOLUME	128	115	243
DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM	10:15 AM to 11:15 AM	
PEAK HR VOLUME	128	129	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	385	616	1,001
AM 12-HR PERIOD (00:00-12:00)	441	663	1,104
PM 6-HR PERIOD (12:00-18:00)	620	603	1,223
PM 12-HR PERIOD (12:00-24:00)	1,105	831	1,936
24 HOUR PERIOD	1,546	1,494	3,040
D (%)	50.86	49.14	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/31/2014															
12:00-12:15	2	0	2	06:00-06:15	4	16	20	12:00-12:15	17	23	40	06:00-06:15	45	23	68
12:15-12:30	3	0	3	06:15-06:30	5	17	22	12:15-12:30	28	29	57	06:15-06:30	53	33	86
12:30-12:45	1	0	1	06:30-06:45	9	23	32	12:30-12:45	24	16	40	06:30-06:45	41	11	52
12:45-01:00	1	1	2	06:45-07:00	10	24	34	12:45-01:00	24	23	47	06:45-07:00	30	13	43
01:00-01:15	3	1	4	07:00-07:15	9	36	45	01:00-01:15	23	21	44	07:00-07:15	35	17	52
01:15-01:30	0	0	0	07:15-07:30	11	44	55	01:15-01:30	22	24	46	07:15-07:30	21	12	33
01:30-01:45	2	0	2	07:30-07:45	10	64	74	01:30-01:45	26	27	53	07:30-07:45	26	16	42
01:45-02:00	0	0	0	07:45-08:00	33	44	77	01:45-02:00	17	27	44	07:45-08:00	21	14	35
02:00-02:15	1	2	3	08:00-08:15	32	26	58	02:00-02:15	32	22	54	08:00-08:15	23	10	33
02:15-02:30	0	0	0	08:15-08:30	20	36	56	02:15-02:30	52	21	73	08:15-08:30	17	10	27
02:30-02:45	0	0	0	08:30-08:45	17	29	46	02:30-02:45	40	22	62	08:30-08:45	24	14	38
02:45-03:00	0	0	0	08:45-09:00	28	45	73	02:45-03:00	39	20	59	08:45-09:00	19	16	35
03:00-03:15	0	0	0	09:00-09:15	18	42	60	03:00-03:15	25	33	58	09:00-09:15	20	6	26
03:15-03:30	0	0	0	09:15-09:30	15	25	40	03:15-03:30	38	19	57	09:15-09:30	16	13	29
03:30-03:45	0	1	1	09:30-09:45	15	37	52	03:30-03:45	35	29	64	09:30-09:45	20	3	23
03:45-04:00	0	1	1	09:45-10:00	15	38	53	03:45-04:00	24	26	50	09:45-10:00	18	1	19
04:00-04:15	1	1	2	10:00-10:15	21	25	46	04:00-04:15	39	29	68	10:00-10:15	16	7	23
04:15-04:30	0	6	6	10:15-10:30	22	25	47	04:15-04:30	39	23	62	10:15-10:30	19	8	27
04:30-04:45	1	5	6	10:30-10:45	12	26	38	04:30-04:45	47	35	82	10:30-10:45	13	4	17
04:45-05:00	0	8	8	10:45-11:00	23	39	62	04:45-05:00	40	41	81	10:45-11:00	7	6	13
05:00-05:15	1	16	17	11:00-11:15	16	20	36	05:00-05:15	38	38	76	11:00-11:15	9	3	12
05:15-05:30	0	12	12	11:15-11:30	27	26	53	05:15-05:30	56	31	87	11:15-11:30	11	1	12
05:30-05:45	2	11	13	11:30-11:45	24	23	47	05:30-05:45	38	25	63	11:30-11:45	4	1	5
05:45-06:00	2	17	19	11:45-12:00	21	30	51	05:45-06:00	37	24	61	11:45-12:00	4	1	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	95	170	265
AM - K FACTOR (%)			7.65
AM - D (%)	35.85	64.15	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	102	188	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	181	145	326
PM - K FACTOR (%)			9.42
PM - D (%)	55.52	44.48	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM	04:30 PM to 05:30 PM	
PM - PEAK HR VOLUME	181	145	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	95	170	265
AM - K FACTOR (%)			7.65
AM - D (%)	35.85	64.15	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	181	145	326
PM - K FACTOR (%)			9.42
PM - D (%)	55.52	44.48	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	163	85	248
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	163	142	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	417	760	1,177
AM 12-HR PERIOD (00:00-12:00)	437	842	1,279
PM 6-HR PERIOD (12:00-18:00)	800	628	1,428
PM 12-HR PERIOD (12:00-24:00)	1,312	871	2,183
24 HOUR PERIOD	1,749	1,713	3,462
D (%)	50.52	49.48	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 02/03/2014															
12:00-12:15	2	0	2	06:00-06:15	2	19	21	12:00-12:15	30	24	54	06:00-06:15	51	13	64
12:15-12:30	5	1	6	06:15-06:30	5	19	24	12:15-12:30	28	26	54	06:15-06:30	47	15	62
12:30-12:45	3	0	3	06:30-06:45	8	21	29	12:30-12:45	17	19	36	06:30-06:45	58	15	73
12:45-01:00	2	0	2	06:45-07:00	9	24	33	12:45-01:00	12	16	28	06:45-07:00	43	16	59
01:00-01:15	2	2	4	07:00-07:15	14	27	41	01:00-01:15	24	33	57	07:00-07:15	32	9	41
01:15-01:30	3	0	3	07:15-07:30	10	50	60	01:15-01:30	20	16	36	07:15-07:30	17	9	26
01:30-01:45	0	0	0	07:30-07:45	7	77	84	01:30-01:45	20	24	44	07:30-07:45	36	9	45
01:45-02:00	0	0	0	07:45-08:00	28	56	84	01:45-02:00	16	30	46	07:45-08:00	14	11	25
02:00-02:15	0	1	1	08:00-08:15	25	48	73	02:00-02:15	28	27	55	08:00-08:15	18	9	27
02:15-02:30	0	0	0	08:15-08:30	18	24	42	02:15-02:30	37	25	62	08:15-08:30	16	6	22
02:30-02:45	1	2	3	08:30-08:45	19	36	55	02:30-02:45	31	19	50	08:30-08:45	16	6	22
02:45-03:00	0	1	1	08:45-09:00	37	41	78	02:45-03:00	24	23	47	08:45-09:00	21	7	28
03:00-03:15	0	0	0	09:00-09:15	21	33	54	03:00-03:15	24	16	40	09:00-09:15	15	9	24
03:15-03:30	0	0	0	09:15-09:30	19	46	65	03:15-03:30	24	26	50	09:15-09:30	17	7	24
03:30-03:45	0	1	1	09:30-09:45	17	21	38	03:30-03:45	42	36	78	09:30-09:45	11	15	26
03:45-04:00	1	0	1	09:45-10:00	21	29	50	03:45-04:00	39	33	72	09:45-10:00	25	6	31
04:00-04:15	0	3	3	10:00-10:15	17	27	44	04:00-04:15	40	30	70	10:00-10:15	16	1	17
04:15-04:30	1	3	4	10:15-10:30	25	30	55	04:15-04:30	38	35	73	10:15-10:30	16	4	20
04:30-04:45	0	5	5	10:30-10:45	25	25	50	04:30-04:45	39	24	63	10:30-10:45	12	2	14
04:45-05:00	0	10	10	10:45-11:00	30	20	50	04:45-05:00	40	36	76	10:45-11:00	5	3	8
05:00-05:15	0	3	3	11:00-11:15	19	30	49	05:00-05:15	41	35	76	11:00-11:15	9	2	11
05:15-05:30	1	7	8	11:15-11:30	15	19	34	05:15-05:30	42	31	73	11:15-11:30	5	1	6
05:30-05:45	1	12	13	11:30-11:45	25	26	51	05:30-05:45	27	28	55	11:30-11:45	4	1	5
05:45-06:00	2	20	22	11:45-12:00	26	25	51	05:45-06:00	33	20	53	11:45-12:00	4	4	8

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	70	231	301
AM - K FACTOR (%)			9.00
AM - D (%)	23.26	76.74	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	99	231	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	159	134	293
PM - K FACTOR (%)			8.76
PM - D (%)	54.27	45.73	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	199	134	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	70	231	301
AM - K FACTOR (%)			9.00
AM - D (%)	23.26	76.74	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	159	134	293
PM - K FACTOR (%)			8.76
PM - D (%)	54.27	45.73	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	120	94	214
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	120	129	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	442	773	1,215
AM 12-HR PERIOD (00:00-12:00)	466	844	1,310
PM 6-HR PERIOD (12:00-18:00)	716	632	1,348
PM 12-HR PERIOD (12:00-24:00)	1,224	812	2,036
24 HOUR PERIOD	1,690	1,656	3,346
D (%)	50.51	49.49	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 02/02/2014															
12:00-12:15	7	2	9	06:00-06:15	1	7	8	12:00-12:15	27	35	62	06:00-06:15	37	24	61
12:15-12:30	4	4	8	06:15-06:30	1	11	12	12:15-12:30	25	24	49	06:15-06:30	48	22	70
12:30-12:45	4	1	5	06:30-06:45	2	9	11	12:30-12:45	34	20	54	06:30-06:45	30	18	48
12:45-01:00	3	1	4	06:45-07:00	1	11	12	12:45-01:00	21	34	55	06:45-07:00	32	10	42
01:00-01:15	3	0	3	07:00-07:15	4	12	16	01:00-01:15	23	30	53	07:00-07:15	19	12	31
01:15-01:30	3	1	4	07:15-07:30	6	14	20	01:15-01:30	20	24	44	07:15-07:30	21	8	29
01:30-01:45	2	1	3	07:30-07:45	7	15	22	01:30-01:45	22	18	40	07:30-07:45	17	9	26
01:45-02:00	4	2	6	07:45-08:00	4	23	27	01:45-02:00	35	15	50	07:45-08:00	17	11	28
02:00-02:15	1	0	1	08:00-08:15	11	26	37	02:00-02:15	22	26	48	08:00-08:15	15	13	28
02:15-02:30	5	1	6	08:15-08:30	11	33	44	02:15-02:30	27	22	49	08:15-08:30	11	15	26
02:30-02:45	4	1	5	08:30-08:45	11	29	40	02:30-02:45	20	20	40	08:30-08:45	22	17	39
02:45-03:00	1	2	3	08:45-09:00	12	34	46	02:45-03:00	24	13	37	08:45-09:00	14	14	28
03:00-03:15	1	1	2	09:00-09:15	11	28	39	03:00-03:15	18	22	40	09:00-09:15	13	8	21
03:15-03:30	1	0	1	09:15-09:30	19	29	48	03:15-03:30	23	25	48	09:15-09:30	14	11	25
03:30-03:45	1	1	2	09:30-09:45	19	42	61	03:30-03:45	35	20	55	09:30-09:45	17	21	38
03:45-04:00	3	1	4	09:45-10:00	22	35	57	03:45-04:00	31	11	42	09:45-10:00	12	11	23
04:00-04:15	4	1	5	10:00-10:15	17	25	42	04:00-04:15	27	19	46	10:00-10:15	12	8	20
04:15-04:30	1	1	2	10:15-10:30	19	20	39	04:15-04:30	35	22	57	10:15-10:30	5	4	9
04:30-04:45	0	3	3	10:30-10:45	20	28	48	04:30-04:45	19	16	35	10:30-10:45	9	2	11
04:45-05:00	1	2	3	10:45-11:00	24	21	45	04:45-05:00	26	28	54	10:45-11:00	13	5	18
05:00-05:15	2	3	5	11:00-11:15	17	21	38	05:00-05:15	28	26	54	11:00-11:15	9	4	13
05:15-05:30	2	4	6	11:15-11:30	35	21	56	05:15-05:30	26	25	51	11:15-11:30	5	3	8
05:30-05:45	1	4	5	11:30-11:45	17	27	44	05:30-05:45	38	28	66	11:30-11:45	2	2	4
05:45-06:00	2	4	6	11:45-12:00	36	30	66	05:45-06:00	30	15	45	11:45-12:00	5	2	7

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	45	122	167
AM - K FACTOR (%)			5.95
AM - D (%)	26.95	73.05	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	45	122	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	153	89	242
PM - K FACTOR (%)			8.62
PM - D (%)	63.22	36.78	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	153	107	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:15 AM to 10:15 AM		
AM - PEAK HR VOLUME	77	131	208
AM - K FACTOR (%)			7.41
AM - D (%)	37.02	62.98	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	153	89	242
PM - K FACTOR (%)			8.62
PM - D (%)	63.22	36.78	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:45 AM to 12:45 PM		
PEAK HR VOLUME	122	109	231
DIRECTIONAL PEAK			
PEAK HR TIME	11:45 AM to 12:45 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	122	134	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	327	551	878
AM 12-HR PERIOD (00:00-12:00)	387	592	979
PM 6-HR PERIOD (12:00-18:00)	636	538	1,174
PM 12-HR PERIOD (12:00-24:00)	1,035	792	1,827
24 HOUR PERIOD	1,422	1,384	2,806
D (%)	50.68	49.32	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 02/05/2014															
12:00-12:15	5	1	6	06:00-06:15	4	16	20	12:00-12:15	28	26	54	06:00-06:15	39	22	61
12:15-12:30	4	1	5	06:15-06:30	8	19	27	12:15-12:30	18	30	48	06:15-06:30	41	14	55
12:30-12:45	4	0	4	06:30-06:45	13	28	41	12:30-12:45	29	39	68	06:30-06:45	44	18	62
12:45-01:00	2	1	3	06:45-07:00	10	39	49	12:45-01:00	27	31	58	06:45-07:00	30	13	43
01:00-01:15	0	0	0	07:00-07:15	13	27	40	01:00-01:15	33	14	47	07:00-07:15	37	10	47
01:15-01:30	2	0	2	07:15-07:30	10	62	72	01:15-01:30	22	26	48	07:15-07:30	31	13	44
01:30-01:45	1	0	1	07:30-07:45	15	78	93	01:30-01:45	20	23	43	07:30-07:45	19	5	24
01:45-02:00	0	0	0	07:45-08:00	22	48	70	01:45-02:00	28	17	45	07:45-08:00	21	6	27
02:00-02:15	1	0	1	08:00-08:15	29	39	68	02:00-02:15	21	24	45	08:00-08:15	17	7	24
02:15-02:30	0	0	0	08:15-08:30	21	35	56	02:15-02:30	26	31	57	08:15-08:30	25	11	36
02:30-02:45	0	1	1	08:30-08:45	16	30	46	02:30-02:45	24	23	47	08:30-08:45	14	4	18
02:45-03:00	0	0	0	08:45-09:00	22	40	62	02:45-03:00	33	21	54	08:45-09:00	17	9	26
03:00-03:15	1	1	2	09:00-09:15	31	28	59	03:00-03:15	32	22	54	09:00-09:15	15	5	20
03:15-03:30	1	1	2	09:15-09:30	31	20	51	03:15-03:30	22	22	44	09:15-09:30	13	5	18
03:30-03:45	1	1	2	09:30-09:45	24	28	52	03:30-03:45	28	23	51	09:30-09:45	11	7	18
03:45-04:00	0	3	3	09:45-10:00	21	40	61	03:45-04:00	36	19	55	09:45-10:00	13	3	16
04:00-04:15	0	3	3	10:00-10:15	22	27	49	04:00-04:15	34	37	71	10:00-10:15	10	2	12
04:15-04:30	0	9	9	10:15-10:30	13	18	31	04:15-04:30	39	16	55	10:15-10:30	17	5	22
04:30-04:45	0	4	4	10:30-10:45	24	34	58	04:30-04:45	34	21	55	10:30-10:45	7	4	11
04:45-05:00	0	14	14	10:45-11:00	21	24	45	04:45-05:00	33	24	57	10:45-11:00	3	0	3
05:00-05:15	1	10	11	11:00-11:15	14	31	45	05:00-05:15	37	18	55	11:00-11:15	6	0	6
05:15-05:30	1	11	12	11:15-11:30	16	18	34	05:15-05:30	34	18	52	11:15-11:30	8	3	11
05:30-05:45	1	14	15	11:30-11:45	27	17	44	05:30-05:45	24	21	45	11:30-11:45	11	2	13
05:45-06:00	3	23	26	11:45-12:00	22	22	44	05:45-06:00	34	22	56	11:45-12:00	6	0	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	76	227	303
AM - K FACTOR (%)			9.38
AM - D (%)	25.08	74.92	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	88	227	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	140	98	238
PM - K FACTOR (%)			7.37
PM - D (%)	58.82	41.18	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	03:15 PM to 04:15 PM	
PM - PEAK HR VOLUME	158	101	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	76	227	303
AM - K FACTOR (%)			9.38
AM - D (%)	25.08	74.92	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	140	98	238
PM - K FACTOR (%)			7.37
PM - D (%)	58.82	41.18	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:00 PM to 01:00 PM		
PEAK HR VOLUME	102	126	228
DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM	12:00 PM to 01:00 PM	
PEAK HR VOLUME	111	126	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	449	768	1,217
AM 12-HR PERIOD (00:00-12:00)	477	866	1,343
PM 6-HR PERIOD (12:00-18:00)	696	568	1,264
PM 12-HR PERIOD (12:00-24:00)	1,151	736	1,887
24 HOUR PERIOD	1,628	1,602	3,230
D (%)	50.40	49.60	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 02/04/2014															
12:00-12:15	5	0	5	06:00-06:15	1	12	13	12:00-12:15	22	19	41	06:00-06:15	42	24	66
12:15-12:30	2	2	4	06:15-06:30	8	13	21	12:15-12:30	28	27	55	06:15-06:30	43	23	66
12:30-12:45	3	1	4	06:30-06:45	7	18	25	12:30-12:45	20	19	39	06:30-06:45	39	22	61
12:45-01:00	5	2	7	06:45-07:00	12	15	27	12:45-01:00	25	25	50	06:45-07:00	40	18	58
01:00-01:15	1	1	2	07:00-07:15	14	26	40	01:00-01:15	29	27	56	07:00-07:15	23	21	44
01:15-01:30	1	0	1	07:15-07:30	9	27	36	01:15-01:30	27	29	56	07:15-07:30	22	12	34
01:30-01:45	1	1	2	07:30-07:45	16	23	39	01:30-01:45	21	28	49	07:30-07:45	20	11	31
01:45-02:00	2	0	2	07:45-08:00	22	24	46	01:45-02:00	25	28	53	07:45-08:00	17	6	23
02:00-02:15	0	0	0	08:00-08:15	11	24	35	02:00-02:15	27	18	45	08:00-08:15	18	11	29
02:15-02:30	0	0	0	08:15-08:30	9	33	42	02:15-02:30	29	23	52	08:15-08:30	14	4	18
02:30-02:45	0	0	0	08:30-08:45	19	40	59	02:30-02:45	31	23	54	08:30-08:45	17	4	21
02:45-03:00	1	1	2	08:45-09:00	19	48	67	02:45-03:00	31	30	61	08:45-09:00	20	4	24
03:00-03:15	0	1	1	09:00-09:15	12	39	51	03:00-03:15	32	29	61	09:00-09:15	12	3	15
03:15-03:30	1	1	2	09:15-09:30	23	40	63	03:15-03:30	29	18	47	09:15-09:30	15	1	16
03:30-03:45	0	0	0	09:30-09:45	20	30	50	03:30-03:45	35	30	65	09:30-09:45	17	8	25
03:45-04:00	0	1	1	09:45-10:00	17	30	47	03:45-04:00	28	17	45	09:45-10:00	12	3	15
04:00-04:15	0	3	3	10:00-10:15	27	23	50	04:00-04:15	30	21	51	10:00-10:15	3	2	5
04:15-04:30	0	2	2	10:15-10:30	33	31	64	04:15-04:30	27	28	55	10:15-10:30	5	5	10
04:30-04:45	0	6	6	10:30-10:45	17	31	48	04:30-04:45	44	38	82	10:30-10:45	19	1	20
04:45-05:00	0	8	8	10:45-11:00	24	35	59	04:45-05:00	35	27	62	10:45-11:00	11	4	15
05:00-05:15	1	5	6	11:00-11:15	25	30	55	05:00-05:15	33	23	56	11:00-11:15	5	3	8
05:15-05:30	2	2	4	11:15-11:30	22	23	45	05:15-05:30	31	22	53	11:15-11:30	1	0	1
05:30-05:45	1	7	8	11:30-11:45	17	26	43	05:30-05:45	27	27	54	11:30-11:45	7	0	7
05:45-06:00	1	10	11	11:45-12:00	33	27	60	05:45-06:00	30	30	60	11:45-12:00	1	1	2

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	58	145	203
AM - K FACTOR (%)			6.59
AM - D (%)	28.57	71.43	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	61	145	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	139	116	255
PM - K FACTOR (%)			8.27
PM - D (%)	54.51	45.49	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	164	116	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:30 AM to 09:30 AM		
AM - PEAK HR VOLUME	73	167	240
AM - K FACTOR (%)			7.79
AM - D (%)	30.42	69.58	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	139	116	255
PM - K FACTOR (%)			8.27
PM - D (%)	54.51	45.49	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	10:15 AM to 11:15 AM		
PEAK HR VOLUME	99	127	226
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	118	139	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	417	668	1,085
AM 12-HR PERIOD (00:00-12:00)	444	722	1,166
PM 6-HR PERIOD (12:00-18:00)	696	606	1,302
PM 12-HR PERIOD (12:00-24:00)	1,119	797	1,916
24 HOUR PERIOD	1,563	1,519	3,082
D (%)	50.71	49.29	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2014

Site ID:	B72928000000	**Route No:**	9280	**Date From:**	2014/01/23 0:00
Town:	Oahu	**Direction:**	+MP	**Date To:**	2014/02/05 23:45
Location:	Pupukea Rd - Kamehameha Hwy to Alapio Rd				

Functional Classification: 18 TEST NEW URBAN: MINOR COLLECTOR
REPORT TOTALS - 336 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	726	1.63%	1451
PC	31359	70.45%	62718
2A-4T	12074	27.12%	24148
LIGHT VEHICLE TOTALS	44159	99.20%	88317
HEAVY VEHICLES			
Bus	86	0.19%	215
SINGLE UNIT TRUCK			
2A-6T	93	0.21%	186
3A-SU	135	0.30%	405
4A-SU	6	0.01%	24
SINGLE-TRAILER TRUCKS			
4A-ST	23	0.05%	92
5A-ST	5	0.01%	25
6A-ST	2	0.00%	12
MULTI-TRAILER TRUCKS			
5A-MT	2	0.00%	10
6A-MT	0	0.00%	0
7A-MT	1	0.00%	7
HEAVY VEHICLE TOTALS	353	0.79%	976
CLASSIFIED VEHICLES TOTALS	44512 (A)	100.00%	89293 (B)
UNCLASSIFIED VEHICLES TOTALS	1	0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.997

ROADTUBE EQUIVALENT(B/2) = 44647 (C)

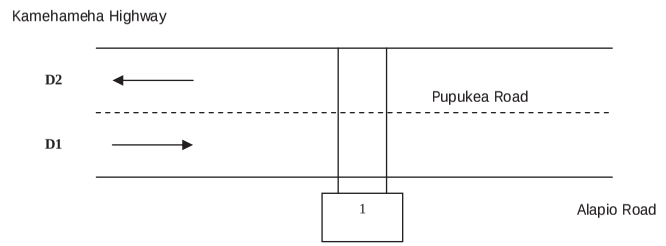
PEAK HOUR VOLUME : 293 2014/01/28 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	4	(65A-1) 1.37%	22	3300	(65A-2) 0.67%	8.88%
COMBINATION (TYPE 8-13)	1	(65B-1) 0.34%	2		(65B-2) 0.06%	8.88%

Traffic Data Service
Traffic Station Sketch

N

Island: Oahu
Area: Waimea

Section ID/Station #: B72928000000



Meter #	File Name	GPS
1. t161	D0327003_B72928000000	21.64597, -158.0592
2.	D0327004_B72928000000	

Station Description:
Pupukea Road: Kamehameha Highway to Alapio Road

Survey Beginning Date/Time: 3/27/14@ 0000		Survey Ending Date/Time: 4/9/14@ 2400

Survey Method:	Road Tube	Data Type:	Class
Survey Crew:	LM		C1B
Sketch Updated:		By:	SR
Remarks:	748		

FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	ROUTE MILE
Pupukea Road		18		9280	

D1= Direction to End — D1: Alapio Road / Kanalani Place
D2= Direction to Begin — D2: Kamehameha Highway / Kamehameha Highway

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 03/28/2014															
12:00-12:15	0	2	2	06:00-06:15	16	4	20	12:00-12:15	34	28	62	06:00-06:15	25	39	64
12:15-12:30	1	2	3	06:15-06:30	13	4	17	12:15-12:30	31	29	60	06:15-06:30	26	43	69
12:30-12:45	2	4	6	06:30-06:45	26	8	34	12:30-12:45	29	25	54	06:30-06:45	21	37	58
12:45-01:00	0	3	3	06:45-07:00	28	13	41	12:45-01:00	26	24	50	06:45-07:00	23	42	65
01:00-01:15	2	1	3	07:00-07:15	26	6	32	01:00-01:15	23	29	52	07:00-07:15	9	42	51
01:15-01:30	0	3	3	07:15-07:30	55	11	66	01:15-01:30	19	27	46	07:15-07:30	23	32	55
01:30-01:45	0	0	0	07:30-07:45	75	21	96	01:30-01:45	29	33	62	07:30-07:45	14	38	52
01:45-02:00	1	1	2	07:45-08:00	49	32	81	01:45-02:00	36	22	58	07:45-08:00	12	31	43
02:00-02:15	0	1	1	08:00-08:15	29	24	53	02:00-02:15	29	30	59	08:00-08:15	12	27	39
02:15-02:30	0	0	0	08:15-08:30	30	28	58	02:15-02:30	21	41	62	08:15-08:30	13	18	31
02:30-02:45	0	1	1	08:30-08:45	30	17	47	02:30-02:45	21	39	60	08:30-08:45	7	26	33
02:45-03:00	0	1	1	08:45-09:00	44	32	76	02:45-03:00	33	38	71	08:45-09:00	13	15	28
03:00-03:15	0	0	0	09:00-09:15	38	21	59	03:00-03:15	25	20	45	09:00-09:15	9	21	30
03:15-03:30	1	0	1	09:15-09:30	37	18	55	03:15-03:30	32	29	61	09:15-09:30	11	17	28
03:30-03:45	0	0	0	09:30-09:45	29	19	48	03:30-03:45	27	46	73	09:30-09:45	9	18	27
03:45-04:00	2	0	2	09:45-10:00	21	21	42	03:45-04:00	25	23	48	09:45-10:00	3	21	24
04:00-04:15	0	0	0	10:00-10:15	31	18	49	04:00-04:15	25	43	68	10:00-10:15	16	22	38
04:15-04:30	4	0	4	10:15-10:30	33	20	53	04:15-04:30	27	25	52	10:15-10:30	7	20	27
04:30-04:45	7	0	7	10:30-10:45	31	22	53	04:30-04:45	32	36	68	10:30-10:45	7	13	20
04:45-05:00	9	0	9	10:45-11:00	28	16	44	04:45-05:00	39	41	80	10:45-11:00	8	10	18
05:00-05:15	12	1	13	11:00-11:15	23	19	42	05:00-05:15	27	47	74	11:00-11:15	5	6	11
05:15-05:30	9	2	11	11:15-11:30	21	20	41	05:15-05:30	22	44	66	11:15-11:30	6	9	15
05:30-05:45	25	1	26	11:30-11:45	23	20	43	05:30-05:45	30	48	78	11:30-11:45	1	8	9
05:45-06:00	15	5	20	11:45-12:00	26	25	51	05:45-06:00	34	37	71	11:45-12:00	1	13	14

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	208	88	296
AM - K FACTOR (%)			8.11
AM - D (%)	70.27	29.73	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM	07:30 AM to 08:30 AM	
AM - PEAK HR VOLUME	208	105	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	118	180	298
PM - K FACTOR (%)			8.17
PM - D (%)	39.60	60.40	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	125	180	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	208	88	296
AM - K FACTOR (%)			8.11
AM - D (%)	70.27	29.73	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	118	180	298
PM - K FACTOR (%)			8.17
PM - D (%)	39.60	60.40	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	104	148	252
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	125	148	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	762	439	1,201
AM 12-HR PERIOD (00:00-12:00)	852	467	1,319
PM 6-HR PERIOD (12:00-18:00)	676	804	1,480
PM 12-HR PERIOD (12:00-24:00)	957	1,372	2,329
24 HOUR PERIOD	1,809	1,839	3,648
D (%)	49.59	50.41	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 03/27/2014															
12:00-12:15	0	0	0	06:00-06:15	18	2	20	12:00-12:15	24	24	48	06:00-06:15	27	29	56
12:15-12:30	2	6	8	06:15-06:30	23	7	30	12:15-12:30	18	14	32	06:15-06:30	19	46	65
12:30-12:45	2	1	3	06:30-06:45	25	9	34	12:30-12:45	28	12	40	06:30-06:45	20	37	57
12:45-01:00	1	1	2	06:45-07:00	27	16	43	12:45-01:00	24	22	46	06:45-07:00	20	42	62
01:00-01:15	1	1	2	07:00-07:15	38	10	48	01:00-01:15	17	27	44	07:00-07:15	11	45	56
01:15-01:30	0	2	2	07:15-07:30	41	3	44	01:15-01:30	20	32	52	07:15-07:30	18	21	39
01:30-01:45	1	0	1	07:30-07:45	72	20	92	01:30-01:45	32	23	55	07:30-07:45	18	44	62
01:45-02:00	0	2	2	07:45-08:00	45	37	82	01:45-02:00	33	22	55	07:45-08:00	13	27	40
02:00-02:15	1	0	1	08:00-08:15	27	25	52	02:00-02:15	30	23	53	08:00-08:15	6	26	32
02:15-02:30	0	1	1	08:15-08:30	36	23	59	02:15-02:30	21	35	56	08:15-08:30	6	26	32
02:30-02:45	1	0	1	08:30-08:45	28	20	48	02:30-02:45	17	26	43	08:30-08:45	9	17	26
02:45-03:00	0	0	0	08:45-09:00	35	29	64	02:45-03:00	17	30	47	08:45-09:00	9	23	32
03:00-03:15	1	2	3	09:00-09:15	38	27	65	03:00-03:15	29	32	61	09:00-09:15	10	18	28
03:15-03:30	0	0	0	09:15-09:30	22	11	33	03:15-03:30	28	33	61	09:15-09:30	2	23	25
03:30-03:45	3	0	3	09:30-09:45	24	23	47	03:30-03:45	32	26	58	09:30-09:45	2	14	16
03:45-04:00	0	0	0	09:45-10:00	37	19	56	03:45-04:00	20	35	55	09:45-10:00	2	21	23
04:00-04:15	2	0	2	10:00-10:15	32	17	49	04:00-04:15	29	47	76	10:00-10:15	2	17	19
04:15-04:30	5	1	6	10:15-10:30	29	15	44	04:15-04:30	35	42	77	10:15-10:30	2	10	12
04:30-04:45	3	0	3	10:30-10:45	32	14	46	04:30-04:45	36	42	78	10:30-10:45	3	4	7
04:45-05:00	10	1	11	10:45-11:00	24	22	46	04:45-05:00	26	34	60	10:45-11:00	5	7	12
05:00-05:15	11	0	11	11:00-11:15	17	22	39	05:00-05:15	26	35	61	11:00-11:15	2	7	9
05:15-05:30	10	2	12	11:15-11:30	29	17	46	05:15-05:30	35	42	77	11:15-11:30	0	9	9
05:30-05:45	20	3	23	11:30-11:45	22	24	46	05:30-05:45	25	39	64	11:30-11:45	0	4	4
05:45-06:00	13	3	16	11:45-12:00	19	20	39	05:45-06:00	21	44	65	11:45-12:00	1	5	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	180	105	285
AM - K FACTOR (%)			8.44
AM - D (%)	63.16	36.84	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:30 AM to 08:30 AM	
AM - PEAK HR VOLUME	196	105	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	126	165	291
PM - K FACTOR (%)			8.61
PM - D (%)	43.30	56.70	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	126	166	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	180	105	285
AM - K FACTOR (%)			8.44
AM - D (%)	63.16	36.84	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	126	165	291
PM - K FACTOR (%)			8.61
PM - D (%)	43.30	56.70	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM		
PEAK HR VOLUME	116	103	219
DIRECTIONAL PEAK			
PEAK HR TIME	09:45 AM to 10:45 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	130	114	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	740	432	1,172
AM 12-HR PERIOD (00:00-12:00)	827	458	1,285
PM 6-HR PERIOD (12:00-18:00)	623	741	1,364
PM 12-HR PERIOD (12:00-24:00)	830	1,263	2,093
24 HOUR PERIOD	1,657	1,721	3,378
D (%)	49.05	50.95	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 03/30/2014															
12:00-12:15	4	6	10	06:00-06:15	12	2	14	12:00-12:15	35	34	69	06:00-06:15	18	31	49
12:15-12:30	1	3	4	06:15-06:30	10	6	16	12:15-12:30	32	29	61	06:15-06:30	18	27	45
12:30-12:45	1	3	4	06:30-06:45	10	3	13	12:30-12:45	28	25	53	06:30-06:45	18	24	42
12:45-01:00	3	6	9	06:45-07:00	15	4	19	12:45-01:00	25	23	48	06:45-07:00	17	23	40
01:00-01:15	2	7	9	07:00-07:15	20	6	26	01:00-01:15	24	25	49	07:00-07:15	17	16	33
01:15-01:30	0	3	3	07:15-07:30	20	8	28	01:15-01:30	32	20	52	07:15-07:30	12	20	32
01:30-01:45	1	2	3	07:30-07:45	19	7	26	01:30-01:45	24	23	47	07:30-07:45	10	30	40
01:45-02:00	2	4	6	07:45-08:00	30	2	32	01:45-02:00	18	31	49	07:45-08:00	9	20	29
02:00-02:15	1	3	4	08:00-08:15	19	5	24	02:00-02:15	23	28	51	08:00-08:15	11	15	26
02:15-02:30	0	2	2	08:15-08:30	20	17	37	02:15-02:30	25	15	40	08:15-08:30	7	10	17
02:30-02:45	0	1	1	08:30-08:45	29	21	50	02:30-02:45	21	24	45	08:30-08:45	5	18	23
02:45-03:00	0	1	1	08:45-09:00	24	10	34	02:45-03:00	22	25	47	08:45-09:00	6	17	23
03:00-03:15	0	0	0	09:00-09:15	34	14	48	03:00-03:15	18	20	38	09:00-09:15	9	13	22
03:15-03:30	1	1	2	09:15-09:30	30	16	46	03:15-03:30	22	20	42	09:15-09:30	3	8	11
03:30-03:45	0	1	1	09:30-09:45	36	27	63	03:30-03:45	23	37	60	09:30-09:45	2	13	15
03:45-04:00	0	0	0	09:45-10:00	45	19	64	03:45-04:00	26	40	66	09:45-10:00	5	15	20
04:00-04:15	2	1	3	10:00-10:15	28	21	49	04:00-04:15	16	32	48	10:00-10:15	1	9	10
04:15-04:30	2	1	3	10:15-10:30	29	19	48	04:15-04:30	18	33	51	10:15-10:30	0	3	3
04:30-04:45	2	1	3	10:30-10:45	31	43	74	04:30-04:45	32	30	62	10:30-10:45	3	13	16
04:45-05:00	2	1	3	10:45-11:00	35	22	57	04:45-05:00	24	33	57	10:45-11:00	0	8	8
05:00-05:15	2	0	2	11:00-11:15	25	27	52	05:00-05:15	16	21	37	11:00-11:15	2	4	6
05:15-05:30	4	1	5	11:15-11:30	20	24	44	05:15-05:30	24	29	53	11:15-11:30	1	4	5
05:30-05:45	5	0	5	11:30-11:45	24	24	48	05:30-05:45	23	39	62	11:30-11:45	0	2	2
05:45-06:00	7	2	9	11:45-12:00	34	34	68	05:45-06:00	31	29	60	11:45-12:00	1	5	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	92	53	145
AM - K FACTOR (%)			5.10
AM - D (%)	63.45	36.55	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	98	53	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	92	135	227
PM - K FACTOR (%)			7.99
PM - D (%)	40.53	59.47	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	96	142	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:45 AM to 10:45 AM		
AM - PEAK HR VOLUME	133	102	235
AM - K FACTOR (%)			8.27
AM - D (%)	56.60	43.40	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	12:00 PM to 01:00 PM		
PM - PEAK HR VOLUME	120	111	231
PM - K FACTOR (%)			8.13
PM - D (%)	51.95	48.05	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:45 AM to 12:45 PM		
PEAK HR VOLUME	129	122	251
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	11:45 AM to 12:45 PM	
PEAK HR VOLUME	145	122	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	599	381	980
AM 12-HR PERIOD (00:00-12:00)	641	431	1,072
PM 6-HR PERIOD (12:00-18:00)	582	665	1,247
PM 12-HR PERIOD (12:00-24:00)	757	1,013	1,770
24 HOUR PERIOD	1,398	1,444	2,842
D (%)	49.19	50.81	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 03/29/2014															
12:00-12:15	2	4	6	06:00-06:15	11	2	13	12:00-12:15	27	18	45	06:00-06:15	27	35	62
12:15-12:30	2	7	9	06:15-06:30	14	3	17	12:15-12:30	32	23	55	06:15-06:30	30	29	59
12:30-12:45	4	2	6	06:30-06:45	8	9	17	12:30-12:45	17	22	39	06:30-06:45	28	36	64
12:45-01:00	1	6	7	06:45-07:00	20	11	31	12:45-01:00	17	24	41	06:45-07:00	20	39	59
01:00-01:15	1	1	2	07:00-07:15	24	11	35	01:00-01:15	23	37	60	07:00-07:15	21	45	66
01:15-01:30	1	1	2	07:15-07:30	36	3	39	01:15-01:30	39	28	67	07:15-07:30	17	32	49
01:30-01:45	0	3	3	07:30-07:45	17	15	32	01:30-01:45	22	25	47	07:30-07:45	26	45	71
01:45-02:00	0	2	2	07:45-08:00	27	16	43	01:45-02:00	20	32	52	07:45-08:00	11	33	44
02:00-02:15	0	1	1	08:00-08:15	33	12	45	02:00-02:15	21	34	55	08:00-08:15	17	17	34
02:15-02:30	0	6	6	08:15-08:30	24	11	35	02:15-02:30	17	21	38	08:15-08:30	18	21	39
02:30-02:45	1	1	2	08:30-08:45	40	25	65	02:30-02:45	23	33	56	08:30-08:45	14	27	41
02:45-03:00	0	1	1	08:45-09:00	31	21	52	02:45-03:00	17	33	50	08:45-09:00	9	24	33
03:00-03:15	0	0	0	09:00-09:15	34	24	58	03:00-03:15	31	34	65	09:00-09:15	15	17	32
03:15-03:30	0	0	0	09:15-09:30	38	19	57	03:15-03:30	25	33	58	09:15-09:30	12	18	30
03:30-03:45	1	3	4	09:30-09:45	40	18	58	03:30-03:45	19	23	42	09:30-09:45	12	19	31
03:45-04:00	0	1	1	09:45-10:00	26	34	60	03:45-04:00	27	39	66	09:45-10:00	9	10	19
04:00-04:15	3	1	4	10:00-10:15	44	17	61	04:00-04:15	29	29	58	10:00-10:15	14	17	31
04:15-04:30	5	0	5	10:15-10:30	28	29	57	04:15-04:30	29	28	57	10:15-10:30	12	24	36
04:30-04:45	2	1	3	10:30-10:45	35	32	67	04:30-04:45	35	24	59	10:30-10:45	10	11	21
04:45-05:00	4	1	5	10:45-11:00	34	21	55	04:45-05:00	19	27	46	10:45-11:00	9	15	24
05:00-05:15	1	0	1	11:00-11:15	26	31	57	05:00-05:15	22	29	51	11:00-11:15	13	9	22
05:15-05:30	5	2	7	11:15-11:30	37	25	62	05:15-05:30	28	33	61	11:15-11:30	3	11	14
05:30-05:45	9	1	10	11:30-11:45	18	32	50	05:30-05:45	38	33	71	11:30-11:45	1	4	5
05:45-06:00	10	3	13	11:45-12:00	25	25	50	05:45-06:00	17	38	55	11:45-12:00	3	11	14

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	128	69	197
AM - K FACTOR (%)			5.78
AM - D (%)	64.97	35.03	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	128	69	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	110	139	249
PM - K FACTOR (%)			7.30
PM - D (%)	44.18	55.82	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM	05:15 PM to 06:15 PM	
PM - PEAK HR VOLUME	120	139	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:45 AM to 10:45 AM		
AM - PEAK HR VOLUME	133	112	245
AM - K FACTOR (%)			7.18
AM - D (%)	54.29	45.71	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	110	139	249
PM - K FACTOR (%)			7.30
PM - D (%)	44.18	55.82	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:45 AM to 10:45 AM		
PEAK HR VOLUME	133	112	245
DIRECTIONAL PEAK			
PEAK HR TIME	09:15 AM to 10:15 AM	01:00 PM to 02:00 PM	
PEAK HR VOLUME	148	122	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	670	446	1,116
AM 12-HR PERIOD (00:00-12:00)	722	494	1,216
PM 6-HR PERIOD (12:00-18:00)	594	700	1,294
PM 12-HR PERIOD (12:00-24:00)	945	1,249	2,194
24 HOUR PERIOD	1,667	1,743	3,410
D (%)	48.89	51.11	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/01/2014															
12:00-12:15	1	3	4	06:00-06:15	15	1	16	12:00-12:15	15	21	36	06:00-06:15	23	39	62
12:15-12:30	1	2	3	06:15-06:30	22	7	29	12:15-12:30	26	10	36	06:15-06:30	28	42	70
12:30-12:45	1	3	4	06:30-06:45	20	6	26	12:30-12:45	16	22	38	06:30-06:45	17	34	51
12:45-01:00	1	2	3	06:45-07:00	28	11	39	12:45-01:00	20	32	52	06:45-07:00	15	30	45
01:00-01:15	0	2	2	07:00-07:15	35	10	45	01:00-01:15	13	18	31	07:00-07:15	18	28	46
01:15-01:30	0	1	1	07:15-07:30	39	10	49	01:15-01:30	28	17	45	07:15-07:30	12	32	44
01:30-01:45	1	2	3	07:30-07:45	67	19	86	01:30-01:45	23	30	53	07:30-07:45	5	23	28
01:45-02:00	1	0	1	07:45-08:00	48	34	82	01:45-02:00	41	28	69	07:45-08:00	8	22	30
02:00-02:15	0	1	1	08:00-08:15	26	28	54	02:00-02:15	23	21	44	08:00-08:15	7	24	31
02:15-02:30	0	0	0	08:15-08:30	32	14	46	02:15-02:30	23	41	64	08:15-08:30	14	19	33
02:30-02:45	0	0	0	08:30-08:45	35	20	55	02:30-02:45	21	28	49	08:30-08:45	5	11	16
02:45-03:00	1	0	1	08:45-09:00	37	19	56	02:45-03:00	22	25	47	08:45-09:00	3	21	24
03:00-03:15	0	0	0	09:00-09:15	38	16	54	03:00-03:15	24	40	64	09:00-09:15	11	16	27
03:15-03:30	0	0	0	09:15-09:30	31	28	59	03:15-03:30	25	28	53	09:15-09:30	6	16	22
03:30-03:45	1	2	3	09:30-09:45	30	23	53	03:30-03:45	23	30	53	09:30-09:45	9	9	18
03:45-04:00	0	0	0	09:45-10:00	36	14	50	03:45-04:00	19	35	54	09:45-10:00	2	16	18
04:00-04:15	2	0	2	10:00-10:15	26	18	44	04:00-04:15	25	23	48	10:00-10:15	5	18	23
04:15-04:30	6	0	6	10:15-10:30	24	19	43	04:15-04:30	24	39	63	10:15-10:30	2	10	12
04:30-04:45	2	0	2	10:30-10:45	23	13	36	04:30-04:45	38	45	83	10:30-10:45	2	7	9
04:45-05:00	9	1	10	10:45-11:00	27	12	39	04:45-05:00	32	45	77	10:45-11:00	1	8	9
05:00-05:15	10	0	10	11:00-11:15	29	21	50	05:00-05:15	24	53	77	11:00-11:15	0	5	5
05:15-05:30	17	1	18	11:15-11:30	24	10	34	05:15-05:30	23	45	68	11:15-11:30	1	8	9
05:30-05:45	20	2	22	11:30-11:45	26	30	56	05:30-05:45	21	46	67	11:30-11:45	1	6	7
05:45-06:00	10	3	13	11:45-12:00	33	15	48	05:45-06:00	18	33	51	11:45-12:00	0	1	1

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:30 PM to 05:30 PM		
AM - PEAK HR VOLUME	180	91	271	PM - PEAK HR VOLUME	117	188	305
AM - K FACTOR (%)			8.42	PM - K FACTOR (%)			9.47
AM - D (%)	66.42	33.58	100.00	PM - D (%)	38.36	61.64	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:45 AM to 08:45 AM		PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:45 PM to 05:45 PM	
AM - PEAK HR VOLUME	189	96		PM - PEAK HR VOLUME	119	189	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:30 PM to 05:30 PM		
AM - PEAK HR VOLUME	180	91	271	PM - PEAK HR VOLUME	117	188	305
AM - K FACTOR (%)			8.42	PM - K FACTOR (%)			9.47
AM - D (%)	66.42	33.58	100.00	PM - D (%)	38.36	61.64	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	751	398	1,149
PEAK HR TIME	01:30 PM to 02:30 PM			AM 12-HR PERIOD (00:00-12:00)	835	423	1,258
PEAK HR VOLUME	110	120	230	PM 6-HR PERIOD (12:00-18:00)	567	755	1,322
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	762	1,200	1,962
PEAK HR TIME	09:00 AM to 10:00 AM	01:30 PM to 02:30 PM		24 HOUR PERIOD	1,597	1,623	3,220
PEAK HR VOLUME	135	120		D (%)	49.60	50.40	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 03/31/2014															
12:00-12:15	0	4	4	06:00-06:15	10	4	14	12:00-12:15	20	12	32	06:00-06:15	23	38	61
12:15-12:30	2	3	5	06:15-06:30	34	9	43	12:15-12:30	22	27	49	06:15-06:30	24	32	56
12:30-12:45	1	0	1	06:30-06:45	14	8	22	12:30-12:45	24	24	48	06:30-06:45	15	28	43
12:45-01:00	1	1	2	06:45-07:00	34	13	47	12:45-01:00	17	15	32	06:45-07:00	14	36	50
01:00-01:15	0	3	3	07:00-07:15	38	6	44	01:00-01:15	26	21	47	07:00-07:15	12	39	51
01:15-01:30	3	1	4	07:15-07:30	49	10	59	01:15-01:30	22	13	35	07:15-07:30	15	35	50
01:30-01:45	0	3	3	07:30-07:45	64	6	70	01:30-01:45	26	17	43	07:30-07:45	12	19	31
01:45-02:00	0	1	1	07:45-08:00	45	27	72	01:45-02:00	23	26	49	07:45-08:00	7	19	26
02:00-02:15	2	1	3	08:00-08:15	29	25	54	02:00-02:15	20	19	39	08:00-08:15	8	30	38
02:15-02:30	0	0	0	08:15-08:30	48	18	66	02:15-02:30	19	44	63	08:15-08:30	4	20	24
02:30-02:45	0	1	1	08:30-08:45	30	16	46	02:30-02:45	16	37	53	08:30-08:45	5	14	19
02:45-03:00	1	0	1	08:45-09:00	36	15	51	02:45-03:00	18	33	51	08:45-09:00	6	14	20
03:00-03:15	1	0	1	09:00-09:15	30	31	61	03:00-03:15	22	38	60	09:00-09:15	5	8	13
03:15-03:30	1	0	1	09:15-09:30	33	15	48	03:15-03:30	27	33	60	09:15-09:30	5	14	19
03:30-03:45	1	0	1	09:30-09:45	22	14	36	03:30-03:45	20	27	47	09:30-09:45	8	18	26
03:45-04:00	0	1	1	09:45-10:00	30	15	45	03:45-04:00	19	40	59	09:45-10:00	9	11	20
04:00-04:15	1	0	1	10:00-10:15	22	18	40	04:00-04:15	18	41	59	10:00-10:15	4	11	15
04:15-04:30	6	0	6	10:15-10:30	33	18	51	04:15-04:30	27	39	66	10:15-10:30	0	12	12
04:30-04:45	4	0	4	10:30-10:45	25	19	44	04:30-04:45	28	39	67	10:30-10:45	0	5	5
04:45-05:00	9	0	9	10:45-11:00	24	17	41	04:45-05:00	27	27	54	10:45-11:00	3	6	9
05:00-05:15	8	0	8	11:00-11:15	14	21	35	05:00-05:15	25	44	69	11:00-11:15	2	6	8
05:15-05:30	15	2	17	11:15-11:30	22	16	38	05:15-05:30	26	42	68	11:15-11:30	1	7	8
05:30-05:45	15	1	16	11:30-11:45	21	15	36	05:30-05:45	24	40	64	11:30-11:45	0	2	2
05:45-06:00	19	2	21	11:45-12:00	22	17	39	05:45-06:00	25	33	58	11:45-12:00	0	4	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	05:00 PM to 06:00 PM		
AM - PEAK HR VOLUME	186	76	262	PM - PEAK HR VOLUME	100	159	259
AM - K FACTOR (%)			8.46	PM - K FACTOR (%)			8.36
AM - D (%)	70.99	29.01	100.00	PM - D (%)	38.61	61.39	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:45 AM to 08:45 AM		PM - PEAK HR TIME	04:15 PM to 05:15 PM	03:45 PM to 04:45 PM	
AM - PEAK HR VOLUME	196	86		PM - PEAK HR VOLUME	107	159	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	05:00 PM to 06:00 PM		
AM - PEAK HR VOLUME	186	76	262	PM - PEAK HR VOLUME	100	159	259
AM - K FACTOR (%)			8.46	PM - K FACTOR (%)			8.36
AM - D (%)	70.99	29.01	100.00	PM - D (%)	38.61	61.39	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	729	373	1,102
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	819	397	1,216
PEAK HR VOLUME	73	133	206	PM 6-HR PERIOD (12:00-18:00)	541	731	1,272
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	723	1,159	1,882
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM		24 HOUR PERIOD	1,542	1,556	3,098
PEAK HR VOLUME	115	133		D (%)	49.77	50.23	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/03/2014															
12:00-12:15	1	0	1	06:00-06:15	15	1	16	12:00-12:15	14	20	34	06:00-06:15	21	28	49
12:15-12:30	0	3	3	06:15-06:30	25	2	27	12:15-12:30	18	18	36	06:15-06:30	22	33	55
12:30-12:45	1	2	3	06:30-06:45	23	10	33	12:30-12:45	29	14	43	06:30-06:45	20	25	45
12:45-01:00	1	0	1	06:45-07:00	23	5	28	12:45-01:00	19	21	40	06:45-07:00	16	42	58
01:00-01:15	0	2	2	07:00-07:15	34	12	46	01:00-01:15	41	26	67	07:00-07:15	17	37	54
01:15-01:30	0	0	0	07:15-07:30	39	8	47	01:15-01:30	16	25	41	07:15-07:30	14	30	44
01:30-01:45	1	1	2	07:30-07:45	64	19	83	01:30-01:45	30	26	56	07:30-07:45	13	36	49
01:45-02:00	1	0	1	07:45-08:00	46	29	75	01:45-02:00	28	24	52	07:45-08:00	13	20	33
02:00-02:15	0	0	0	08:00-08:15	27	33	60	02:00-02:15	31	16	47	08:00-08:15	5	19	24
02:15-02:30	0	0	0	08:15-08:30	34	29	63	02:15-02:30	27	42	69	08:15-08:30	5	25	30
02:30-02:45	0	1	1	08:30-08:45	31	22	53	02:30-02:45	18	28	46	08:30-08:45	9	23	32
02:45-03:00	1	1	2	08:45-09:00	43	24	67	02:45-03:00	23	34	57	08:45-09:00	7	18	25
03:00-03:15	0	1	1	09:00-09:15	40	30	70	03:00-03:15	23	45	68	09:00-09:15	4	24	28
03:15-03:30	0	1	1	09:15-09:30	31	22	53	03:15-03:30	33	37	70	09:15-09:30	3	24	27
03:30-03:45	0	0	0	09:30-09:45	28	17	45	03:30-03:45	39	37	76	09:30-09:45	2	22	24
03:45-04:00	2	0	2	09:45-10:00	23	11	34	03:45-04:00	23	41	64	09:45-10:00	4	17	21
04:00-04:15	5	1	6	10:00-10:15	30	18	48	04:00-04:15	31	32	63	10:00-10:15	4	17	21
04:15-04:30	6	0	6	10:15-10:30	21	22	43	04:15-04:30	21	36	57	10:15-10:30	4	16	20
04:30-04:45	6	1	7	10:30-10:45	24	15	39	04:30-04:45	39	33	72	10:30-10:45	4	9	13
04:45-05:00	6	0	6	10:45-11:00	34	17	51	04:45-05:00	28	43	71	10:45-11:00	4	6	10
05:00-05:15	14	0	14	11:00-11:15	19	18	37	05:00-05:15	22	38	60	11:00-11:15	5	5	10
05:15-05:30	11	1	12	11:15-11:30	29	14	43	05:15-05:30	26	40	66	11:15-11:30	2	7	9
05:30-05:45	14	4	18	11:30-11:45	24	22	46	05:30-05:45	21	38	59	11:30-11:45	1	7	8
05:45-06:00	18	2	20	11:45-12:00	28	27	55	05:45-06:00	32	46	78	11:45-12:00	0	0	0

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	03:00 PM to 04:00 PM		
AM - PEAK HR VOLUME	171	110	281	PM - PEAK HR VOLUME	118	160	278
AM - K FACTOR (%)			8.38	PM - K FACTOR (%)			8.29
AM - D (%)	60.85	39.15	100.00	PM - D (%)	42.45	57.55	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:45 AM to 08:45 AM		PM - PEAK HR TIME	03:15 PM to 04:15 PM	05:00 PM to 06:00 PM	
AM - PEAK HR VOLUME	183	113		PM - PEAK HR VOLUME	126	162	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	03:00 PM to 04:00 PM		
AM - PEAK HR VOLUME	171	110	281	PM - PEAK HR VOLUME	118	160	278
AM - K FACTOR (%)			8.38	PM - K FACTOR (%)			8.29
AM - D (%)	60.85	39.15	100.00	PM - D (%)	42.45	57.55	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	735	427	1,162
PEAK HR TIME	01:30 PM to 02:30 PM			AM 12-HR PERIOD (00:00-12:00)	823	448	1,271
PEAK HR VOLUME	116	108	224	PM 6-HR PERIOD (12:00-18:00)	632	760	1,392
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	831	1,250	2,081
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM		24 HOUR PERIOD	1,654	1,698	3,352
PEAK HR VOLUME	122	120		D (%)	49.34	50.66	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/02/2014															
12:00-12:15	2	3	5	06:00-06:15	18	5	23	12:00-12:15	27	22	49	06:00-06:15	18	40	58
12:15-12:30	0	3	3	06:15-06:30	27	7	34	12:15-12:30	27	23	50	06:15-06:30	22	28	50
12:30-12:45	0	1	1	06:30-06:45	21	9	30	12:30-12:45	24	25	49	06:30-06:45	15	31	46
12:45-01:00	1	1	2	06:45-07:00	23	9	32	12:45-01:00	32	29	61	06:45-07:00	17	31	48
01:00-01:15	0	0	0	07:00-07:15	40	14	54	01:00-01:15	21	32	53	07:00-07:15	15	44	59
01:15-01:30	0	1	1	07:15-07:30	55	13	68	01:15-01:30	18	34	52	07:15-07:30	9	33	42
01:30-01:45	0	1	1	07:30-07:45	83	16	99	01:30-01:45	19	27	46	07:30-07:45	14	31	45
01:45-02:00	0	1	1	07:45-08:00	36	40	76	01:45-02:00	23	34	57	07:45-08:00	6	31	37
02:00-02:15	1	0	1	08:00-08:15	25	26	51	02:00-02:15	26	26	52	08:00-08:15	7	25	32
02:15-02:30	0	1	1	08:15-08:30	34	19	53	02:15-02:30	33	26	59	08:15-08:30	9	20	29
02:30-02:45	0	0	0	08:30-08:45	22	19	41	02:30-02:45	23	28	51	08:30-08:45	2	20	22
02:45-03:00	1	2	3	08:45-09:00	43	28	71	02:45-03:00	27	36	63	08:45-09:00	5	16	21
03:00-03:15	1	0	1	09:00-09:15	37	22	59	03:00-03:15	40	21	61	09:00-09:15	11	8	19
03:15-03:30	1	0	1	09:15-09:30	27	17	44	03:15-03:30	23	27	50	09:15-09:30	6	13	19
03:30-03:45	1	0	1	09:30-09:45	31	24	55	03:30-03:45	20	35	55	09:30-09:45	2	20	22
03:45-04:00	0	0	0	09:45-10:00	26	27	53	03:45-04:00	19	40	59	09:45-10:00	4	15	19
04:00-04:15	1	0	1	10:00-10:15	30	17	47	04:00-04:15	32	32	64	10:00-10:15	5	22	27
04:15-04:30	2	1	3	10:15-10:30	24	22	46	04:15-04:30	30	37	67	10:15-10:30	6	15	21
04:30-04:45	8	0	8	10:30-10:45	25	13	38	04:30-04:45	31	35	66	10:30-10:45	3	9	12
04:45-05:00	9	1	10	10:45-11:00	29	22	51	04:45-05:00	27	45	72	10:45-11:00	3	7	10
05:00-05:15	14	1	15	11:00-11:15	30	16	46	05:00-05:15	26	28	54	11:00-11:15	2	10	12
05:15-05:30	13	2	15	11:15-11:30	24	19	43	05:15-05:30	31	44	75	11:15-11:30	3	9	12
05:30-05:45	13	2	15	11:30-11:45	20	25	45	05:30-05:45	25	35	60	11:30-11:45	0	5	5
05:45-06:00	14	3	17	11:45-12:00	42	16	58	05:45-06:00	26	32	58	11:45-12:00	0	6	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	214	83	297	PM - PEAK HR VOLUME	120	149	269
AM - K FACTOR (%)			8.79	PM - K FACTOR (%)			7.96
AM - D (%)	72.05	27.95	100.00	PM - D (%)	44.61	55.39	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:45 AM to 08:45 AM		PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:30 PM to 05:30 PM	
AM - PEAK HR VOLUME	214	104		PM - PEAK HR VOLUME	120	152	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	214	83	297	PM - PEAK HR VOLUME	120	149	269
AM - K FACTOR (%)			8.79	PM - K FACTOR (%)			7.96
AM - D (%)	72.05	27.95	100.00	PM - D (%)	44.61	55.39	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	772	445	1,217
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	854	469	1,323
PEAK HR VOLUME	109	116	225	PM 6-HR PERIOD (12:00-18:00)	630	753	1,383
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	814	1,242	2,056
PEAK HR TIME	09:00 AM to 10:00 AM	01:00 PM to 02:00 PM		24 HOUR PERIOD	1,668	1,711	3,379
PEAK HR VOLUME	121	127		D (%)	49.36	50.64	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/05/2014															
12:00-12:15	4	8	12	06:00-06:15	16	1	17	12:00-12:15	26	29	55	06:00-06:15	18	19	37
12:15-12:30	1	6	7	06:15-06:30	13	5	18	12:15-12:30	23	28	51	06:15-06:30	22	40	62
12:30-12:45	0	6	6	06:30-06:45	11	5	16	12:30-12:45	23	29	52	06:30-06:45	28	25	53
12:45-01:00	2	3	5	06:45-07:00	20	12	32	12:45-01:00	29	23	52	06:45-07:00	14	44	58
01:00-01:15	0	5	5	07:00-07:15	29	9	38	01:00-01:15	18	23	41	07:00-07:15	18	24	42
01:15-01:30	1	0	1	07:15-07:30	23	12	35	01:15-01:30	29	30	59	07:15-07:30	14	37	51
01:30-01:45	0	3	3	07:30-07:45	18	9	27	01:30-01:45	31	21	52	07:30-07:45	20	33	53
01:45-02:00	0	1	1	07:45-08:00	27	18	45	01:45-02:00	20	23	43	07:45-08:00	13	25	38
02:00-02:15	0	5	5	08:00-08:15	17	17	34	02:00-02:15	18	36	54	08:00-08:15	11	22	33
02:15-02:30	4	3	7	08:15-08:30	40	11	51	02:15-02:30	28	29	57	08:15-08:30	10	14	24
02:30-02:45	1	2	3	08:30-08:45	30	19	49	02:30-02:45	26	28	54	08:30-08:45	10	26	36
02:45-03:00	0	2	2	08:45-09:00	37	18	55	02:45-03:00	31	27	58	08:45-09:00	13	22	35
03:00-03:15	0	1	1	09:00-09:15	38	25	63	03:00-03:15	19	24	43	09:00-09:15	8	11	19
03:15-03:30	1	0	1	09:15-09:30	36	21	57	03:15-03:30	26	24	50	09:15-09:30	13	25	38
03:30-03:45	0	1	1	09:30-09:45	45	31	76	03:30-03:45	25	23	48	09:30-09:45	15	17	32
03:45-04:00	1	0	1	09:45-10:00	31	21	52	03:45-04:00	21	31	52	09:45-10:00	4	9	13
04:00-04:15	2	1	3	10:00-10:15	31	32	63	04:00-04:15	19	22	41	10:00-10:15	7	11	18
04:15-04:30	2	0	2	10:15-10:30	40	33	73	04:15-04:30	11	29	40	10:15-10:30	6	15	21
04:30-04:45	0	1	1	10:30-10:45	35	17	52	04:30-04:45	25	28	53	10:30-10:45	3	5	8
04:45-05:00	2	1	3	10:45-11:00	26	27	53	04:45-05:00	18	32	50	10:45-11:00	8	7	15
05:00-05:15	2	0	2	11:00-11:15	35	36	71	05:00-05:15	21	37	58	11:00-11:15	3	15	18
05:15-05:30	3	1	4	11:15-11:30	33	21	54	05:15-05:30	16	29	45	11:15-11:30	1	13	14
05:30-05:45	7	1	8	11:30-11:45	25	29	54	05:30-05:45	25	38	63	11:30-11:45	5	11	16
05:45-06:00	11	2	13	11:45-12:00	26	22	48	05:45-06:00	31	20	51	11:45-12:00	2	6	8

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	124	65	189
AM - K FACTOR (%)			5.92
AM - D (%)	65.61	34.39	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:45 AM to 08:45 AM	
AM - PEAK HR VOLUME	124	65	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	93	124	217
PM - K FACTOR (%)			6.79
PM - D (%)	42.86	57.14	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	99	136	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:30 AM to 10:30 AM		
AM - PEAK HR VOLUME	147	117	264
AM - K FACTOR (%)			8.27
AM - D (%)	55.68	44.32	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	02:00 PM to 03:00 PM		
PM - PEAK HR VOLUME	103	120	223
PM - K FACTOR (%)			6.98
PM - D (%)	46.19	53.81	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:30 AM to 10:30 AM		
PEAK HR VOLUME	147	117	264
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	150	120	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	682	451	1,133
AM 12-HR PERIOD (00:00-12:00)	726	504	1,230
PM 6-HR PERIOD (12:00-18:00)	559	663	1,222
PM 12-HR PERIOD (12:00-24:00)	825	1,139	1,964
24 HOUR PERIOD	1,551	1,643	3,194
D (%)	48.56	51.44	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/04/2014															
12:00-12:15	1	0	1	06:00-06:15	21	2	23	12:00-12:15	25	21	46	06:00-06:15	23	38	61
12:15-12:30	0	14	14	06:15-06:30	23	4	27	12:15-12:30	37	28	65	06:15-06:30	29	40	69
12:30-12:45	2	3	5	06:30-06:45	19	7	26	12:30-12:45	22	23	45	06:30-06:45	28	36	64
12:45-01:00	0	1	1	06:45-07:00	35	16	51	12:45-01:00	30	29	59	06:45-07:00	26	56	82
01:00-01:15	0	1	1	07:00-07:15	37	10	47	01:00-01:15	30	19	49	07:00-07:15	21	37	58
01:15-01:30	0	0	0	07:15-07:30	47	13	60	01:15-01:30	26	31	57	07:15-07:30	13	49	62
01:30-01:45	0	0	0	07:30-07:45	68	19	87	01:30-01:45	26	30	56	07:30-07:45	12	45	57
01:45-02:00	0	1	1	07:45-08:00	44	40	84	01:45-02:00	37	28	65	07:45-08:00	20	31	51
02:00-02:15	1	1	2	08:00-08:15	30	24	54	02:00-02:15	26	39	65	08:00-08:15	14	33	47
02:15-02:30	1	5	6	08:15-08:30	33	15	48	02:15-02:30	29	41	70	08:15-08:30	10	20	30
02:30-02:45	0	0	0	08:30-08:45	30	13	43	02:30-02:45	31	34	65	08:30-08:45	14	30	44
02:45-03:00	0	0	0	08:45-09:00	41	37	78	02:45-03:00	24	43	67	08:45-09:00	9	17	26
03:00-03:15	1	0	1	09:00-09:15	52	31	83	03:00-03:15	20	27	47	09:00-09:15	6	22	28
03:15-03:30	0	0	0	09:15-09:30	33	27	60	03:15-03:30	32	39	71	09:15-09:30	13	22	35
03:30-03:45	0	0	0	09:30-09:45	24	25	49	03:30-03:45	25	34	59	09:30-09:45	9	22	31
03:45-04:00	1	0	1	09:45-10:00	40	23	63	03:45-04:00	34	26	60	09:45-10:00	12	15	27
04:00-04:15	2	0	2	10:00-10:15	38	26	64	04:00-04:15	29	31	60	10:00-10:15	1	15	16
04:15-04:30	4	0	4	10:15-10:30	24	14	38	04:15-04:30	28	42	70	10:15-10:30	5	16	21
04:30-04:45	7	0	7	10:30-10:45	31	17	48	04:30-04:45	43	30	73	10:30-10:45	6	13	19
04:45-05:00	12	0	12	10:45-11:00	30	22	52	04:45-05:00	30	36	66	10:45-11:00	3	8	11
05:00-05:15	12	1	13	11:00-11:15	24	17	41	05:00-05:15	17	35	52	11:00-11:15	3	7	10
05:15-05:30	16	1	17	11:15-11:30	32	16	48	05:15-05:30	24	32	56	11:15-11:30	1	9	10
05:30-05:45	12	3	15	11:30-11:45	21	22	43	05:30-05:45	27	36	63	11:30-11:45	2	10	12
05:45-06:00	10	5	15	11:45-12:00	27	25	52	05:45-06:00	28	45	73	11:45-12:00	1	17	18

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	189	96	285
AM - K FACTOR (%)			7.63
AM - D (%)	66.32	33.68	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:30 AM to 08:30 AM	
AM - PEAK HR VOLUME	196	98	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM		
PM - PEAK HR VOLUME	106	170	276
PM - K FACTOR (%)			7.39
PM - D (%)	38.41	61.59	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM	06:00 PM to 07:00 PM	
PM - PEAK HR VOLUME	134	170	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	189	96	285
AM - K FACTOR (%)			7.63
AM - D (%)	66.32	33.68	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM		
PM - PEAK HR VOLUME	106	170	276
PM - K FACTOR (%)			7.39
PM - D (%)	38.41	61.59	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	110	157	267
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	149	157	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	804	465	1,269
AM 12-HR PERIOD (00:00-12:00)	886	501	1,387
PM 6-HR PERIOD (12:00-18:00)	680	779	1,459
PM 12-HR PERIOD (12:00-24:00)	961	1,387	2,348
24 HOUR PERIOD	1,847	1,888	3,735
D (%)	49.45	50.55	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/07/2014															
12:00-12:15	1	3	4	06:00-06:15	15	5	20	12:00-12:15	32	31	63	06:00-06:15	23	29	52
12:15-12:30	1	0	1	06:15-06:30	14	4	18	12:15-12:30	25	33	58	06:15-06:30	33	27	60
12:30-12:45	0	0	0	06:30-06:45	27	3	30	12:30-12:45	15	29	44	06:30-06:45	11	29	40
12:45-01:00	1	1	2	06:45-07:00	34	22	56	12:45-01:00	24	13	37	06:45-07:00	23	30	53
01:00-01:15	0	1	1	07:00-07:15	44	5	49	01:00-01:15	22	31	53	07:00-07:15	11	37	48
01:15-01:30	0	0	0	07:15-07:30	37	6	43	01:15-01:30	15	23	38	07:15-07:30	16	40	56
01:30-01:45	0	2	2	07:30-07:45	64	12	76	01:30-01:45	29	28	57	07:30-07:45	8	28	36
01:45-02:00	0	0	0	07:45-08:00	33	25	58	01:45-02:00	25	27	52	07:45-08:00	14	24	38
02:00-02:15	0	0	0	08:00-08:15	40	31	71	02:00-02:15	23	28	51	08:00-08:15	14	16	30
02:15-02:30	1	0	1	08:15-08:30	35	13	48	02:15-02:30	29	48	77	08:15-08:30	5	21	26
02:30-02:45	0	0	0	08:30-08:45	44	15	59	02:30-02:45	15	32	47	08:30-08:45	13	22	35
02:45-03:00	0	0	0	08:45-09:00	44	27	71	02:45-03:00	19	29	48	08:45-09:00	13	22	35
03:00-03:15	0	1	1	09:00-09:15	38	22	60	03:00-03:15	24	37	61	09:00-09:15	7	19	26
03:15-03:30	0	0	0	09:15-09:30	33	26	59	03:15-03:30	33	25	58	09:15-09:30	6	21	27
03:30-03:45	3	0	3	09:30-09:45	37	18	55	03:30-03:45	22	30	52	09:30-09:45	4	12	16
03:45-04:00	1	0	1	09:45-10:00	33	23	56	03:45-04:00	34	33	67	09:45-10:00	2	16	18
04:00-04:15	2	1	3	10:00-10:15	27	11	38	04:00-04:15	23	45	68	10:00-10:15	4	13	17
04:15-04:30	3	0	3	10:15-10:30	35	16	51	04:15-04:30	26	37	63	10:15-10:30	2	9	11
04:30-04:45	4	0	4	10:30-10:45	21	30	51	04:30-04:45	22	37	59	10:30-10:45	4	11	15
04:45-05:00	9	2	11	10:45-11:00	31	14	45	04:45-05:00	25	31	56	10:45-11:00	2	9	11
05:00-05:15	9	0	9	11:00-11:15	23	15	38	05:00-05:15	33	41	74	11:00-11:15	3	8	11
05:15-05:30	16	2	18	11:15-11:30	19	24	43	05:15-05:30	17	29	46	11:15-11:30	1	6	7
05:30-05:45	14	2	16	11:30-11:45	24	28	52	05:30-05:45	26	39	65	11:30-11:45	1	3	4
05:45-06:00	13	3	16	11:45-12:00	24	21	45	05:45-06:00	15	41	56	11:45-12:00	2	7	9

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	172	81	253
AM - K FACTOR (%)			7.62
AM - D (%)	67.98	32.02	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	06:45 AM to 07:45 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	179	86	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	105	152	257
PM - K FACTOR (%)			7.74
PM - D (%)	40.86	59.14	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	113	152	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	172	81	253
AM - K FACTOR (%)			7.62
AM - D (%)	67.98	32.02	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	105	152	257
PM - K FACTOR (%)			7.74
PM - D (%)	40.86	59.14	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM		
PEAK HR VOLUME	106	131	237
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	141	137	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	776	416	1,192
AM 12-HR PERIOD (00:00-12:00)	854	434	1,288
PM 6-HR PERIOD (12:00-18:00)	573	777	1,350
PM 12-HR PERIOD (12:00-24:00)	795	1,236	2,031
24 HOUR PERIOD	1,649	1,670	3,319
D (%)	49.68	50.32	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/06/2014															
12:00-12:15	1	8	9	06:00-06:15	9	1	10	12:00-12:15	24	39	63	06:00-06:15	22	36	58
12:15-12:30	1	2	3	06:15-06:30	13	5	18	12:15-12:30	23	14	37	06:15-06:30	15	24	39
12:30-12:45	1	2	3	06:30-06:45	9	2	11	12:30-12:45	18	28	46	06:30-06:45	16	30	46
12:45-01:00	3	2	5	06:45-07:00	10	2	12	12:45-01:00	22	26	48	06:45-07:00	21	35	56
01:00-01:15	1	3	4	07:00-07:15	15	9	24	01:00-01:15	30	27	57	07:00-07:15	15	28	43
01:15-01:30	0	3	3	07:15-07:30	20	8	28	01:15-01:30	29	37	66	07:15-07:30	22	40	62
01:30-01:45	0	6	6	07:30-07:45	17	10	27	01:30-01:45	21	30	51	07:30-07:45	9	27	36
01:45-02:00	0	1	1	07:45-08:00	23	9	32	01:45-02:00	17	28	45	07:45-08:00	13	15	28
02:00-02:15	2	2	4	08:00-08:15	22	14	36	02:00-02:15	30	24	54	08:00-08:15	8	25	33
02:15-02:30	0	1	1	08:15-08:30	32	6	38	02:15-02:30	25	22	47	08:15-08:30	15	21	36
02:30-02:45	1	0	1	08:30-08:45	38	14	52	02:30-02:45	26	19	45	08:30-08:45	14	11	25
02:45-03:00	0	2	2	08:45-09:00	28	15	43	02:45-03:00	32	29	61	08:45-09:00	9	16	25
03:00-03:15	0	0	0	09:00-09:15	33	21	54	03:00-03:15	22	23	45	09:00-09:15	5	14	19
03:15-03:30	1	1	2	09:15-09:30	33	19	52	03:15-03:30	28	24	52	09:15-09:30	11	12	23
03:30-03:45	1	2	3	09:30-09:45	46	13	59	03:30-03:45	25	21	46	09:30-09:45	5	11	16
03:45-04:00	0	0	0	09:45-10:00	47	19	66	03:45-04:00	32	31	63	09:45-10:00	7	8	15
04:00-04:15	1	0	1	10:00-10:15	36	30	66	04:00-04:15	22	28	50	10:00-10:15	1	12	13
04:15-04:30	0	1	1	10:15-10:30	38	24	62	04:15-04:30	29	31	60	10:15-10:30	3	7	10
04:30-04:45	1	0	1	10:30-10:45	18	25	43	04:30-04:45	21	27	48	10:30-10:45	6	13	19
04:45-05:00	2	0	2	10:45-11:00	27	28	55	04:45-05:00	20	16	36	10:45-11:00	3	5	8
05:00-05:15	1	1	2	11:00-11:15	19	20	39	05:00-05:15	17	19	36	11:00-11:15	3	10	13
05:15-05:30	1	0	1	11:15-11:30	18	31	49	05:15-05:30	23	34	57	11:15-11:30	5	6	11
05:30-05:45	8	1	9	11:30-11:45	22	32	54	05:30-05:45	25	29	54	11:30-11:45	1	0	1
05:45-06:00	11	3	14	11:45-12:00	30	31	61	05:45-06:00	14	36	50	11:45-12:00	1	4	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	120	49	169
AM - K FACTOR (%)			5.78
AM - D (%)	71.01	28.99	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	120	49	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	104	117	221
PM - K FACTOR (%)			7.55
PM - D (%)	47.06	52.94	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM	05:15 PM to 06:15 PM	
PM - PEAK HR VOLUME	108	135	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:30 AM to 10:30 AM		
AM - PEAK HR VOLUME	167	86	253
AM - K FACTOR (%)			8.65
AM - D (%)	66.01	33.99	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	12:45 PM to 01:45 PM		
PM - PEAK HR VOLUME	102	120	222
PM - K FACTOR (%)			7.59
PM - D (%)	45.95	54.05	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:30 AM to 10:30 AM		
PEAK HR VOLUME	167	86	253
DIRECTIONAL PEAK			
PEAK HR TIME	09:30 AM to 10:30 AM	11:15 AM to 12:15 PM	
PEAK HR VOLUME	167	133	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	603	388	991
AM 12-HR PERIOD (00:00-12:00)	640	429	1,069
PM 6-HR PERIOD (12:00-18:00)	575	642	1,217
PM 12-HR PERIOD (12:00-24:00)	805	1,052	1,857
24 HOUR PERIOD	1,445	1,481	2,926
D (%)	49.38	50.62	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/09/2014															
12:00-12:15	0	3	3	06:00-06:15	17	5	22	12:00-12:15	31	21	52	06:00-06:15	25	33	58
12:15-12:30	4	3	7	06:15-06:30	17	11	28	12:15-12:30	26	17	43	06:15-06:30	15	36	51
12:30-12:45	1	3	4	06:30-06:45	37	11	48	12:30-12:45	28	16	44	06:30-06:45	15	31	46
12:45-01:00	0	2	2	06:45-07:00	29	12	41	12:45-01:00	18	34	52	06:45-07:00	11	27	38
01:00-01:15	1	4	5	07:00-07:15	38	10	48	01:00-01:15	29	34	63	07:00-07:15	18	36	54
01:15-01:30	0	2	2	07:15-07:30	42	8	50	01:15-01:30	20	20	40	07:15-07:30	11	34	45
01:30-01:45	0	0	0	07:30-07:45	67	14	81	01:30-01:45	21	24	45	07:30-07:45	14	33	47
01:45-02:00	0	1	1	07:45-08:00	31	34	65	01:45-02:00	21	29	50	07:45-08:00	11	18	29
02:00-02:15	0	1	1	08:00-08:15	37	29	66	02:00-02:15	20	31	51	08:00-08:15	10	18	28
02:15-02:30	0	0	0	08:15-08:30	33	26	59	02:15-02:30	24	31	55	08:15-08:30	10	22	32
02:30-02:45	0	2	2	08:30-08:45	28	19	47	02:30-02:45	21	36	57	08:30-08:45	4	17	21
02:45-03:00	0	0	0	08:45-09:00	35	24	59	02:45-03:00	27	32	59	08:45-09:00	6	21	27
03:00-03:15	2	0	2	09:00-09:15	39	13	52	03:00-03:15	27	31	58	09:00-09:15	4	12	16
03:15-03:30	0	0	0	09:15-09:30	33	17	50	03:15-03:30	30	33	63	09:15-09:30	4	10	14
03:30-03:45	0	0	0	09:30-09:45	31	22	53	03:30-03:45	21	35	56	09:30-09:45	4	24	28
03:45-04:00	1	0	1	09:45-10:00	30	27	57	03:45-04:00	19	36	55	09:45-10:00	5	18	23
04:00-04:15	1	0	1	10:00-10:15	33	15	48	04:00-04:15	23	39	62	10:00-10:15	6	14	20
04:15-04:30	5	0	5	10:15-10:30	24	18	42	04:15-04:30	27	38	65	10:15-10:30	4	17	21
04:30-04:45	8	1	9	10:30-10:45	22	17	39	04:30-04:45	26	33	59	10:30-10:45	3	7	10
04:45-05:00	15	0	15	10:45-11:00	28	21	49	04:45-05:00	18	29	47	10:45-11:00	2	6	8
05:00-05:15	7	0	7	11:00-11:15	20	21	41	05:00-05:15	23	30	53	11:00-11:15	2	9	11
05:15-05:30	14	0	14	11:15-11:30	22	16	38	05:15-05:30	23	32	55	11:15-11:30	1	10	11
05:30-05:45	12	2	14	11:30-11:45	26	13	39	05:30-05:45	29	37	66	11:30-11:45	1	8	9
05:45-06:00	14	3	17	11:45-12:00	30	26	56	05:45-06:00	24	45	69	11:45-12:00	2	2	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	168	103	271
AM - K FACTOR (%)			8.31
AM - D (%)	61.99	38.01	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:45 AM to 08:45 AM	
AM - PEAK HR VOLUME	178	108	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	101	147	248
PM - K FACTOR (%)			7.61
PM - D (%)	40.73	59.27	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM	05:30 PM to 06:30 PM	
PM - PEAK HR VOLUME	101	151	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	168	103	271
AM - K FACTOR (%)			8.31
AM - D (%)	61.99	38.01	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	101	147	248
PM - K FACTOR (%)			7.61
PM - D (%)	40.73	59.27	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	92	130	222
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	133	130	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	749	429	1,178
AM 12-HR PERIOD (00:00-12:00)	834	456	1,290
PM 6-HR PERIOD (12:00-18:00)	576	743	1,319
PM 12-HR PERIOD (12:00-24:00)	764	1,206	1,970
24 HOUR PERIOD	1,598	1,662	3,260
D (%)	49.02	50.98	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/08/2014															
12:00-12:15	0	2	2	06:00-06:15	18	4	22	12:00-12:15	24	19	43	06:00-06:15	22	47	69
12:15-12:30	1	4	5	06:15-06:30	18	5	23	12:15-12:30	19	22	41	06:15-06:30	23	35	58
12:30-12:45	0	3	3	06:30-06:45	20	10	30	12:30-12:45	15	26	41	06:30-06:45	16	27	43
12:45-01:00	1	1	2	06:45-07:00	30	13	43	12:45-01:00	22	18	40	06:45-07:00	10	33	43
01:00-01:15	0	0	0	07:00-07:15	44	13	57	01:00-01:15	23	20	43	07:00-07:15	5	31	36
01:15-01:30	0	1	1	07:15-07:30	40	17	57	01:15-01:30	21	22	43	07:15-07:30	5	24	29
01:30-01:45	0	0	0	07:30-07:45	62	17	79	01:30-01:45	16	31	47	07:30-07:45	10	28	38
01:45-02:00	0	1	1	07:45-08:00	44	27	71	01:45-02:00	43	16	59	07:45-08:00	10	25	35
02:00-02:15	0	0	0	08:00-08:15	27	22	49	02:00-02:15	23	15	38	08:00-08:15	9	22	31
02:15-02:30	1	0	1	08:15-08:30	31	24	55	02:15-02:30	27	36	63	08:15-08:30	8	14	22
02:30-02:45	0	0	0	08:30-08:45	33	21	54	02:30-02:45	20	30	50	08:30-08:45	6	15	21
02:45-03:00	0	0	0	08:45-09:00	37	19	56	02:45-03:00	24	43	67	08:45-09:00	3	16	19
03:00-03:15	1	0	1	09:00-09:15	44	8	52	03:00-03:15	33	31	64	09:00-09:15	2	21	23
03:15-03:30	0	0	0	09:15-09:30	31	23	54	03:15-03:30	33	26	59	09:15-09:30	7	22	29
03:30-03:45	2	0	2	09:30-09:45	31	25	56	03:30-03:45	39	32	71	09:30-09:45	3	13	16
03:45-04:00	1	0	1	09:45-10:00	31	25	56	03:45-04:00	32	36	68	09:45-10:00	4	22	26
04:00-04:15	2	0	2	10:00-10:15	29	14	43	04:00-04:15	20	42	62	10:00-10:15	4	9	13
04:15-04:30	4	0	4	10:15-10:30	24	15	39	04:15-04:30	21	32	53	10:15-10:30	4	6	10
04:30-04:45	7	2	9	10:30-10:45	26	23	49	04:30-04:45	29	41	70	10:30-10:45	1	6	7
04:45-05:00	8	0	8	10:45-11:00	23	16	39	04:45-05:00	24	51	75	10:45-11:00	2	11	13
05:00-05:15	16	0	16	11:00-11:15	29	20	49	05:00-05:15	19	43	62	11:00-11:15	3	5	8
05:15-05:30	8	1	9	11:15-11:30	28	16	44	05:15-05:30	24	34	58	11:15-11:30	0	5	5
05:30-05:45	15	3	18	11:30-11:45	19	9	28	05:30-05:45	18	43	61	11:30-11:45	1	5	6
05:45-06:00	15	3	18	11:45-12:00	23	12	35	05:45-06:00	20	33	53	11:45-12:00	0	4	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM		
AM - PEAK HR VOLUME	190	74	264
AM - K FACTOR (%)			8.31
AM - D (%)	71.97	28.03	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM	07:45 AM to 08:45 AM	
AM - PEAK HR VOLUME	190	94	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	96	169	265
PM - K FACTOR (%)			8.34
PM - D (%)	36.23	63.77	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	137	171	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM		
AM - PEAK HR VOLUME	190	74	264
AM - K FACTOR (%)			8.31
AM - D (%)	71.97	28.03	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	96	169	265
PM - K FACTOR (%)			8.34
PM - D (%)	36.23	63.77	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM		
PEAK HR VOLUME	137	81	218
DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM	02:00 PM to 03:00 PM	
PEAK HR VOLUME	137	124	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	742	398	1,140
AM 12-HR PERIOD (00:00-12:00)	824	419	1,243
PM 6-HR PERIOD (12:00-18:00)	589	742	1,331
PM 12-HR PERIOD (12:00-24:00)	747	1,188	1,935
24 HOUR PERIOD	1,571	1,607	3,178
D (%)	49.43	50.57	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2014

Site ID:	B72928000000	**Route No:**	9280	**Date From:**	2014/03/27 0:00
Town:	Oahu	**Direction:**	+MP	**Date To:**	2014/04/09 23:45
Location:	Pupukea Rd - Kamehameha Hwy to Alapio Rd				

Functional Classification: 18 TEST NEW URBAN: MINOR COLLECTOR

REPORT TOTALS - 336 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	616	1.34%	1231
PC	33363	72.62%	66726
2A-4T	11588	25.22%	23176
LIGHT VEHICLE TOTALS	45567	99.19%	91133
HEAVY VEHICLES			
Bus	107	0.23%	267
SINGLE UNIT TRUCK			
2A-6T	101	0.22%	202
3A-SU	121	0.26%	363
4A-SU	3	0.01%	12
SINGLE-TRAILER TRUCKS			
4A-ST	25	0.05%	100
5A-ST	11	0.02%	55
6A-ST	3	0.01%	18
MULTI-TRAILER TRUCKS			
5A-MT	1	0.00%	5
6A-MT	0	0.00%	0
7A-MT	0	0.00%	0
HEAVY VEHICLE TOTALS	372	0.81%	1022
CLASSIFIED VEHICLES TOTALS	45939 (A)	100.00%	92156 (B)
UNCLASSIFIED VEHICLES TOTALS	0	0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.997

ROADTUBE EQUIVALENT(B/2) = 46078 (C)

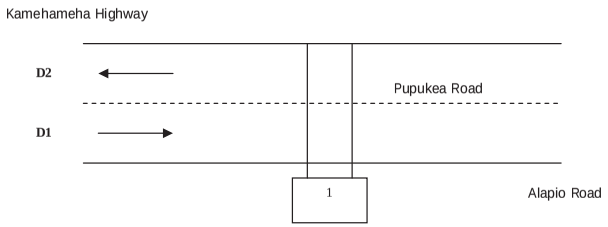
PEAK HOUR VOLUME : 297 2014/04/02 07:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	6	(65A-1) 2.02%	23	3300	(65A-2) 0.70%	9.00%
COMBINATION (TYPE 8-13)	0	(65B-1) 0.00%	2		(65B-2) 0.06%	9.00%

Traffic Data Service
Traffic Station Sketch

N

Island: Oahu
Area: Waimea

Section ID/Station #: B72928000000



Meter #	File Name	GPS
1. t161	D0714003_B72928000000	21.64597, -158.0592
2.	D0714004_B72928000000	

Station Description:
Pupukea Road: Kamehameha Highway to Alapio Road

Survey Beginning Date/Time: 7/14/14@ 0000		Survey Ending Date/Time: 7/27/14@ 2400

Survey Method:	Road Tube	Data Type:	Class
Survey Crew:	LM		C1B
Sketch Updated:		By:	SR
Remarks:	748		

FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	ROUTE MILE
Pupukea Road		18		9280	

D1= Direction to End — D1: Alapio Road / Kanalani Place
D2= Direction to Begin — D2: Kamehameha Highway / Kamehameha Highway

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/15/2014															
12:00-12:15	11	0	11	06:00-06:15	4	10	14	12:00-12:15	25	31	56	06:00-06:15	43	25	68
12:15-12:30	9	1	10	06:15-06:30	3	12	15	12:15-12:30	37	26	63	06:15-06:30	38	19	57
12:30-12:45	6	0	6	06:30-06:45	5	9	14	12:30-12:45	39	29	68	06:30-06:45	33	15	48
12:45-01:00	1	1	2	06:45-07:00	6	26	32	12:45-01:00	34	21	55	06:45-07:00	36	10	46
01:00-01:15	4	0	4	07:00-07:15	7	26	33	01:00-01:15	23	35	58	07:00-07:15	28	20	48
01:15-01:30	4	1	5	07:15-07:30	6	26	32	01:15-01:30	29	24	53	07:15-07:30	25	19	44
01:30-01:45	5	0	5	07:30-07:45	11	29	40	01:30-01:45	28	24	52	07:30-07:45	16	14	30
01:45-02:00	1	2	3	07:45-08:00	20	28	48	01:45-02:00	31	41	72	07:45-08:00	15	10	25
02:00-02:15	2	1	3	08:00-08:15	11	24	35	02:00-02:15	24	52	76	08:00-08:15	17	10	27
02:15-02:30	3	0	3	08:15-08:30	14	42	56	02:15-02:30	30	59	89	08:15-08:30	10	15	25
02:30-02:45	3	4	7	08:30-08:45	20	40	60	02:30-02:45	33	43	76	08:30-08:45	27	14	41
02:45-03:00	2	4	6	08:45-09:00	12	37	49	02:45-03:00	25	27	52	08:45-09:00	18	14	32
03:00-03:15	1	0	1	09:00-09:15	13	31	44	03:00-03:15	34	27	61	09:00-09:15	15	12	27
03:15-03:30	2	2	4	09:15-09:30	21	26	47	03:15-03:30	48	27	75	09:15-09:30	13	15	28
03:30-03:45	0	2	2	09:30-09:45	18	29	47	03:30-03:45	37	19	56	09:30-09:45	15	9	24
03:45-04:00	1	1	2	09:45-10:00	22	26	48	03:45-04:00	35	25	60	09:45-10:00	9	5	14
04:00-04:15	2	2	4	10:00-10:15	23	30	53	04:00-04:15	31	22	53	10:00-10:15	19	6	25
04:15-04:30	0	1	1	10:15-10:30	30	29	59	04:15-04:30	25	23	48	10:15-10:30	7	12	19
04:30-04:45	0	2	2	10:30-10:45	36	44	80	04:30-04:45	33	23	56	10:30-10:45	18	16	34
04:45-05:00	1	6	7	10:45-11:00	30	30	60	04:45-05:00	22	21	43	10:45-11:00	14	7	21
05:00-05:15	0	4	4	11:00-11:15	17	24	41	05:00-05:15	26	26	52	11:00-11:15	11	2	13
05:15-05:30	0	0	0	11:15-11:30	29	31	60	05:15-05:30	29	23	52	11:15-11:30	9	5	14
05:30-05:45	0	3	3	11:30-11:45	23	29	52	05:30-05:45	33	29	62	11:30-11:45	6	3	9
05:45-06:00	1	10	11	11:45-12:00	20	34	54	05:45-06:00	36	27	63	11:45-12:00	6	4	10

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	57	143	200
AM - K FACTOR (%)			5.95
AM - D (%)	28.50	71.50	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	65	143	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM		
PM - PEAK HR VOLUME	154	98	252
PM - K FACTOR (%)			7.50
PM - D (%)	61.11	38.89	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM	05:00 PM to 06:00 PM	
PM - PEAK HR VOLUME	154	105	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	10:00 AM to 11:00 AM		
AM - PEAK HR VOLUME	119	133	252
AM - K FACTOR (%)			7.50
AM - D (%)	47.22	52.78	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	01:45 PM to 02:45 PM		
PM - PEAK HR VOLUME	118	195	313
PM - K FACTOR (%)			9.32
PM - D (%)	37.70	62.30	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	118	195	313
DIRECTIONAL PEAK			
PEAK HR TIME	12:00 PM to 01:00 PM	01:45 PM to 02:45 PM	
PEAK HR VOLUME	135	195	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	401	672	1,073
AM 12-HR PERIOD (00:00-12:00)	460	719	1,179
PM 6-HR PERIOD (12:00-18:00)	747	704	1,451
PM 12-HR PERIOD (12:00-24:00)	1,195	985	2,180
24 HOUR PERIOD	1,655	1,704	3,359
D (%)	49.27	50.73	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/14/2014															
12:00-12:15	1	0	1	06:00-06:15	2	11	13	12:00-12:15	20	27	47	06:00-06:15	51	24	75
12:15-12:30	3	1	4	06:15-06:30	7	20	27	12:15-12:30	21	11	32	06:15-06:30	42	24	66
12:30-12:45	2	1	3	06:30-06:45	7	28	35	12:30-12:45	20	29	49	06:30-06:45	41	16	57
12:45-01:00	3	1	4	06:45-07:00	10	23	33	12:45-01:00	30	12	42	06:45-07:00	33	25	58
01:00-01:15	1	1	2	07:00-07:15	11	37	48	01:00-01:15	24	24	48	07:00-07:15	38	15	53
01:15-01:30	2	0	2	07:15-07:30	13	54	67	01:15-01:30	28	26	54	07:15-07:30	28	18	46
01:30-01:45	0	1	1	07:30-07:45	19	81	100	01:30-01:45	15	26	41	07:30-07:45	24	14	38
01:45-02:00	1	0	1	07:45-08:00	29	50	79	01:45-02:00	22	40	62	07:45-08:00	31	9	40
02:00-02:15	0	0	0	08:00-08:15	33	36	69	02:00-02:15	20	29	49	08:00-08:15	21	7	28
02:15-02:30	0	1	1	08:15-08:30	26	29	55	02:15-02:30	50	27	77	08:15-08:30	24	6	30
02:30-02:45	1	0	1	08:30-08:45	21	34	55	02:30-02:45	24	20	44	08:30-08:45	18	9	27
02:45-03:00	0	3	3	08:45-09:00	17	43	60	02:45-03:00	26	30	56	08:45-09:00	12	11	23
03:00-03:15	0	0	0	09:00-09:15	30	29	59	03:00-03:15	30	22	52	09:00-09:15	21	12	33
03:15-03:30	0	0	0	09:15-09:30	16	29	45	03:15-03:30	34	29	63	09:15-09:30	23	3	26
03:30-03:45	3	1	4	09:30-09:45	15	33	48	03:30-03:45	47	31	78	09:30-09:45	14	9	23
03:45-04:00	1	3	4	09:45-10:00	19	24	43	03:45-04:00	37	19	56	09:45-10:00	18	6	24
04:00-04:15	0	2	2	10:00-10:15	15	25	40	04:00-04:15	56	27	83	10:00-10:15	20	11	31
04:15-04:30	2	7	9	10:15-10:30	21	26	47	04:15-04:30	46	24	70	10:15-10:30	22	9	31
04:30-04:45	1	7	8	10:30-10:45	20	28	48	04:30-04:45	52	30	82	10:30-10:45	20	9	29
04:45-05:00	0	7	7	10:45-11:00	18	16	34	04:45-05:00	47	22	69	10:45-11:00	15	2	17
05:00-05:15	0	11	11	11:00-11:15	17	29	46	05:00-05:15	44	29	73	11:00-11:15	8	1	9
05:15-05:30	1	12	13	11:15-11:30	23	24	47	05:15-05:30	50	16	66	11:15-11:30	5	3	8
05:30-05:45	1	16	17	11:30-11:45	22	25	47	05:30-05:45	52	22	74	11:30-11:45	9	4	13
05:45-06:00	1	23	24	11:45-12:00	28	29	57	05:45-06:00	44	24	68	11:45-12:00	6	4	10

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	94	221	315
AM - K FACTOR (%)			8.86
AM - D (%)	29.84	70.16	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	109	222	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	201	103	304
PM - K FACTOR (%)			8.55
PM - D (%)	66.12	33.88	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	03:15 PM to 04:15 PM	
PM - PEAK HR VOLUME	201	106	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	94	221	315
AM - K FACTOR (%)			8.86
AM - D (%)	29.84	70.16	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	201	103	304
PM - K FACTOR (%)			8.55
PM - D (%)	66.12	33.88	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	116	116	232
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	01:30 PM to 02:30 PM	
PEAK HR VOLUME	120	122	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	439	763	1,202
AM 12-HR PERIOD (00:00-12:00)	463	861	1,324
PM 6-HR PERIOD (12:00-18:00)	839	596	1,435
PM 12-HR PERIOD (12:00-24:00)	1,383	847	2,230
24 HOUR PERIOD	1,846	1,708	3,554
D (%)	51.94	48.06	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/17/2014															
12:00-12:15	4	2	6	06:00-06:15	4	13	17	12:00-12:15	34	18	52	06:00-06:15	25	18	43
12:15-12:30	2	0	2	06:15-06:30	4	15	19	12:15-12:30	20	27	47	06:15-06:30	55	16	71
12:30-12:45	1	0	1	06:30-06:45	15	25	40	12:30-12:45	23	28	51	06:30-06:45	37	21	58
12:45-01:00	0	0	0	06:45-07:00	14	30	44	12:45-01:00	21	16	37	06:45-07:00	36	17	53
01:00-01:15	0	0	0	07:00-07:15	12	30	42	01:00-01:15	24	26	50	07:00-07:15	26	7	33
01:15-01:30	2	0	2	07:15-07:30	13	51	64	01:15-01:30	24	25	49	07:15-07:30	30	10	40
01:30-01:45	2	0	2	07:30-07:45	14	76	90	01:30-01:45	20	26	46	07:30-07:45	17	11	28
01:45-02:00	0	0	0	07:45-08:00	27	40	67	01:45-02:00	17	20	37	07:45-08:00	22	6	28
02:00-02:15	0	0	0	08:00-08:15	34	28	62	02:00-02:15	32	24	56	08:00-08:15	27	9	36
02:15-02:30	0	0	0	08:15-08:30	13	56	69	02:15-02:30	43	25	68	08:15-08:30	19	11	30
02:30-02:45	2	0	2	08:30-08:45	19	34	53	02:30-02:45	34	33	67	08:30-08:45	22	9	31
02:45-03:00	0	2	2	08:45-09:00	26	42	68	02:45-03:00	25	29	54	08:45-09:00	18	5	23
03:00-03:15	0	1	1	09:00-09:15	21	35	56	03:00-03:15	26	20	46	09:00-09:15	18	7	25
03:15-03:30	0	1	1	09:15-09:30	19	31	50	03:15-03:30	30	26	56	09:15-09:30	16	9	25
03:30-03:45	0	2	2	09:30-09:45	11	38	49	03:30-03:45	33	37	70	09:30-09:45	11	4	15
03:45-04:00	1	1	2	09:45-10:00	15	29	44	03:45-04:00	30	21	51	09:45-10:00	14	7	21
04:00-04:15	0	2	2	10:00-10:15	26	18	44	04:00-04:15	40	25	65	10:00-10:15	15	7	22
04:15-04:30	1	8	9	10:15-10:30	21	32	53	04:15-04:30	34	27	61	10:15-10:30	9	7	16
04:30-04:45	0	6	6	10:30-10:45	17	21	38	04:30-04:45	46	21	67	10:30-10:45	7	8	15
04:45-05:00	0	8	8	10:45-11:00	20	28	48	04:45-05:00	51	27	78	10:45-11:00	9	1	10
05:00-05:15	0	12	12	11:00-11:15	17	18	35	05:00-05:15	31	23	54	11:00-11:15	5	1	6
05:15-05:30	0	13	13	11:15-11:30	26	26	52	05:15-05:30	34	23	57	11:15-11:30	4	0	4
05:30-05:45	3	12	15	11:30-11:45	15	23	38	05:30-05:45	37	26	63	11:30-11:45	3	0	3
05:45-06:00	0	16	16	11:45-12:00	15	26	41	05:45-06:00	51	21	72	11:45-12:00	3	1	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	88	200	288
AM - K FACTOR (%)			8.78
AM - D (%)	30.56	69.44	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:30 AM to 08:30 AM	
AM - PEAK HR VOLUME	93	200	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	171	100	271
PM - K FACTOR (%)			8.26
PM - D (%)	63.10	36.90	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	171	110	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	88	200	288
AM - K FACTOR (%)			8.78
AM - D (%)	30.56	69.44	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	171	100	271
PM - K FACTOR (%)			8.26
PM - D (%)	63.10	36.90	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	134	111	245
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	134	133	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	418	765	1,183
AM 12-HR PERIOD (00:00-12:00)	436	851	1,287
PM 6-HR PERIOD (12:00-18:00)	760	594	1,354
PM 12-HR PERIOD (12:00-24:00)	1,208	786	1,994
24 HOUR PERIOD	1,644	1,637	3,281
D (%)	50.11	49.89	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/16/2014															
12:00-12:15	5	5	10	06:00-06:15	0	6	6	12:00-12:15	32	22	54	06:00-06:15	37	24	61
12:15-12:30	11	1	12	06:15-06:30	2	10	12	12:15-12:30	25	28	53	06:15-06:30	38	15	53
12:30-12:45	2	0	2	06:30-06:45	3	14	17	12:30-12:45	30	23	53	06:30-06:45	32	15	47
12:45-01:00	3	0	3	06:45-07:00	3	19	22	12:45-01:00	31	17	48	06:45-07:00	25	12	37
01:00-01:15	2	1	3	07:00-07:15	6	11	17	01:00-01:15	24	17	41	07:00-07:15	28	10	38
01:15-01:30	1	0	1	07:15-07:30	10	13	23	01:15-01:30	25	24	49	07:15-07:30	21	9	30
01:30-01:45	0	0	0	07:30-07:45	18	20	38	01:30-01:45	26	19	45	07:30-07:45	22	10	32
01:45-02:00	0	0	0	07:45-08:00	7	34	41	01:45-02:00	24	20	44	07:45-08:00	21	12	33
02:00-02:15	1	0	1	08:00-08:15	9	26	35	02:00-02:15	30	22	52	08:00-08:15	22	13	35
02:15-02:30	2	1	3	08:15-08:30	8	34	42	02:15-02:30	19	22	41	08:15-08:30	9	16	25
02:30-02:45	1	0	1	08:30-08:45	22	24	46	02:30-02:45	23	28	51	08:30-08:45	17	8	25
02:45-03:00	3	1	4	08:45-09:00	11	28	39	02:45-03:00	13	23	36	08:45-09:00	16	11	27
03:00-03:15	1	0	1	09:00-09:15	16	31	47	03:00-03:15	18	21	39	09:00-09:15	10	7	17
03:15-03:30	3	0	3	09:15-09:30	17	28	45	03:15-03:30	12	21	33	09:15-09:30	8	4	12
03:30-03:45	0	2	2	09:30-09:45	19	42	61	03:30-03:45	27	27	54	09:30-09:45	12	2	14
03:45-04:00	1	1	2	09:45-10:00	22	37	59	03:45-04:00	23	16	39	09:45-10:00	19	5	24
04:00-04:15	3	1	4	10:00-10:15	27	28	55	04:00-04:15	26	18	44	10:00-10:15	8	8	16
04:15-04:30	2	0	2	10:15-10:30	25	26	51	04:15-04:30	28	30	58	10:15-10:30	5	2	7
04:30-04:45	0	0	0	10:30-10:45	13	27	40	04:30-04:45	19	14	33	10:30-10:45	8	3	11
04:45-05:00	0	1	1	10:45-11:00	29	29	58	04:45-05:00	27	19	46	10:45-11:00	6	5	11
05:00-05:15	0	2	2	11:00-11:15	23	26	49	05:00-05:15	21	21	42	11:00-11:15	4	0	4
05:15-05:30	0	4	4	11:15-11:30	24	27	51	05:15-05:30	22	23	45	11:15-11:30	3	0	3
05:30-05:45	1	5	6	11:30-11:45	28	24	52	05:30-05:45	48	31	79	11:30-11:45	2	0	2
05:45-06:00	0	4	4	11:45-12:00	21	29	50	05:45-06:00	36	19	55	11:45-12:00	6	1	7

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM		
AM - PEAK HR VOLUME	46	118	164
AM - K FACTOR (%)			6.00
AM - D (%)	28.05	71.95	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:45 AM to 08:45 AM	
AM - PEAK HR VOLUME	50	118	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	159	89	248
PM - K FACTOR (%)			9.08
PM - D (%)	64.11	35.89	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	05:15 PM to 06:15 PM	
PM - PEAK HR VOLUME	159	97	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:30 AM to 10:30 AM		
AM - PEAK HR VOLUME	93	133	226
AM - K FACTOR (%)			8.27
AM - D (%)	41.15	58.85	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	159	89	248
PM - K FACTOR (%)			9.08
PM - D (%)	64.11	35.89	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:30 AM to 10:30 AM		
PEAK HR VOLUME	93	133	226
DIRECTIONAL PEAK			
PEAK HR TIME	12:00 PM to 01:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	118	138	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	363	593	956
AM 12-HR PERIOD (00:00-12:00)	405	622	1,027
PM 6-HR PERIOD (12:00-18:00)	609	525	1,134
PM 12-HR PERIOD (12:00-24:00)	988	717	1,705
24 HOUR PERIOD	1,393	1,339	2,732
D (%)	50.99	49.01	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/19/2014															
12:00-12:15	5	2	7	06:00-06:15	7	18	25	12:00-12:15	31	32	63	06:00-06:15	45	14	59
12:15-12:30	2	1	3	06:15-06:30	5	17	22	12:15-12:30	16	25	41	06:15-06:30	45	17	62
12:30-12:45	2	0	2	06:30-06:45	12	21	33	12:30-12:45	26	38	64	06:30-06:45	41	25	66
12:45-01:00	2	0	2	06:45-07:00	13	33	46	12:45-01:00	31	23	54	06:45-07:00	29	15	44
01:00-01:15	3	1	4	07:00-07:15	10	29	39	01:00-01:15	38	39	77	07:00-07:15	33	11	44
01:15-01:30	1	1	2	07:15-07:30	9	55	64	01:15-01:30	34	24	58	07:15-07:30	25	10	35
01:30-01:45	1	0	1	07:30-07:45	10	80	90	01:30-01:45	27	20	47	07:30-07:45	25	8	33
01:45-02:00	2	0	2	07:45-08:00	33	47	80	01:45-02:00	27	24	51	07:45-08:00	16	11	27
02:00-02:15	3	0	3	08:00-08:15	14	36	50	02:00-02:15	25	21	46	08:00-08:15	18	5	23
02:15-02:30	0	0	0	08:15-08:30	25	39	64	02:15-02:30	26	22	48	08:15-08:30	16	7	23
02:30-02:45	0	0	0	08:30-08:45	16	33	49	02:30-02:45	32	21	53	08:30-08:45	20	13	33
02:45-03:00	0	3	3	08:45-09:00	23	28	51	02:45-03:00	37	22	59	08:45-09:00	21	8	29
03:00-03:15	0	0	0	09:00-09:15	18	32	50	03:00-03:15	36	19	55	09:00-09:15	17	10	27
03:15-03:30	0	1	1	09:15-09:30	24	39	63	03:15-03:30	26	19	45	09:15-09:30	16	5	21
03:30-03:45	1	0	1	09:30-09:45	17	27	44	03:30-03:45	35	29	64	09:30-09:45	16	2	18
03:45-04:00	0	0	0	09:45-10:00	11	27	38	03:45-04:00	35	23	58	09:45-10:00	10	1	11
04:00-04:15	0	2	2	10:00-10:15	19	26	45	04:00-04:15	42	33	75	10:00-10:15	12	4	16
04:15-04:30	0	4	4	10:15-10:30	20	36	56	04:15-04:30	29	24	53	10:15-10:30	7	2	9
04:30-04:45	0	4	4	10:30-10:45	21	22	43	04:30-04:45	30	28	58	10:30-10:45	11	4	15
04:45-05:00	0	10	10	10:45-11:00	19	23	42	04:45-05:00	39	22	61	10:45-11:00	15	2	17
05:00-05:15	1	14	15	11:00-11:15	17	29	46	05:00-05:15	42	30	72	11:00-11:15	6	1	7
05:15-05:30	1	5	6	11:15-11:30	23	22	45	05:15-05:30	43	29	72	11:15-11:30	4	2	6
05:30-05:45	2	14	16	11:30-11:45	18	33	51	05:30-05:45	41	28	69	11:30-11:45	8	2	10
05:45-06:00	2	17	19	11:45-12:00	26	36	62	05:45-06:00	46	25	71	11:45-12:00	0	0	0

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	66	218	284
AM - K FACTOR (%)			8.47
AM - D (%)	23.24	76.76	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	88	218	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	172	112	284
PM - K FACTOR (%)			8.47
PM - D (%)	60.56	39.44	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	05:00 PM to 06:00 PM	
PM - PEAK HR VOLUME	177	112	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	66	218	284
AM - K FACTOR (%)			8.47
AM - D (%)	23.24	76.76	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	172	112	284
PM - K FACTOR (%)			8.47
PM - D (%)	60.56	39.44	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM		
PEAK HR VOLUME	129	124	253
DIRECTIONAL PEAK			
PEAK HR TIME	12:45 PM to 01:45 PM	11:45 AM to 12:45 PM	
PEAK HR VOLUME	130	131	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	410	788	1,198
AM 12-HR PERIOD (00:00-12:00)	438	867	1,305
PM 6-HR PERIOD (12:00-18:00)	794	620	1,414
PM 12-HR PERIOD (12:00-24:00)	1,250	799	2,049
24 HOUR PERIOD	1,688	1,666	3,354
D (%)	50.33	49.67	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/18/2014															
12:00-12:15	4	1	5	06:00-06:15	4	20	24	12:00-12:15	31	21	52	06:00-06:15	41	29	70
12:15-12:30	5	0	5	06:15-06:30	10	18	28	12:15-12:30	31	21	52	06:15-06:30	39	22	61
12:30-12:45	2	1	3	06:30-06:45	12	24	36	12:30-12:45	21	19	40	06:30-06:45	41	19	60
12:45-01:00	0	1	1	06:45-07:00	17	29	46	12:45-01:00	35	12	47	06:45-07:00	42	21	63
01:00-01:15	0	0	0	07:00-07:15	11	41	52	01:00-01:15	25	19	44	07:00-07:15	22	13	35
01:15-01:30	3	0	3	07:15-07:30	10	42	52	01:15-01:30	16	35	51	07:15-07:30	29	12	41
01:30-01:45	0	0	0	07:30-07:45	13	78	91	01:30-01:45	17	24	41	07:30-07:45	16	10	26
01:45-02:00	2	0	2	07:45-08:00	31	35	66	01:45-02:00	20	33	53	07:45-08:00	28	6	34
02:00-02:15	0	0	0	08:00-08:15	18	36	54	02:00-02:15	22	28	50	08:00-08:15	19	12	31
02:15-02:30	1	0	1	08:15-08:30	24	30	54	02:15-02:30	44	31	75	08:15-08:30	23	9	32
02:30-02:45	0	1	1	08:30-08:45	20	36	56	02:30-02:45	31	29	60	08:30-08:45	14	12	26
02:45-03:00	0	1	1	08:45-09:00	22	36	58	02:45-03:00	28	23	51	08:45-09:00	25	4	29
03:00-03:15	0	0	0	09:00-09:15	16	35	51	03:00-03:15	34	16	50	09:00-09:15	15	2	17
03:15-03:30	0	0	0	09:15-09:30	19	34	53	03:15-03:30	36	38	74	09:15-09:30	23	0	23
03:30-03:45	0	1	1	09:30-09:45	13	34	47	03:30-03:45	36	37	73	09:30-09:45	7	7	14
03:45-04:00	0	1	1	09:45-10:00	18	26	44	03:45-04:00	42	19	61	09:45-10:00	18	7	25
04:00-04:15	0	3	3	10:00-10:15	20	27	47	04:00-04:15	34	25	59	10:00-10:15	14	3	17
04:15-04:30	0	5	5	10:15-10:30	14	35	49	04:15-04:30	45	36	81	10:15-10:30	13	4	17
04:30-04:45	0	6	6	10:30-10:45	12	18	30	04:30-04:45	32	28	60	10:30-10:45	15	2	17
04:45-05:00	1	7	8	10:45-11:00	16	28	44	04:45-05:00	49	26	75	10:45-11:00	10	3	13
05:00-05:15	1	13	14	11:00-11:15	20	26	46	05:00-05:15	38	23	61	11:00-11:15	5	2	7
05:15-05:30	0	12	12	11:15-11:30	13	29	42	05:15-05:30	51	25	76	11:15-11:30	10	1	11
05:30-05:45	2	17	19	11:30-11:45	24	18	42	05:30-05:45	37	24	61	11:30-11:45	3	2	5
05:45-06:00	1	14	15	11:45-12:00	27	21	48	05:45-06:00	42	19	61	11:45-12:00	5	1	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	86	179	265
AM - K FACTOR (%)			7.90
AM - D (%)	32.45	67.55	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	93	196	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	164	113	277
PM - K FACTOR (%)			8.26
PM - D (%)	59.21	40.79	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM	03:15 PM to 04:15 PM	
PM - PEAK HR VOLUME	175	119	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	86	179	265
AM - K FACTOR (%)			7.90
AM - D (%)	32.45	67.55	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	164	113	277
PM - K FACTOR (%)			8.26
PM - D (%)	59.21	40.79	100.00

NON-COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	117	121	238
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	125	129	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	404	756	1,160
AM 12-HR PERIOD (00:00-12:00)	426	840	1,266
PM 6-HR PERIOD (12:00-18:00)	797	611	1,408
PM 12-HR PERIOD (12:00-24:00)	1,274	814	2,088
24 HOUR PERIOD	1,700	1,654	3,354
D (%)	50.69	49.31	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/21/2014															
12:00-12:15	3	1	4	06:00-06:15	3	17	20	12:00-12:15	24	28	52	06:00-06:15	56	15	71
12:15-12:30	2	0	2	06:15-06:30	4	17	21	12:15-12:30	33	22	55	06:15-06:30	53	23	76
12:30-12:45	3	1	4	06:30-06:45	6	23	29	12:30-12:45	26	11	37	06:30-06:45	38	26	64
12:45-01:00	2	0	2	06:45-07:00	15	22	37	12:45-01:00	27	20	47	06:45-07:00	39	19	58
01:00-01:15	0	1	1	07:00-07:15	12	41	53	01:00-01:15	32	25	57	07:00-07:15	33	21	54
01:15-01:30	1	1	2	07:15-07:30	12	51	63	01:15-01:30	30	21	51	07:15-07:30	28	8	36
01:30-01:45	1	1	2	07:30-07:45	11	74	85	01:30-01:45	27	33	60	07:30-07:45	15	18	33
01:45-02:00	0	0	0	07:45-08:00	33	32	65	01:45-02:00	23	35	58	07:45-08:00	25	12	37
02:00-02:15	1	0	1	08:00-08:15	29	43	72	02:00-02:15	31	28	59	08:00-08:15	21	9	30
02:15-02:30	1	0	1	08:15-08:30	24	36	60	02:15-02:30	28	27	55	08:15-08:30	16	8	24
02:30-02:45	4	1	5	08:30-08:45	28	32	60	02:30-02:45	32	25	57	08:30-08:45	31	16	47
02:45-03:00	0	0	0	08:45-09:00	17	47	64	02:45-03:00	35	20	55	08:45-09:00	21	13	34
03:00-03:15	1	2	3	09:00-09:15	28	48	76	03:00-03:15	27	26	53	09:00-09:15	19	6	25
03:15-03:30	0	0	0	09:15-09:30	11	40	51	03:15-03:30	40	29	69	09:15-09:30	13	10	23
03:30-03:45	0	2	2	09:30-09:45	14	34	48	03:30-03:45	44	22	66	09:30-09:45	28	13	41
03:45-04:00	0	0	0	09:45-10:00	18	27	45	03:45-04:00	28	21	49	09:45-10:00	15	10	25
04:00-04:15	0	4	4	10:00-10:15	21	33	54	04:00-04:15	32	34	66	10:00-10:15	14	10	24
04:15-04:30	2	5	7	10:15-10:30	28	20	48	04:15-04:30	25	48	73	10:15-10:30	11	2	13
04:30-04:45	2	10	12	10:30-10:45	29	23	52	04:30-04:45	37	34	71	10:30-10:45	11	5	16
04:45-05:00	0	5	5	10:45-11:00	30	30	60	04:45-05:00	51	16	67	10:45-11:00	18	8	26
05:00-05:15	1	13	14	11:00-11:15	21	29	50	05:00-05:15	38	23	61	11:00-11:15	10	7	17
05:15-05:30	1	18	19	11:15-11:30	26	15	41	05:15-05:30	39	28	67	11:15-11:30	21	2	23
05:30-05:45	1	8	9	11:30-11:45	26	21	47	05:30-05:45	34	36	70	11:30-11:45	8	2	10
05:45-06:00	1	17	18	11:45-12:00	25	36	61	05:45-06:00	38	22	60	11:45-12:00	11	3	14

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	85	200	285	PM - PEAK HR VOLUME	145	132	277
AM - K FACTOR (%)			7.88	PM - K FACTOR (%)			7.66
AM - D (%)	29.82	70.18	100.00	PM - D (%)	52.35	47.65	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM		PM - PEAK HR TIME	06:00 PM to 07:00 PM	03:45 PM to 04:45 PM	
AM - PEAK HR VOLUME	114	200		PM - PEAK HR VOLUME	186	137	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	85	200	285	PM - PEAK HR VOLUME	145	132	277
AM - K FACTOR (%)			7.88	PM - K FACTOR (%)			7.66
AM - D (%)	29.82	70.18	100.00	PM - D (%)	52.35	47.65	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	471	791	1,262
PEAK HR TIME	01:30 PM to 02:30 PM			AM 12-HR PERIOD (00:00-12:00)	498	881	1,379
PEAK HR VOLUME	109	123	232	PM 6-HR PERIOD (12:00-18:00)	781	634	1,415
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,336	900	2,236
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,834	1,781	3,615
PEAK HR VOLUME	126	149		D (%)	50.73	49.27	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/20/2014															
12:00-12:15	5	1	6	06:00-06:15	1	20	21	12:00-12:15	24	24	48	06:00-06:15	34	26	60
12:15-12:30	4	0	4	06:15-06:30	2	16	18	12:15-12:30	23	26	49	06:15-06:30	42	13	55
12:30-12:45	2	0	2	06:30-06:45	11	20	31	12:30-12:45	24	29	53	06:30-06:45	39	24	63
12:45-01:00	0	0	0	06:45-07:00	8	31	39	12:45-01:00	26	17	43	06:45-07:00	39	21	60
01:00-01:15	3	1	4	07:00-07:15	12	42	54	01:00-01:15	29	26	55	07:00-07:15	50	14	64
01:15-01:30	0	0	0	07:15-07:30	11	47	58	01:15-01:30	23	13	36	07:15-07:30	30	9	39
01:30-01:45	1	0	1	07:30-07:45	13	68	81	01:30-01:45	21	30	51	07:30-07:45	24	7	31
01:45-02:00	1	2	3	07:45-08:00	35	41	76	01:45-02:00	24	32	56	07:45-08:00	27	10	37
02:00-02:15	0	0	0	08:00-08:15	25	35	60	02:00-02:15	24	27	51	08:00-08:15	17	6	23
02:15-02:30	2	0	2	08:15-08:30	16	25	41	02:15-02:30	53	18	71	08:15-08:30	20	8	28
02:30-02:45	0	0	0	08:30-08:45	31	32	63	02:30-02:45	40	22	62	08:30-08:45	16	6	22
02:45-03:00	0	1	1	08:45-09:00	21	47	68	02:45-03:00	16	22	38	08:45-09:00	28	10	38
03:00-03:15	1	0	1	09:00-09:15	24	30	54	03:00-03:15	31	29	60	09:00-09:15	17	7	24
03:15-03:30	0	1	1	09:15-09:30	19	45	64	03:15-03:30	29	29	58	09:15-09:30	19	8	27
03:30-03:45	0	1	1	09:30-09:45	18	25	43	03:30-03:45	36	31	67	09:30-09:45	19	3	22
03:45-04:00	1	1	2	09:45-10:00	17	30	47	03:45-04:00	32	26	58	09:45-10:00	14	3	17
04:00-04:15	0	3	3	10:00-10:15	13	21	34	04:00-04:15	40	32	72	10:00-10:15	10	4	14
04:15-04:30	0	6	6	10:15-10:30	19	29	48	04:15-04:30	36	27	63	10:15-10:30	14	6	20
04:30-04:45	0	1	1	10:30-10:45	15	30	45	04:30-04:45	44	50	94	10:30-10:45	8	2	10
04:45-05:00	1	9	10	10:45-11:00	16	28	44	04:45-05:00	47	33	80	10:45-11:00	8	3	11
05:00-05:15	2	6	8	11:00-11:15	22	41	63	05:00-05:15	51	27	78	11:00-11:15	9	0	9
05:15-05:30	0	12	12	11:15-11:30	21	30	51	05:15-05:30	42	42	84	11:15-11:30	4	2	6
05:30-05:45	1	12	13	11:30-11:45	18	21	39	05:30-05:45	41	20	61	11:30-11:45	5	1	6
05:45-06:00	1	18	19	11:45-12:00	22	21	43	05:45-06:00	41	22	63	11:45-12:00	2	0	2

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:30 PM to 05:30 PM		
AM - PEAK HR VOLUME	84	191	275	PM - PEAK HR VOLUME	184	152	336
AM - K FACTOR (%)			8.03	PM - K FACTOR (%)			9.81
AM - D (%)	30.55	69.45	100.00	PM - D (%)	54.76	45.24	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	04:30 PM to 05:30 PM	04:30 PM to 05:30 PM	
AM - PEAK HR VOLUME	107	198		PM - PEAK HR VOLUME	184	152	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:30 PM to 05:30 PM		
AM - PEAK HR VOLUME	84	191	275	PM - PEAK HR VOLUME	184	152	336
AM - K FACTOR (%)			8.03	PM - K FACTOR (%)			9.81
AM - D (%)	30.55	69.45	100.00	PM - D (%)	54.76	45.24	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	410	775	1,185
PEAK HR TIME	01:45 PM to 02:45 PM			AM 12-HR PERIOD (00:00-12:00)	435	850	1,285
PEAK HR VOLUME	141	99	240	PM 6-HR PERIOD (12:00-18:00)	797	654	1,451
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,292	847	2,139
PEAK HR TIME	01:45 PM to 02:45 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,727	1,697	3,424
PEAK HR VOLUME	141	130		D (%)	50.44	49.56	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/23/2014															
12:00-12:15	7	1	8	06:00-06:15	1	7	8	12:00-12:15	17	33	50	06:00-06:15	40	22	62
12:15-12:30	12	1	13	06:15-06:30	1	14	15	12:15-12:30	33	21	54	06:15-06:30	35	18	53
12:30-12:45	8	1	9	06:30-06:45	2	11	13	12:30-12:45	27	37	64	06:30-06:45	29	22	51
12:45-01:00	6	3	9	06:45-07:00	5	24	29	12:45-01:00	25	24	49	06:45-07:00	32	18	50
01:00-01:15	4	1	5	07:00-07:15	10	19	29	01:00-01:15	20	19	39	07:00-07:15	24	14	38
01:15-01:30	2	2	4	07:15-07:30	2	14	16	01:15-01:30	26	32	58	07:15-07:30	18	13	31
01:30-01:45	2	0	2	07:30-07:45	7	21	28	01:30-01:45	32	35	67	07:30-07:45	14	13	27
01:45-02:00	2	3	5	07:45-08:00	14	29	43	01:45-02:00	35	27	62	07:45-08:00	20	12	32
02:00-02:15	2	0	2	08:00-08:15	11	32	43	02:00-02:15	33	21	54	08:00-08:15	10	15	25
02:15-02:30	3	2	5	08:15-08:30	12	21	33	02:15-02:30	33	18	51	08:15-08:30	19	6	25
02:30-02:45	2	2	4	08:30-08:45	22	30	52	02:30-02:45	22	26	48	08:30-08:45	13	12	25
02:45-03:00	2	0	2	08:45-09:00	23	39	62	02:45-03:00	29	24	53	08:45-09:00	14	12	26
03:00-03:15	2	0	2	09:00-09:15	16	32	48	03:00-03:15	25	21	46	09:00-09:15	13	4	17
03:15-03:30	1	0	1	09:15-09:30	17	39	56	03:15-03:30	35	19	54	09:15-09:30	10	4	14
03:30-03:45	0	1	1	09:30-09:45	20	32	52	03:30-03:45	22	28	50	09:30-09:45	11	6	17
03:45-04:00	0	1	1	09:45-10:00	24	37	61	03:45-04:00	22	17	39	09:45-10:00	6	5	11
04:00-04:15	3	3	6	10:00-10:15	21	31	52	04:00-04:15	22	29	51	10:00-10:15	10	2	12
04:15-04:30	0	1	1	10:15-10:30	20	34	54	04:15-04:30	29	20	49	10:15-10:30	9	1	10
04:30-04:45	3	3	6	10:30-10:45	29	24	53	04:30-04:45	24	25	49	10:30-10:45	12	2	14
04:45-05:00	0	1	1	10:45-11:00	32	22	54	04:45-05:00	33	20	53	10:45-11:00	3	3	6
05:00-05:15	1	3	4	11:00-11:15	24	26	50	05:00-05:15	29	20	49	11:00-11:15	10	2	12
05:15-05:30	3	6	9	11:15-11:30	31	23	54	05:15-05:30	43	26	69	11:15-11:30	3	0	3
05:30-05:45	1	4	5	11:30-11:45	24	23	47	05:30-05:45	34	28	62	11:30-11:45	0	0	0
05:45-06:00	0	8	8	11:45-12:00	22	25	47	05:45-06:00	43	15	58	11:45-12:00	5	1	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	68	122	190
AM - K FACTOR (%)			6.43
AM - D (%)	35.79	64.21	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	68	122	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	160	91	251
PM - K FACTOR (%)			8.49
PM - D (%)	63.75	36.25	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	160	94	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:15 AM to 10:15 AM		
AM - PEAK HR VOLUME	82	139	221
AM - K FACTOR (%)			7.47
AM - D (%)	37.10	62.90	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	160	91	251
PM - K FACTOR (%)			8.49
PM - D (%)	63.75	36.25	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM		
PEAK HR VOLUME	126	115	241
DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	133	140	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	390	609	999
AM 12-HR PERIOD (00:00-12:00)	456	656	1,112
PM 6-HR PERIOD (12:00-18:00)	693	585	1,278
PM 12-HR PERIOD (12:00-24:00)	1,053	792	1,845
24 HOUR PERIOD	1,509	1,448	2,957
D (%)	51.03	48.97	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/22/2014															
12:00-12:15	10	2	12	06:00-06:15	2	10	12	12:00-12:15	32	32	64	06:00-06:15	45	22	67
12:15-12:30	6	1	7	06:15-06:30	2	15	17	12:15-12:30	32	22	54	06:15-06:30	32	18	50
12:30-12:45	7	0	7	06:30-06:45	4	23	27	12:30-12:45	23	38	61	06:30-06:45	39	26	65
12:45-01:00	7	1	8	06:45-07:00	10	15	25	12:45-01:00	28	24	52	06:45-07:00	33	18	51
01:00-01:15	6	1	7	07:00-07:15	7	23	30	01:00-01:15	25	31	56	07:00-07:15	30	16	46
01:15-01:30	4	0	4	07:15-07:30	17	33	50	01:15-01:30	26	30	56	07:15-07:30	26	17	43
01:30-01:45	4	1	5	07:30-07:45	11	31	42	01:30-01:45	33	21	54	07:30-07:45	24	16	40
01:45-02:00	2	0	2	07:45-08:00	17	26	43	01:45-02:00	24	13	37	07:45-08:00	17	18	35
02:00-02:15	0	0	0	08:00-08:15	14	21	35	02:00-02:15	38	21	59	08:00-08:15	22	12	34
02:15-02:30	1	0	1	08:15-08:30	21	24	45	02:15-02:30	27	24	51	08:15-08:30	22	18	40
02:30-02:45	0	1	1	08:30-08:45	22	47	69	02:30-02:45	31	23	54	08:30-08:45	19	14	33
02:45-03:00	0	0	0	08:45-09:00	20	50	70	02:45-03:00	29	30	59	08:45-09:00	13	18	31
03:00-03:15	0	2	2	09:00-09:15	25	42	67	03:00-03:15	33	34	67	09:00-09:15	14	9	23
03:15-03:30	1	1	2	09:15-09:30	23	34	57	03:15-03:30	39	32	71	09:15-09:30	7	16	23
03:30-03:45	2	0	2	09:30-09:45	19	38	57	03:30-03:45	35	26	61	09:30-09:45	25	11	36
03:45-04:00	0	0	0	09:45-10:00	25	38	63	03:45-04:00	45	25	70	09:45-10:00	20	8	28
04:00-04:15	1	0	1	10:00-10:15	31	32	63	04:00-04:15	29	30	59	10:00-10:15	20	13	33
04:15-04:30	2	3	5	10:15-10:30	25	29	54	04:15-04:30	37	29	66	10:15-10:30	9	14	23
04:30-04:45	2	0	2	10:30-10:45	19	39	58	04:30-04:45	35	28	63	10:30-10:45	16	7	23
04:45-05:00	3	3	6	10:45-11:00	22	35	57	04:45-05:00	31	31	62	10:45-11:00	13	2	15
05:00-05:15	0	3	3	11:00-11:15	25	26	51	05:00-05:15	32	26	58	11:00-11:15	10	7	17
05:15-05:30	2	2	4	11:15-11:30	28	35	63	05:15-05:30	20	31	51	11:15-11:30	5	1	6
05:30-05:45	1	6	7	11:30-11:45	46	35	81	05:30-05:45	41	26	67	11:30-11:45	13	3	16
05:45-06:00	0	12	12	11:45-12:00	36	35	71	05:45-06:00	43	27	70	11:45-12:00	9	1	10

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	77	142	219
AM - K FACTOR (%)			6.23
AM - D (%)	35.16	64.84	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	77	142	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM		
PM - PEAK HR VOLUME	152	117	269
PM - K FACTOR (%)			7.65
PM - D (%)	56.51	43.49	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	161	118	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM		
AM - PEAK HR VOLUME	135	131	266
AM - K FACTOR (%)			7.56
AM - D (%)	50.75	49.25	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM		
PM - PEAK HR VOLUME	152	117	269
PM - K FACTOR (%)			7.65
PM - D (%)	56.51	43.49	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:15 AM to 12:15 PM		
PEAK HR VOLUME	142	137	279
DIRECTIONAL PEAK			
PEAK HR TIME	11:30 AM to 12:30 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	146	152	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	471	736	1,207
AM 12-HR PERIOD (00:00-12:00)	532	775	1,307
PM 6-HR PERIOD (12:00-18:00)	768	654	1,422
PM 12-HR PERIOD (12:00-24:00)	1,251	959	2,210
24 HOUR PERIOD	1,783	1,734	3,517
D (%)	50.70	49.30	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/25/2014															
12:00-12:15	8	1	9	06:00-06:15	2	17	19	12:00-12:15	23	18	41	06:00-06:15	41	23	64
12:15-12:30	2	0	2	06:15-06:30	6	21	27	12:15-12:30	32	16	48	06:15-06:30	55	20	75
12:30-12:45	2	0	2	06:30-06:45	8	21	29	12:30-12:45	23	14	37	06:30-06:45	46	16	62
12:45-01:00	1	1	2	06:45-07:00	7	22	29	12:45-01:00	24	19	43	06:45-07:00	35	17	52
01:00-01:15	2	1	3	07:00-07:15	8	44	52	01:00-01:15	27	16	43	07:00-07:15	29	14	43
01:15-01:30	1	0	1	07:15-07:30	12	46	58	01:15-01:30	28	31	59	07:15-07:30	22	13	35
01:30-01:45	0	1	1	07:30-07:45	18	60	78	01:30-01:45	22	29	51	07:30-07:45	24	15	39
01:45-02:00	0	0	0	07:45-08:00	26	44	70	01:45-02:00	24	37	61	07:45-08:00	17	10	27
02:00-02:15	0	0	0	08:00-08:15	25	28	53	02:00-02:15	26	32	58	08:00-08:15	17	13	30
02:15-02:30	0	0	0	08:15-08:30	15	31	46	02:15-02:30	47	30	77	08:15-08:30	24	12	36
02:30-02:45	2	0	2	08:30-08:45	17	48	65	02:30-02:45	29	27	56	08:30-08:45	7	9	16
02:45-03:00	0	1	1	08:45-09:00	25	52	77	02:45-03:00	25	17	42	08:45-09:00	20	10	30
03:00-03:15	0	0	0	09:00-09:15	14	35	49	03:00-03:15	30	21	51	09:00-09:15	17	5	22
03:15-03:30	0	1	1	09:15-09:30	24	37	61	03:15-03:30	33	22	55	09:15-09:30	20	6	26
03:30-03:45	0	1	1	09:30-09:45	17	19	36	03:30-03:45	34	30	64	09:30-09:45	23	5	28
03:45-04:00	0	2	2	09:45-10:00	18	25	43	03:45-04:00	34	18	52	09:45-10:00	9	4	13
04:00-04:15	0	6	6	10:00-10:15	18	25	43	04:00-04:15	42	24	66	10:00-10:15	15	4	19
04:15-04:30	0	9	9	10:15-10:30	16	24	40	04:15-04:30	37	25	62	10:15-10:30	10	1	11
04:30-04:45	2	7	9	10:30-10:45	17	18	35	04:30-04:45	31	23	54	10:30-10:45	9	1	10
04:45-05:00	1	5	6	10:45-11:00	12	27	39	04:45-05:00	37	22	59	10:45-11:00	8	4	12
05:00-05:15	1	17	18	11:00-11:15	16	22	38	05:00-05:15	38	19	57	11:00-11:15	6	2	8
05:15-05:30	0	12	12	11:15-11:30	19	31	50	05:15-05:30	45	36	81	11:15-11:30	3	1	4
05:30-05:45	2	11	13	11:30-11:45	18	22	40	05:30-05:45	41	24	65	11:30-11:45	10	1	11
05:45-06:00	1	12	13	11:45-12:00	21	21	42	05:45-06:00	42	18	60	11:45-12:00	1	0	1

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	81	178	259
AM - K FACTOR (%)			7.97
AM - D (%)	31.27	68.73	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	84	194	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	169	101	270
PM - K FACTOR (%)			8.31
PM - D (%)	62.59	37.41	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	184	101	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	81	178	259
AM - K FACTOR (%)			7.97
AM - D (%)	31.27	68.73	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	169	101	270
PM - K FACTOR (%)			8.31
PM - D (%)	62.59	37.41	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	126	126	252
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	01:15 PM to 02:15 PM	
PEAK HR VOLUME	127	129	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	379	740	1,119
AM 12-HR PERIOD (00:00-12:00)	404	828	1,232
PM 6-HR PERIOD (12:00-18:00)	774	568	1,342
PM 12-HR PERIOD (12:00-24:00)	1,242	774	2,016
24 HOUR PERIOD	1,646	1,602	3,248
D (%)	50.68	49.32	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/24/2014															
12:00-12:15	2	2	4	06:00-06:15	2	21	23	12:00-12:15	18	24	42	06:00-06:15	54	14	68
12:15-12:30	1	1	2	06:15-06:30	5	20	25	12:15-12:30	24	21	45	06:15-06:30	34	10	44
12:30-12:45	2	1	3	06:30-06:45	8	24	32	12:30-12:45	29	26	55	06:30-06:45	26	22	48
12:45-01:00	1	1	2	06:45-07:00	14	20	34	12:45-01:00	26	18	44	06:45-07:00	35	13	48
01:00-01:15	0	1	1	07:00-07:15	19	38	57	01:00-01:15	22	28	50	07:00-07:15	29	13	42
01:15-01:30	2	0	2	07:15-07:30	8	39	47	01:15-01:30	24	23	47	07:15-07:30	33	14	47
01:30-01:45	1	0	1	07:30-07:45	15	54	69	01:30-01:45	24	25	49	07:30-07:45	27	14	41
01:45-02:00	1	1	2	07:45-08:00	31	55	86	01:45-02:00	24	32	56	07:45-08:00	19	9	28
02:00-02:15	0	0	0	08:00-08:15	33	34	67	02:00-02:15	18	24	42	08:00-08:15	19	6	25
02:15-02:30	0	1	1	08:15-08:30	21	22	43	02:15-02:30	40	21	61	08:15-08:30	12	2	14
02:30-02:45	1	0	1	08:30-08:45	11	47	58	02:30-02:45	26	18	44	08:30-08:45	13	2	15
02:45-03:00	0	1	1	08:45-09:00	32	44	76	02:45-03:00	36	16	52	08:45-09:00	12	6	18
03:00-03:15	2	0	2	09:00-09:15	21	37	58	03:00-03:15	28	20	48	09:00-09:15	10	3	13
03:15-03:30	1	3	4	09:15-09:30	17	40	57	03:15-03:30	28	16	44	09:15-09:30	15	4	19
03:30-03:45	0	1	1	09:30-09:45	19	31	50	03:30-03:45	36	37	73	09:30-09:45	14	8	22
03:45-04:00	1	1	2	09:45-10:00	17	35	52	03:45-04:00	23	21	44	09:45-10:00	13	2	15
04:00-04:15	0	2	2	10:00-10:15	29	21	50	04:00-04:15	42	20	62	10:00-10:15	9	2	11
04:15-04:30	0	7	7	10:15-10:30	17	31	48	04:15-04:30	36	22	58	10:15-10:30	7	2	9
04:30-04:45	0	2	2	10:30-10:45	18	21	39	04:30-04:45	34	17	51	10:30-10:45	6	1	7
04:45-05:00	0	10	10	10:45-11:00	25	27	52	04:45-05:00	33	28	61	10:45-11:00	12	0	12
05:00-05:15	0	14	14	11:00-11:15	15	29	44	05:00-05:15	41	23	64	11:00-11:15	8	2	10
05:15-05:30	0	8	8	11:15-11:30	27	28	55	05:15-05:30	28	23	51	11:15-11:30	2	3	5
05:30-05:45	1	13	14	11:30-11:45	12	21	33	05:30-05:45	38	28	66	11:30-11:45	1	2	3
05:45-06:00	1	20	21	11:45-12:00	20	22	42	05:45-06:00	48	16	64	11:45-12:00	2	0	2

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	87	182	269
AM - K FACTOR (%)			8.56
AM - D (%)	32.34	67.66	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	100	186	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	168	81	249
PM - K FACTOR (%)			7.92
PM - D (%)	67.47	32.53	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	174	102	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	87	182	269
AM - K FACTOR (%)			8.56
AM - D (%)	32.34	67.66	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	168	81	249
PM - K FACTOR (%)			7.92
PM - D (%)	67.47	32.53	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM		
PEAK HR VOLUME	74	143	217
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	120	143	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	436	761	1,197
AM 12-HR PERIOD (00:00-12:00)	453	851	1,304
PM 6-HR PERIOD (12:00-18:00)	726	547	1,273
PM 12-HR PERIOD (12:00-24:00)	1,138	701	1,839
24 HOUR PERIOD	1,591	1,552	3,143
D (%)	50.62	49.38	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/27/2014															
12:00-12:15	2	2	4	06:00-06:15	2	6	8	12:00-12:15	27	28	55	06:00-06:15	17	21	38
12:15-12:30	0	0	0	06:15-06:30	1	7	8	12:15-12:30	39	23	62	06:15-06:30	32	19	51
12:30-12:45	7	1	8	06:30-06:45	6	5	11	12:30-12:45	38	15	53	06:30-06:45	18	17	35
12:45-01:00	3	0	3	06:45-07:00	5	13	18	12:45-01:00	37	26	63	06:45-07:00	14	18	32
01:00-01:15	4	0	4	07:00-07:15	9	7	16	01:00-01:15	28	27	55	07:00-07:15	16	18	34
01:15-01:30	3	1	4	07:15-07:30	6	15	21	01:15-01:30	36	27	63	07:15-07:30	17	16	33
01:30-01:45	3	1	4	07:30-07:45	8	18	26	01:30-01:45	44	33	77	07:30-07:45	12	13	25
01:45-02:00	2	0	2	07:45-08:00	8	18	26	01:45-02:00	21	20	41	07:45-08:00	15	17	32
02:00-02:15	2	1	3	08:00-08:15	20	27	47	02:00-02:15	48	30	78	08:00-08:15	14	20	34
02:15-02:30	2	0	2	08:15-08:30	13	24	37	02:15-02:30	28	26	54	08:15-08:30	21	17	38
02:30-02:45	1	0	1	08:30-08:45	15	19	34	02:30-02:45	28	24	52	08:30-08:45	10	28	38
02:45-03:00	0	0	0	08:45-09:00	17	34	51	02:45-03:00	25	18	43	08:45-09:00	21	13	34
03:00-03:15	2	1	3	09:00-09:15	11	16	27	03:00-03:15	19	19	38	09:00-09:15	18	16	34
03:15-03:30	2	1	3	09:15-09:30	14	21	35	03:15-03:30	26	25	51	09:15-09:30	19	12	31
03:30-03:45	0	1	1	09:30-09:45	11	24	35	03:30-03:45	27	19	46	09:30-09:45	13	12	25
03:45-04:00	0	0	0	09:45-10:00	23	32	55	03:45-04:00	30	31	61	09:45-10:00	11	10	21
04:00-04:15	0	1	1	10:00-10:15	28	38	66	04:00-04:15	27	23	50	10:00-10:15	9	7	16
04:15-04:30	1	1	2	10:15-10:30	21	27	48	04:15-04:30	20	33	53	10:15-10:30	6	2	8
04:30-04:45	1	0	1	10:30-10:45	27	24	51	04:30-04:45	27	24	51	10:30-10:45	12	8	20
04:45-05:00	2	2	4	10:45-11:00	34	29	63	04:45-05:00	22	27	49	10:45-11:00	11	8	19
05:00-05:15	1	2	3	11:00-11:15	32	19	51	05:00-05:15	30	35	65	11:00-11:15	9	5	14
05:15-05:30	1	2	3	11:15-11:30	23	27	50	05:15-05:30	19	31	50	11:15-11:30	7	2	9
05:30-05:45	0	2	2	11:30-11:45	24	29	53	05:30-05:45	21	24	45	11:30-11:45	13	4	17
05:45-06:00	0	1	1	11:45-12:00	33	31	64	05:45-06:00	27	20	47	11:45-12:00	7	3	10

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	65	104	169	PM - PEAK HR VOLUME	99	119	218
AM - K FACTOR (%)			5.81	PM - K FACTOR (%)			7.49
AM - D (%)	38.46	61.54	100.00	PM - D (%)	45.41	54.59	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	03:15 PM to 04:15 PM	04:15 PM to 05:15 PM	
AM - PEAK HR VOLUME	65	104		PM - PEAK HR VOLUME	110	119	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	10:00 AM to 11:00 AM			PM - PEAK HR TIME	01:15 PM to 02:15 PM		
AM - PEAK HR VOLUME	110	118	228	PM - PEAK HR VOLUME	149	110	259
AM - K FACTOR (%)			7.84	PM - K FACTOR (%)			8.90
AM - D (%)	48.25	51.75	100.00	PM - D (%)	57.53	42.47	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	391	510	901
PEAK HR TIME	01:15 PM to 02:15 PM			AM 12-HR PERIOD (00:00-12:00)	430	530	960
PEAK HR VOLUME	149	110	259	PM 6-HR PERIOD (12:00-18:00)	694	608	1,302
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,036	914	1,950
PEAK HR TIME	01:15 PM to 02:15 PM	09:30 AM to 10:30 AM		24 HOUR PERIOD	1,466	1,444	2,910
PEAK HR VOLUME	149	121		D (%)	50.38	49.62	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 07/26/2014															
12:00-12:15	4	0	4	06:00-06:15	6	20	26	12:00-12:15	33	28	61	06:00-06:15	40	20	60
12:15-12:30	3	2	5	06:15-06:30	4	16	20	12:15-12:30	20	26	46	06:15-06:30	54	26	80
12:30-12:45	0	1	1	06:30-06:45	13	14	27	12:30-12:45	29	52	81	06:30-06:45	35	10	45
12:45-01:00	5	1	6	06:45-07:00	10	26	36	12:45-01:00	41	23	64	06:45-07:00	40	25	65
01:00-01:15	1	0	1	07:00-07:15	6	31	37	01:00-01:15	35	27	62	07:00-07:15	24	20	44
01:15-01:30	1	0	1	07:15-07:30	9	49	58	01:15-01:30	35	33	68	07:15-07:30	38	20	58
01:30-01:45	2	1	3	07:30-07:45	19	68	87	01:30-01:45	26	33	59	07:30-07:45	31	9	40
01:45-02:00	2	0	2	07:45-08:00	26	44	70	01:45-02:00	30	17	47	07:45-08:00	17	9	26
02:00-02:15	0	0	0	08:00-08:15	28	33	61	02:00-02:15	32	26	58	08:00-08:15	13	12	25
02:15-02:30	1	0	1	08:15-08:30	17	46	63	02:15-02:30	23	25	48	08:15-08:30	16	4	20
02:30-02:45	1	0	1	08:30-08:45	20	41	61	02:30-02:45	22	34	56	08:30-08:45	18	7	25
02:45-03:00	0	2	2	08:45-09:00	16	29	45	02:45-03:00	26	21	47	08:45-09:00	22	7	29
03:00-03:15	0	0	0	09:00-09:15	29	36	65	03:00-03:15	39	23	62	09:00-09:15	16	6	22
03:15-03:30	0	0	0	09:15-09:30	20	32	52	03:15-03:30	34	15	49	09:15-09:30	21	6	27
03:30-03:45	1	1	2	09:30-09:45	19	34	53	03:30-03:45	30	27	57	09:30-09:45	17	8	25
03:45-04:00	1	1	2	09:45-10:00	20	32	52	03:45-04:00	37	19	56	09:45-10:00	16	4	20
04:00-04:15	1	4	5	10:00-10:15	16	28	44	04:00-04:15	33	24	57	10:00-10:15	16	6	22
04:15-04:30	1	7	8	10:15-10:30	15	26	41	04:15-04:30	47	43	90	10:15-10:30	10	2	12
04:30-04:45	0	3	3	10:30-10:45	21	24	45	04:30-04:45	36	20	56	10:30-10:45	9	6	15
04:45-05:00	1	10	11	10:45-11:00	26	32	58	04:45-05:00	44	19	63	10:45-11:00	12	2	14
05:00-05:15	0	11	11	11:00-11:15	25	32	57	05:00-05:15	42	31	73	11:00-11:15	12	3	15
05:15-05:30	1	13	14	11:15-11:30	11	22	33	05:15-05:30	37	24	61	11:15-11:30	8	3	11
05:30-05:45	1	13	14	11:30-11:45	24	28	52	05:30-05:45	36	26	62	11:30-11:45	9	0	9
05:45-06:00	2	13	15	11:45-12:00	24	21	45	05:45-06:00	31	26	57	11:45-12:00	4	0	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	90	191	281	PM - PEAK HR VOLUME	169	113	282
AM - K FACTOR (%)			8.14	PM - K FACTOR (%)			8.17
AM - D (%)	32.03	67.97	100.00	PM - D (%)	59.93	40.07	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM		PM - PEAK HR TIME	04:15 PM to 05:15 PM	03:30 PM to 04:30 PM	
AM - PEAK HR VOLUME	91	194		PM - PEAK HR VOLUME	169	113	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	90	191	281	PM - PEAK HR VOLUME	169	113	282
AM - K FACTOR (%)			8.14	PM - K FACTOR (%)			8.17
AM - D (%)	32.03	67.97	100.00	PM - D (%)	59.93	40.07	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	424	764	1,188
PEAK HR TIME	12:30 PM to 01:30 PM			AM 12-HR PERIOD (00:00-12:00)	453	847	1,300
PEAK HR VOLUME	140	135	275	PM 6-HR PERIOD (12:00-18:00)	798	642	1,440
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,296	857	2,153
PEAK HR TIME	12:30 PM to 01:30 PM	12:30 PM to 01:30 PM		24 HOUR PERIOD	1,749	1,704	3,453
PEAK HR VOLUME	140	135		D (%)	50.65	49.35	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2014

Site ID:	B72928000000	**Route No:**	9280	**Date From:**	2014/07/14 0:00
Town:	Oahu	**Direction:**	+MP	**Date To:**	2014/07/27 23:45
Location:	Pupukea Rd - Kamehameha Hwy to Alapio Rd				

Functional Classification: 18 TEST NEW URBAN: MINOR COLLECTOR

REPORT TOTALS - 336 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	744	1.62%	1487
PC	32392	70.57%	64784
2A-4T	12428	27.08%	24856
LIGHT VEHICLE TOTALS	45564	99.27%	91127
HEAVY VEHICLES			
Bus	95	0.21%	238
SINGLE UNIT TRUCK			
2A-6T	79	0.17%	158
3A-SU	120	0.26%	360
4A-SU	3	0.01%	12
SINGLE-TRAILER TRUCKS			
4A-ST	21	0.05%	84
5A-ST	13	0.03%	65
6A-ST	1	0.00%	6
MULTI-TRAILER TRUCKS			
5A-MT	5	0.01%	25
6A-MT	1	0.00%	6
7A-MT	1	0.00%	7
HEAVY VEHICLE TOTALS	339	0.74%	961
CLASSIFIED VEHICLES TOTALS	45903 (A)	100.00%	92088 (B)
UNCLASSIFIED VEHICLES TOTALS	-2	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.997

ROADTUBE EQUIVALENT(B/2) = 46044 (C)

PEAK HOUR VOLUME : 309 2014/07/20 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	3	(65A-1) 0.97%	21	3300	(65A-2) 0.64%	9.36%
COMBINATION (TYPE 8-13)	1	(65B-1) 0.32%	3		(65B-2) 0.09%	9.36%

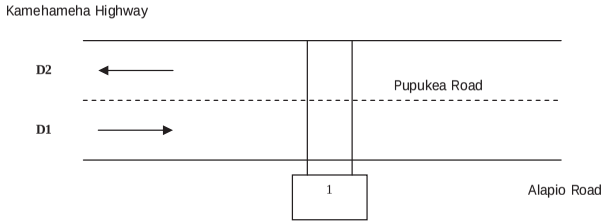
Traffic Data Service
Traffic Station Sketch

N

Island: Oahu

Area: Waimea

Section ID/Station #: B72928000000



Meter #	File Name	GPS
1. t161	D1016005_B72928000000	21.64597, -158.0592
2.	D1016006_B72928000000	

Station Description:
Pupukea Road: Kamehameha Highway to Alapio Road

Survey Beginning Date/Time: 10/16/14@ 0000		Survey Ending Date/Time: 10/29/14@ 2400

Survey Method:	Road Tube	Data Type:	Class
Survey Crew:	LM		C1B
Sketch Updated:		By:	SR
Remarks:	748		

FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	ROUTE MILE
Pupukea Road		18		9280	

D1= Direction to End — D1: Alapio Road / Kanalani Place
D2= Direction to Begin — D2: Kamehameha Highway / Kamehameha Highway

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/17/2014															
12:00-12:15	3	1	4	06:00-06:15	2	24	26	12:00-12:15	23	26	49	06:00-06:15	46	15	61
12:15-12:30	2	2	4	06:15-06:30	8	21	29	12:15-12:30	17	21	38	06:15-06:30	31	14	45
12:30-12:45	4	0	4	06:30-06:45	8	23	31	12:30-12:45	17	14	31	06:30-06:45	39	24	63
12:45-01:00	0	0	0	06:45-07:00	9	29	38	12:45-01:00	31	17	48	06:45-07:00	35	20	55
01:00-01:15	1	0	1	07:00-07:15	12	29	41	01:00-01:15	24	23	47	07:00-07:15	30	17	47
01:15-01:30	0	1	1	07:15-07:30	6	41	47	01:15-01:30	26	23	49	07:15-07:30	22	10	32
01:30-01:45	2	0	2	07:30-07:45	17	65	82	01:30-01:45	20	29	49	07:30-07:45	23	12	35
01:45-02:00	1	0	1	07:45-08:00	35	44	79	01:45-02:00	21	40	61	07:45-08:00	29	6	35
02:00-02:15	2	0	2	08:00-08:15	32	37	69	02:00-02:15	17	32	49	08:00-08:15	13	5	18
02:15-02:30	0	0	0	08:15-08:30	26	43	69	02:15-02:30	36	23	59	08:15-08:30	26	6	32
02:30-02:45	0	0	0	08:30-08:45	22	26	48	02:30-02:45	29	20	49	08:30-08:45	13	5	18
02:45-03:00	0	0	0	08:45-09:00	23	46	69	02:45-03:00	31	17	48	08:45-09:00	13	11	24
03:00-03:15	0	0	0	09:00-09:15	20	44	64	03:00-03:15	36	25	61	09:00-09:15	11	6	17
03:15-03:30	1	0	1	09:15-09:30	24	26	50	03:15-03:30	29	24	53	09:15-09:30	23	7	30
03:30-03:45	1	2	3	09:30-09:45	23	29	52	03:30-03:45	33	24	57	09:30-09:45	19	7	26
03:45-04:00	0	1	1	09:45-10:00	19	26	45	03:45-04:00	30	28	58	09:45-10:00	14	7	21
04:00-04:15	0	2	2	10:00-10:15	15	28	43	04:00-04:15	29	26	55	10:00-10:15	12	4	16
04:15-04:30	0	4	4	10:15-10:30	14	16	30	04:15-04:30	34	26	60	10:15-10:30	11	7	18
04:30-04:45	0	6	6	10:30-10:45	20	36	56	04:30-04:45	45	28	73	10:30-10:45	12	3	15
04:45-05:00	0	5	5	10:45-11:00	24	22	46	04:45-05:00	45	27	72	10:45-11:00	6	3	9
05:00-05:15	0	9	9	11:00-11:15	17	21	38	05:00-05:15	37	22	59	11:00-11:15	9	1	10
05:15-05:30	2	12	14	11:15-11:30	27	27	54	05:15-05:30	43	22	65	11:15-11:30	12	5	17
05:30-05:45	1	19	20	11:30-11:45	20	24	44	05:30-05:45	37	22	59	11:30-11:45	9	1	10
05:45-06:00	3	21	24	11:45-12:00	28	23	51	05:45-06:00	47	26	73	11:45-12:00	2	0	2

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	04:30 PM to 05:30 PM		
AM - PEAK HR VOLUME	110	189	299	PM - PEAK HR VOLUME	170	99	269
AM - K FACTOR (%)			9.10	PM - K FACTOR (%)			8.18
AM - D (%)	36.79	63.21	100.00	PM - D (%)	63.20	36.80	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:30 AM to 08:30 AM		PM - PEAK HR TIME	05:15 PM to 06:15 PM	03:45 PM to 04:45 PM	
AM - PEAK HR VOLUME	115	189		PM - PEAK HR VOLUME	173	108	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	04:30 PM to 05:30 PM		
AM - PEAK HR VOLUME	110	189	299	PM - PEAK HR VOLUME	170	99	269
AM - K FACTOR (%)			9.10	PM - K FACTOR (%)			8.18
AM - D (%)	36.79	63.21	100.00	PM - D (%)	63.20	36.80	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	451	750	1,201
PEAK HR TIME	01:30 PM to 02:30 PM			AM 12-HR PERIOD (00:00-12:00)	474	835	1,309
PEAK HR VOLUME	94	124	218	PM 6-HR PERIOD (12:00-18:00)	737	585	1,322
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,197	781	1,978
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,671	1,616	3,287
PEAK HR VOLUME	113	125		D (%)	50.84	49.16	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/16/2014															
12:00-12:15	6	0	6	06:00-06:15	2	21	23	12:00-12:15	15	13	28	06:00-06:15	38	23	61
12:15-12:30	4	0	4	06:15-06:30	2	19	21	12:15-12:30	19	27	46	06:15-06:30	42	15	57
12:30-12:45	2	0	2	06:30-06:45	10	28	38	12:30-12:45	27	24	51	06:30-06:45	42	21	63
12:45-01:00	2	0	2	06:45-07:00	7	26	33	12:45-01:00	21	16	37	06:45-07:00	46	21	67
01:00-01:15	0	0	0	07:00-07:15	9	38	47	01:00-01:15	17	24	41	07:00-07:15	41	9	50
01:15-01:30	2	0	2	07:15-07:30	6	35	41	01:15-01:30	29	15	44	07:15-07:30	43	11	54
01:30-01:45	1	0	1	07:30-07:45	11	76	87	01:30-01:45	21	31	52	07:30-07:45	23	11	34
01:45-02:00	5	1	6	07:45-08:00	33	42	75	01:45-02:00	21	33	54	07:45-08:00	23	10	33
02:00-02:15	1	0	1	08:00-08:15	31	27	58	02:00-02:15	25	33	58	08:00-08:15	18	11	29
02:15-02:30	1	0	1	08:15-08:30	19	30	49	02:15-02:30	38	16	54	08:15-08:30	13	8	21
02:30-02:45	1	0	1	08:30-08:45	15	32	47	02:30-02:45	30	22	52	08:30-08:45	25	5	30
02:45-03:00	0	0	0	08:45-09:00	18	42	60	02:45-03:00	38	22	60	08:45-09:00	16	6	22
03:00-03:15	0	0	0	09:00-09:15	27	39	66	03:00-03:15	21	22	43	09:00-09:15	10	3	13
03:15-03:30	0	0	0	09:15-09:30	18	36	54	03:15-03:30	19	25	44	09:15-09:30	14	10	24
03:30-03:45	1	3	4	09:30-09:45	19	24	43	03:30-03:45	30	34	64	09:30-09:45	17	2	19
03:45-04:00	1	3	4	09:45-10:00	23	23	46	03:45-04:00	30	24	54	09:45-10:00	15	1	16
04:00-04:15	0	2	2	10:00-10:15	18	31	49	04:00-04:15	40	21	61	10:00-10:15	20	6	26
04:15-04:30	0	3	3	10:15-10:30	14	29	43	04:15-04:30	36	30	66	10:15-10:30	7	3	10
04:30-04:45	1	7	8	10:30-10:45	15	18	33	04:30-04:45	44	36	80	10:30-10:45	10	4	14
04:45-05:00	0	9	9	10:45-11:00	16	21	37	04:45-05:00	37	36	73	10:45-11:00	7	1	8
05:00-05:15	0	11	11	11:00-11:15	17	27	44	05:00-05:15	38	22	60	11:00-11:15	8	3	11
05:15-05:30	1	10	11	11:15-11:30	30	17	47	05:15-05:30	42	21	63	11:15-11:30	4	2	6
05:30-05:45	1	14	15	11:30-11:45	21	20	41	05:30-05:45	32	26	58	11:30-11:45	8	2	10
05:45-06:00	3	18	21	11:45-12:00	30	34	64	05:45-06:00	47	26	73	11:45-12:00	1	0	1

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	94	175	269	PM - PEAK HR VOLUME	157	123	280
AM - K FACTOR (%)			8.26	PM - K FACTOR (%)			8.60
AM - D (%)	34.94	65.06	100.00	PM - D (%)	56.07	43.93	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:15 PM to 05:15 PM	
AM - PEAK HR VOLUME	98	191		PM - PEAK HR VOLUME	169	124	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	94	175	269	PM - PEAK HR VOLUME	157	123	280
AM - K FACTOR (%)			8.26	PM - K FACTOR (%)			8.60
AM - D (%)	34.94	65.06	100.00	PM - D (%)	56.07	43.93	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	411	735	1,146
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	444	816	1,260
PEAK HR VOLUME	131	93	224	PM 6-HR PERIOD (12:00-18:00)	717	599	1,316
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,208	787	1,995
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,652	1,603	3,255
PEAK HR VOLUME	131	122		D (%)	50.75	49.25	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/19/2014															
12:00-12:15	5	2	7	06:00-06:15	2	7	9	12:00-12:15	21	20	41	06:00-06:15	17	22	39
12:15-12:30	3	4	7	06:15-06:30	2	6	8	12:15-12:30	21	15	36	06:15-06:30	19	11	30
12:30-12:45	8	0	8	06:30-06:45	1	9	10	12:30-12:45	20	17	37	06:30-06:45	18	14	32
12:45-01:00	5	2	7	06:45-07:00	2	10	12	12:45-01:00	14	10	24	06:45-07:00	21	16	37
01:00-01:15	3	0	3	07:00-07:15	1	9	10	01:00-01:15	26	13	39	07:00-07:15	15	6	21
01:15-01:30	1	1	2	07:15-07:30	8	2	10	01:15-01:30	20	9	29	07:15-07:30	12	10	22
01:30-01:45	3	0	3	07:30-07:45	4	19	23	01:30-01:45	18	17	35	07:30-07:45	15	6	21
01:45-02:00	1	0	1	07:45-08:00	5	19	24	01:45-02:00	20	21	41	07:45-08:00	10	6	16
02:00-02:15	4	0	4	08:00-08:15	4	22	26	02:00-02:15	15	19	34	08:00-08:15	11	9	20
02:15-02:30	0	0	0	08:15-08:30	10	15	25	02:15-02:30	17	20	37	08:15-08:30	16	5	21
02:30-02:45	0	1	1	08:30-08:45	13	16	29	02:30-02:45	18	19	37	08:30-08:45	9	4	13
02:45-03:00	1	0	1	08:45-09:00	6	21	27	02:45-03:00	20	21	41	08:45-09:00	12	7	19
03:00-03:15	3	2	5	09:00-09:15	11	31	42	03:00-03:15	14	9	23	09:00-09:15	8	2	10
03:15-03:30	1	0	1	09:15-09:30	9	17	26	03:15-03:30	22	14	36	09:15-09:30	9	3	12
03:30-03:45	0	1	1	09:30-09:45	15	20	35	03:30-03:45	21	14	35	09:30-09:45	11	0	11
03:45-04:00	0	1	1	09:45-10:00	12	35	47	03:45-04:00	18	18	36	09:45-10:00	7	4	11
04:00-04:15	0	0	0	10:00-10:15	18	16	34	04:00-04:15	14	18	32	10:00-10:15	1	1	2
04:15-04:30	0	0	0	10:15-10:30	19	26	45	04:15-04:30	19	11	30	10:15-10:30	3	4	7
04:30-04:45	2	0	2	10:30-10:45	18	17	35	04:30-04:45	18	16	34	10:30-10:45	4	2	6
04:45-05:00	1	4	5	10:45-11:00	6	19	25	04:45-05:00	19	14	33	10:45-11:00	7	2	9
05:00-05:15	0	0	0	11:00-11:15	22	16	38	05:00-05:15	16	10	26	11:00-11:15	4	2	6
05:15-05:30	0	2	2	11:15-11:30	19	21	40	05:15-05:30	20	21	41	11:15-11:30	2	0	2
05:30-05:45	1	4	5	11:30-11:45	19	17	36	05:30-05:45	25	16	41	11:30-11:45	2	3	5
05:45-06:00	0	5	5	11:45-12:00	25	17	42	05:45-06:00	28	15	43	11:45-12:00	4	0	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM			PM - PEAK HR TIME	05:15 PM to 06:15 PM		
AM - PEAK HR VOLUME	33	74	107	PM - PEAK HR VOLUME	90	74	164
AM - K FACTOR (%)			5.50	PM - K FACTOR (%)			8.43
AM - D (%)	30.84	69.16	100.00	PM - D (%)	54.88	45.12	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:30 AM to 08:30 AM		PM - PEAK HR TIME	05:15 PM to 06:15 PM	05:15 PM to 06:15 PM	
AM - PEAK HR VOLUME	33	75		PM - PEAK HR VOLUME	90	74	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:30 AM to 10:30 AM			PM - PEAK HR TIME	05:15 PM to 06:15 PM		
AM - PEAK HR VOLUME	64	97	161	PM - PEAK HR VOLUME	90	74	164
AM - K FACTOR (%)			8.27	PM - K FACTOR (%)			8.43
AM - D (%)	39.75	60.25	100.00	PM - D (%)	54.88	45.12	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	251	407	658
PEAK HR TIME	09:30 AM to 10:30 AM			AM 12-HR PERIOD (00:00-12:00)	293	436	729
PEAK HR VOLUME	64	97	161	PM 6-HR PERIOD (12:00-18:00)	464	377	841
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	701	516	1,217
PEAK HR TIME	11:45 AM to 12:45 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	994	952	1,946
PEAK HR VOLUME	87	103		D (%)	51.08	48.92	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/18/2014															
12:00-12:15	11	2	13	06:00-06:15	3	6	9	12:00-12:15	22	27	49	06:00-06:15	25	32	57
12:15-12:30	3	2	5	06:15-06:30	2	7	9	12:15-12:30	20	25	45	06:15-06:30	30	17	47
12:30-12:45	6	1	7	06:30-06:45	3	7	10	12:30-12:45	27	19	46	06:30-06:45	32	8	40
12:45-01:00	4	3	7	06:45-07:00	4	8	12	12:45-01:00	36	18	54	06:45-07:00	25	12	37
01:00-01:15	3	0	3	07:00-07:15	5	9	14	01:00-01:15	23	24	47	07:00-07:15	21	5	26
01:15-01:30	5	2	7	07:15-07:30	4	13	17	01:15-01:30	24	19	43	07:15-07:30	18	11	29
01:30-01:45	0	2	2	07:30-07:45	7	28	35	01:30-01:45	22	20	42	07:30-07:45	9	8	17
01:45-02:00	2	0	2	07:45-08:00	8	12	20	01:45-02:00	17	23	40	07:45-08:00	12	11	23
02:00-02:15	0	0	0	08:00-08:15	8	24	32	02:00-02:15	33	15	48	08:00-08:15	12	10	22
02:15-02:30	2	0	2	08:15-08:30	14	19	33	02:15-02:30	27	16	43	08:15-08:30	11	14	25
02:30-02:45	0	1	1	08:30-08:45	10	21	31	02:30-02:45	22	23	45	08:30-08:45	20	8	28
02:45-03:00	0	0	0	08:45-09:00	13	30	43	02:45-03:00	32	21	53	08:45-09:00	11	6	17
03:00-03:15	3	0	3	09:00-09:15	12	21	33	03:00-03:15	30	19	49	09:00-09:15	15	7	22
03:15-03:30	1	0	1	09:15-09:30	15	27	42	03:15-03:30	30	24	54	09:15-09:30	8	3	11
03:30-03:45	0	0	0	09:30-09:45	10	29	39	03:30-03:45	38	30	68	09:30-09:45	17	10	27
03:45-04:00	0	0	0	09:45-10:00	26	35	61	03:45-04:00	33	17	50	09:45-10:00	10	5	15
04:00-04:15	0	0	0	10:00-10:15	18	23	41	04:00-04:15	26	25	51	10:00-10:15	8	8	16
04:15-04:30	0	2	2	10:15-10:30	20	34	54	04:15-04:30	27	15	42	10:15-10:30	13	13	26
04:30-04:45	4	3	7	10:30-10:45	14	24	38	04:30-04:45	15	26	41	10:30-10:45	5	13	18
04:45-05:00	1	6	7	10:45-11:00	21	24	45	04:45-05:00	12	16	28	10:45-11:00	14	4	18
05:00-05:15	1	1	2	11:00-11:15	19	19	38	05:00-05:15	33	24	57	11:00-11:15	3	13	16
05:15-05:30	0	3	3	11:15-11:30	24	35	59	05:15-05:30	22	20	42	11:15-11:30	4	6	10
05:30-05:45	3	4	7	11:30-11:45	25	30	55	05:30-05:45	19	19	38	11:30-11:45	7	3	10
05:45-06:00	0	4	4	11:45-12:00	20	18	38	05:45-06:00	39	20	59	11:45-12:00	4	1	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM			PM - PEAK HR TIME	03:15 PM to 04:15 PM		
AM - PEAK HR VOLUME	45	94	139	PM - PEAK HR VOLUME	127	96	223
AM - K FACTOR (%)			5.37	PM - K FACTOR (%)			8.61
AM - D (%)	32.37	67.63	100.00	PM - D (%)	56.95	43.05	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	03:00 PM to 04:00 PM	03:15 PM to 04:15 PM	
AM - PEAK HR VOLUME	45	94		PM - PEAK HR VOLUME	131	96	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	10:45 AM to 11:45 AM			PM - PEAK HR TIME	02:45 PM to 03:45 PM		
AM - PEAK HR VOLUME	89	108	197	PM - PEAK HR VOLUME	130	94	224
AM - K FACTOR (%)			7.61	PM - K FACTOR (%)			8.65
AM - D (%)	45.18	54.82	100.00	PM - D (%)	58.04	41.96	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	305	503	808
PEAK HR TIME	11:15 AM to 12:15 PM			AM 12-HR PERIOD (00:00-12:00)	354	539	893
PEAK HR VOLUME	91	110	201	PM 6-HR PERIOD (12:00-18:00)	629	505	1,134
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	963	733	1,696
PEAK HR TIME	02:00 PM to 03:00 PM	09:30 AM to 10:30 AM		24 HOUR PERIOD	1,317	1,272	2,589
PEAK HR VOLUME	114	121		D (%)	50.87	49.13	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/21/2014															
12:00-12:15	4	1	5	06:00-06:15	6	20	26	12:00-12:15	19	29	48	06:00-06:15	34	15	49
12:15-12:30	3	1	4	06:15-06:30	8	21	29	12:15-12:30	11	24	35	06:15-06:30	47	17	64
12:30-12:45	5	0	5	06:30-06:45	8	21	29	12:30-12:45	32	23	55	06:30-06:45	53	24	77
12:45-01:00	2	1	3	06:45-07:00	16	29	45	12:45-01:00	33	31	64	06:45-07:00	46	22	68
01:00-01:15	2	1	3	07:00-07:15	10	37	47	01:00-01:15	26	32	58	07:00-07:15	30	13	43
01:15-01:30	2	0	2	07:15-07:30	13	34	47	01:15-01:30	44	27	71	07:15-07:30	24	8	32
01:30-01:45	1	0	1	07:30-07:45	7	67	74	01:30-01:45	28	36	64	07:30-07:45	21	11	32
01:45-02:00	0	0	0	07:45-08:00	28	42	70	01:45-02:00	27	22	49	07:45-08:00	25	8	33
02:00-02:15	0	0	0	08:00-08:15	26	32	58	02:00-02:15	30	21	51	08:00-08:15	10	8	18
02:15-02:30	0	0	0	08:15-08:30	26	37	63	02:15-02:30	29	19	48	08:15-08:30	16	8	24
02:30-02:45	0	0	0	08:30-08:45	13	41	54	02:30-02:45	25	28	53	08:30-08:45	18	10	28
02:45-03:00	0	0	0	08:45-09:00	16	50	66	02:45-03:00	36	20	56	08:45-09:00	15	8	23
03:00-03:15	0	1	1	09:00-09:15	28	36	64	03:00-03:15	27	21	48	09:00-09:15	20	1	21
03:15-03:30	0	0	0	09:15-09:30	18	29	47	03:15-03:30	23	24	47	09:15-09:30	13	6	19
03:30-03:45	0	1	1	09:30-09:45	20	31	51	03:30-03:45	38	40	78	09:30-09:45	26	4	30
03:45-04:00	0	1	1	09:45-10:00	25	30	55	03:45-04:00	37	23	60	09:45-10:00	17	4	21
04:00-04:15	1	4	5	10:00-10:15	10	32	42	04:00-04:15	26	28	54	10:00-10:15	10	3	13
04:15-04:30	0	2	2	10:15-10:30	12	28	40	04:15-04:30	35	25	60	10:15-10:30	13	2	15
04:30-04:45	1	4	5	10:30-10:45	20	20	40	04:30-04:45	39	24	63	10:30-10:45	9	1	10
04:45-05:00	0	8	8	10:45-11:00	20	20	40	04:45-05:00	35	27	62	10:45-11:00	3	4	7
05:00-05:15	0	9	9	11:00-11:15	18	24	42	05:00-05:15	38	28	66	11:00-11:15	9	2	11
05:15-05:30	0	14	14	11:15-11:30	20	26	46	05:15-05:30	33	28	61	11:15-11:30	1	2	3
05:30-05:45	1	19	20	11:30-11:45	22	22	44	05:30-05:45	43	23	66	11:30-11:45	3	1	4
05:45-06:00	2	17	19	11:45-12:00	25	22	47	05:45-06:00	46	15	61	11:45-12:00	3	1	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	06:00 PM to 07:00 PM		
AM - PEAK HR VOLUME	87	178	265	PM - PEAK HR VOLUME	180	78	258
AM - K FACTOR (%)			8.03	PM - K FACTOR (%)			7.82
AM - D (%)	32.83	67.17	100.00	PM - D (%)	69.77	30.23	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	05:45 PM to 06:45 PM	03:30 PM to 04:30 PM	
AM - PEAK HR VOLUME	93	180		PM - PEAK HR VOLUME	180	116	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	06:00 PM to 07:00 PM		
AM - PEAK HR VOLUME	87	178	265	PM - PEAK HR VOLUME	180	78	258
AM - K FACTOR (%)			8.03	PM - K FACTOR (%)			7.82
AM - D (%)	32.83	67.17	100.00	PM - D (%)	69.77	30.23	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	415	751	1,166
PEAK HR TIME	12:45 PM to 01:45 PM			AM 12-HR PERIOD (00:00-12:00)	439	835	1,274
PEAK HR VOLUME	131	126	257	PM 6-HR PERIOD (12:00-18:00)	760	618	1,378
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,226	801	2,027
PEAK HR TIME	12:30 PM to 01:30 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,665	1,636	3,301
PEAK HR VOLUME	135	126		D (%)	50.44	49.56	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/20/2014															
12:00-12:15	1	0	1	06:00-06:15	5	21	26	12:00-12:15	23	28	51	06:00-06:15	48	16	64
12:15-12:30	2	1	3	06:15-06:30	6	22	28	12:15-12:30	24	24	48	06:15-06:30	41	18	59
12:30-12:45	1	0	1	06:30-06:45	9	28	37	12:30-12:45	21	22	43	06:30-06:45	44	18	62
12:45-01:00	1	0	1	06:45-07:00	13	28	41	12:45-01:00	21	31	52	06:45-07:00	41	15	56
01:00-01:15	1	0	1	07:00-07:15	8	30	38	01:00-01:15	21	27	48	07:00-07:15	34	13	47
01:15-01:30	0	0	0	07:15-07:30	7	60	67	01:15-01:30	28	14	42	07:15-07:30	27	8	35
01:30-01:45	2	0	2	07:30-07:45	13	54	67	01:30-01:45	26	19	45	07:30-07:45	15	8	23
01:45-02:00	0	0	0	07:45-08:00	31	46	77	01:45-02:00	24	13	37	07:45-08:00	23	6	29
02:00-02:15	0	0	0	08:00-08:15	25	29	54	02:00-02:15	27	20	47	08:00-08:15	11	8	19
02:15-02:30	0	0	0	08:15-08:30	8	24	32	02:15-02:30	31	25	56	08:15-08:30	12	8	20
02:30-02:45	0	1	1	08:30-08:45	14	24	38	02:30-02:45	29	21	50	08:30-08:45	11	3	14
02:45-03:00	0	0	0	08:45-09:00	19	40	59	02:45-03:00	15	24	39	08:45-09:00	14	7	21
03:00-03:15	1	3	4	09:00-09:15	11	25	36	03:00-03:15	43	27	70	09:00-09:15	11	4	15
03:15-03:30	1	0	1	09:15-09:30	25	29	54	03:15-03:30	29	27	56	09:15-09:30	8	7	15
03:30-03:45	0	1	1	09:30-09:45	23	24	47	03:30-03:45	24	34	58	09:30-09:45	15	1	16
03:45-04:00	0	1	1	09:45-10:00	14	21	35	03:45-04:00	25	22	47	09:45-10:00	9	3	12
04:00-04:15	0	1	1	10:00-10:15	24	24	48	04:00-04:15	28	23	51	10:00-10:15	23	3	26
04:15-04:30	1	4	5	10:15-10:30	12	22	34	04:15-04:30	41	21	62	10:15-10:30	10	2	12
04:30-04:45	0	4	4	10:30-10:45	23	29	52	04:30-04:45	33	36	69	10:30-10:45	11	1	12
04:45-05:00	1	7	8	10:45-11:00	17	30	47	04:45-05:00	34	20	54	10:45-11:00	13	2	15
05:00-05:15	0	8	8	11:00-11:15	24	15	39	05:00-05:15	36	26	62	11:00-11:15	2	0	2
05:15-05:30	1	6	7	11:15-11:30	18	24	42	05:15-05:30	37	22	59	11:15-11:30	4	0	4
05:30-05:45	0	15	15	11:30-11:45	27	20	47	05:30-05:45	30	23	53	11:30-11:45	3	1	4
05:45-06:00	2	19	21	11:45-12:00	19	22	41	05:45-06:00	30	16	46	11:45-12:00	3	0	3

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	76	189	265	PM - PEAK HR VOLUME	144	103	247
AM - K FACTOR (%)			8.83	PM - K FACTOR (%)			8.23
AM - D (%)	28.68	71.32	100.00	PM - D (%)	58.30	41.70	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	06:00 PM to 07:00 PM	03:00 PM to 04:00 PM	
AM - PEAK HR VOLUME	78	190		PM - PEAK HR VOLUME	174	110	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	76	189	265	PM - PEAK HR VOLUME	144	103	247
AM - K FACTOR (%)			8.83	PM - K FACTOR (%)			8.23
AM - D (%)	28.68	71.32	100.00	PM - D (%)	58.30	41.70	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	395	691	1,086
PEAK HR TIME	12:00 PM to 01:00 PM			AM 12-HR PERIOD (00:00-12:00)	410	762	1,172
PEAK HR VOLUME	89	105	194	PM 6-HR PERIOD (12:00-18:00)	680	565	1,245
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,113	717	1,830
PEAK HR TIME	01:45 PM to 02:45 PM	10:00 AM to 11:00 AM		24 HOUR PERIOD	1,523	1,479	3,002
PEAK HR VOLUME	111	105		D (%)	50.73	49.27	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/23/2014															
12:00-12:15	2	0	2	06:00-06:15	4	26	30	12:00-12:15	22	24	46	06:00-06:15	35	24	59
12:15-12:30	3	0	3	06:15-06:30	6	21	27	12:15-12:30	24	16	40	06:15-06:30	45	17	62
12:30-12:45	6	1	7	06:30-06:45	10	18	28	12:30-12:45	25	22	47	06:30-06:45	38	16	54
12:45-01:00	3	0	3	06:45-07:00	10	39	49	12:45-01:00	19	33	52	06:45-07:00	39	18	57
01:00-01:15	3	0	3	07:00-07:15	7	33	40	01:00-01:15	28	30	58	07:00-07:15	43	14	57
01:15-01:30	0	0	0	07:15-07:30	13	40	53	01:15-01:30	33	19	52	07:15-07:30	28	12	40
01:30-01:45	1	0	1	07:30-07:45	16	68	84	01:30-01:45	27	25	52	07:30-07:45	26	10	36
01:45-02:00	0	1	1	07:45-08:00	26	52	78	01:45-02:00	17	20	37	07:45-08:00	26	4	30
02:00-02:15	0	0	0	08:00-08:15	30	28	58	02:00-02:15	28	17	45	08:00-08:15	16	6	22
02:15-02:30	0	0	0	08:15-08:30	13	22	35	02:15-02:30	19	19	38	08:15-08:30	18	5	23
02:30-02:45	0	1	1	08:30-08:45	25	26	51	02:30-02:45	29	18	47	08:30-08:45	15	7	22
02:45-03:00	0	0	0	08:45-09:00	32	46	78	02:45-03:00	33	27	60	08:45-09:00	19	6	25
03:00-03:15	1	0	1	09:00-09:15	30	34	64	03:00-03:15	23	24	47	09:00-09:15	16	4	20
03:15-03:30	0	2	2	09:15-09:30	12	37	49	03:15-03:30	31	23	54	09:15-09:30	15	2	17
03:30-03:45	2	0	2	09:30-09:45	19	40	59	03:30-03:45	26	32	58	09:30-09:45	18	5	23
03:45-04:00	0	2	2	09:45-10:00	14	24	38	03:45-04:00	34	19	53	09:45-10:00	17	4	21
04:00-04:15	3	1	4	10:00-10:15	18	27	45	04:00-04:15	29	30	59	10:00-10:15	16	4	20
04:15-04:30	1	3	4	10:15-10:30	13	30	43	04:15-04:30	48	20	68	10:15-10:30	10	6	16
04:30-04:45	0	7	7	10:30-10:45	17	25	42	04:30-04:45	37	48	85	10:30-10:45	6	2	8
04:45-05:00	2	9	11	10:45-11:00	20	23	43	04:45-05:00	38	23	61	10:45-11:00	7	2	9
05:00-05:15	0	9	9	11:00-11:15	25	23	48	05:00-05:15	40	33	73	11:00-11:15	8	1	9
05:15-05:30	1	9	10	11:15-11:30	19	19	38	05:15-05:30	42	21	63	11:15-11:30	4	1	5
05:30-05:45	0	12	12	11:30-11:45	27	22	49	05:30-05:45	37	27	64	11:30-11:45	12	3	15
05:45-06:00	3	18	21	11:45-12:00	32	33	65	05:45-06:00	44	29	73	11:45-12:00	5	4	9

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	85	188	273	PM - PEAK HR VOLUME	163	124	287
AM - K FACTOR (%)			8.30	PM - K FACTOR (%)			8.72
AM - D (%)	31.14	68.86	100.00	PM - D (%)	56.79	43.21	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	04:15 PM to 05:15 PM	04:30 PM to 05:30 PM	
AM - PEAK HR VOLUME	100	193		PM - PEAK HR VOLUME	163	125	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:15 PM to 05:15 PM		
AM - PEAK HR VOLUME	85	188	273	PM - PEAK HR VOLUME	163	124	287
AM - K FACTOR (%)			8.30	PM - K FACTOR (%)			8.72
AM - D (%)	31.14	68.86	100.00	PM - D (%)	56.79	43.21	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	438	756	1,194
PEAK HR TIME	12:45 PM to 01:45 PM			AM 12-HR PERIOD (00:00-12:00)	469	831	1,300
PEAK HR VOLUME	107	107	214	PM 6-HR PERIOD (12:00-18:00)	733	599	1,332
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,215	776	1,991
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,684	1,607	3,291
PEAK HR VOLUME	109	135		D (%)	51.17	48.83	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/22/2014															
12:00-12:15	5	2	7	06:00-06:15	0	23	23	12:00-12:15	23	18	41	06:00-06:15	42	25	67
12:15-12:30	3	0	3	06:15-06:30	7	19	26	12:15-12:30	25	20	45	06:15-06:30	43	21	64
12:30-12:45	6	1	7	06:30-06:45	7	17	24	12:30-12:45	21	19	40	06:30-06:45	38	19	57
12:45-01:00	4	3	7	06:45-07:00	10	28	38	12:45-01:00	26	18	44	06:45-07:00	42	12	54
01:00-01:15	1	1	2	07:00-07:15	12	33	45	01:00-01:15	26	29	55	07:00-07:15	25	15	40
01:15-01:30	0	0	0	07:15-07:30	8	28	36	01:15-01:30	21	28	49	07:15-07:30	21	10	31
01:30-01:45	2	0	2	07:30-07:45	6	24	30	01:30-01:45	29	20	49	07:30-07:45	23	13	36
01:45-02:00	1	0	1	07:45-08:00	30	36	66	01:45-02:00	19	14	33	07:45-08:00	22	15	37
02:00-02:15	0	0	0	08:00-08:15	12	37	49	02:00-02:15	29	14	43	08:00-08:15	15	7	22
02:15-02:30	2	0	2	08:15-08:30	17	26	43	02:15-02:30	19	32	51	08:15-08:30	17	10	27
02:30-02:45	1	0	1	08:30-08:45	10	40	50	02:30-02:45	21	29	50	08:30-08:45	17	9	26
02:45-03:00	2	1	3	08:45-09:00	20	39	59	02:45-03:00	32	18	50	08:45-09:00	15	7	22
03:00-03:15	0	0	0	09:00-09:15	18	34	52	03:00-03:15	20	24	44	09:00-09:15	23	5	28
03:15-03:30	0	1	1	09:15-09:30	13	28	41	03:15-03:30	32	18	50	09:15-09:30	15	3	18
03:30-03:45	1	1	2	09:30-09:45	18	27	45	03:30-03:45	32	17	49	09:30-09:45	11	5	16
03:45-04:00	1	2	3	09:45-10:00	18	36	54	03:45-04:00	23	16	39	09:45-10:00	8	2	10
04:00-04:15	0	1	1	10:00-10:15	22	26	48	04:00-04:15	48	17	65	10:00-10:15	12	1	13
04:15-04:30	1	1	2	10:15-10:30	19	29	48	04:15-04:30	37	18	55	10:15-10:30	3	4	7
04:30-04:45	1	9	10	10:30-10:45	20	23	43	04:30-04:45	32	38	70	10:30-10:45	11	4	15
04:45-05:00	0	8	8	10:45-11:00	20	25	45	04:45-05:00	26	27	53	10:45-11:00	6	3	9
05:00-05:15	0	11	11	11:00-11:15	23	23	46	05:00-05:15	50	18	68	11:00-11:15	10	3	13
05:15-05:30	2	11	13	11:15-11:30	20	28	48	05:15-05:30	27	19	46	11:15-11:30	3	1	4
05:30-05:45	1	9	10	11:30-11:45	23	19	42	05:30-05:45	35	17	52	11:30-11:45	3	2	5
05:45-06:00	2	13	15	11:45-12:00	17	32	49	05:45-06:00	30	30	60	11:45-12:00	4	0	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM			PM - PEAK HR TIME	05:45 PM to 06:45 PM		
AM - PEAK HR VOLUME	69	139	208	PM - PEAK HR VOLUME	153	95	248
AM - K FACTOR (%)			6.96	PM - K FACTOR (%)			8.30
AM - D (%)	33.17	66.83	100.00	PM - D (%)	61.69	38.31	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:30 PM to 05:30 PM	
AM - PEAK HR VOLUME	69	142		PM - PEAK HR VOLUME	165	102	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM			PM - PEAK HR TIME	05:45 PM to 06:45 PM		
AM - PEAK HR VOLUME	69	139	208	PM - PEAK HR VOLUME	153	95	248
AM - K FACTOR (%)			6.96	PM - K FACTOR (%)			8.30
AM - D (%)	33.17	66.83	100.00	PM - D (%)	61.69	38.31	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	370	680	1,050
PEAK HR TIME	12:45 PM to 01:45 PM			AM 12-HR PERIOD (00:00-12:00)	406	755	1,161
PEAK HR VOLUME	102	95	197	PM 6-HR PERIOD (12:00-18:00)	683	518	1,201
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,112	714	1,826
PEAK HR TIME	12:45 PM to 01:45 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,518	1,469	2,987
PEAK HR VOLUME	102	125		D (%)	50.82	49.18	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/25/2014															
12:00-12:15	6	1	7	06:00-06:15	1	7	8	12:00-12:15	24	22	46	06:00-06:15	42	19	61
12:15-12:30	1	0	1	06:15-06:30	4	8	12	12:15-12:30	29	21	50	06:15-06:30	26	24	50
12:30-12:45	2	1	3	06:30-06:45	2	13	15	12:30-12:45	29	24	53	06:30-06:45	43	24	67
12:45-01:00	5	2	7	06:45-07:00	5	18	23	12:45-01:00	17	26	43	06:45-07:00	41	9	50
01:00-01:15	5	2	7	07:00-07:15	10	21	31	01:00-01:15	29	19	48	07:00-07:15	36	17	53
01:15-01:30	1	1	2	07:15-07:30	8	36	44	01:15-01:30	39	17	56	07:15-07:30	16	7	23
01:30-01:45	1	1	2	07:30-07:45	15	36	51	01:30-01:45	30	31	61	07:30-07:45	13	21	34
01:45-02:00	0	0	0	07:45-08:00	17	23	40	01:45-02:00	54	26	80	07:45-08:00	25	14	39
02:00-02:15	3	1	4	08:00-08:15	13	23	36	02:00-02:15	43	26	69	08:00-08:15	25	13	38
02:15-02:30	1	1	2	08:15-08:30	16	28	44	02:15-02:30	13	18	31	08:15-08:30	10	21	31
02:30-02:45	1	0	1	08:30-08:45	17	31	48	02:30-02:45	27	19	46	08:30-08:45	14	10	24
02:45-03:00	2	0	2	08:45-09:00	19	39	58	02:45-03:00	34	21	55	08:45-09:00	7	14	21
03:00-03:15	1	0	1	09:00-09:15	19	27	46	03:00-03:15	24	24	48	09:00-09:15	19	15	34
03:15-03:30	0	1	1	09:15-09:30	17	25	42	03:15-03:30	19	21	40	09:15-09:30	18	14	32
03:30-03:45	1	0	1	09:30-09:45	17	39	56	03:30-03:45	19	29	48	09:30-09:45	16	13	29
03:45-04:00	2	0	2	09:45-10:00	21	21	42	03:45-04:00	32	19	51	09:45-10:00	15	8	23
04:00-04:15	0	1	1	10:00-10:15	23	38	61	04:00-04:15	31	35	66	10:00-10:15	17	6	23
04:15-04:30	0	4	4	10:15-10:30	29	28	57	04:15-04:30	27	23	50	10:15-10:30	14	15	29
04:30-04:45	0	2	2	10:30-10:45	33	31	64	04:30-04:45	21	34	55	10:30-10:45	23	9	32
04:45-05:00	0	4	4	10:45-11:00	28	30	58	04:45-05:00	26	22	48	10:45-11:00	10	8	18
05:00-05:15	1	0	1	11:00-11:15	17	23	40	05:00-05:15	31	35	66	11:00-11:15	17	7	24
05:15-05:30	1	2	3	11:15-11:30	20	25	45	05:15-05:30	25	31	56	11:15-11:30	9	1	10
05:30-05:45	3	7	10	11:30-11:45	25	33	58	05:30-05:45	32	24	56	11:30-11:45	8	5	13
05:45-06:00	3	5	8	11:45-12:00	26	26	52	05:45-06:00	26	17	43	11:45-12:00	7	4	11

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	65	121	186
AM - K FACTOR (%)			5.92
AM - D (%)	34.95	65.05	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	65	121	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM		
PM - PEAK HR VOLUME	152	76	228
PM - K FACTOR (%)			7.26
PM - D (%)	66.67	33.33	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:30 PM to 05:30 PM	
PM - PEAK HR VOLUME	152	122	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	10:00 AM to 11:00 AM		
AM - PEAK HR VOLUME	113	127	240
AM - K FACTOR (%)			7.64
AM - D (%)	47.08	52.92	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	01:15 PM to 02:15 PM		
PM - PEAK HR VOLUME	166	100	266
PM - K FACTOR (%)			8.47
PM - D (%)	62.41	37.59	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM		
PEAK HR VOLUME	166	100	266
DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM	10:00 AM to 11:00 AM	
PEAK HR VOLUME	166	127	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	402	629	1,031
AM 12-HR PERIOD (00:00-12:00)	442	665	1,107
PM 6-HR PERIOD (12:00-18:00)	681	584	1,265
PM 12-HR PERIOD (12:00-24:00)	1,152	882	2,034
24 HOUR PERIOD	1,594	1,547	3,141
D (%)	50.75	49.25	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/24/2014															
12:00-12:15	6	1	7	06:00-06:15	6	19	25	12:00-12:15	17	17	34	06:00-06:15	40	21	61
12:15-12:30	3	1	4	06:15-06:30	5	23	28	12:15-12:30	23	25	48	06:15-06:30	44	18	62
12:30-12:45	0	1	1	06:30-06:45	8	18	26	12:30-12:45	23	19	42	06:30-06:45	55	15	70
12:45-01:00	3	0	3	06:45-07:00	11	30	41	12:45-01:00	20	30	50	06:45-07:00	37	13	50
01:00-01:15	2	1	3	07:00-07:15	12	36	48	01:00-01:15	32	20	52	07:00-07:15	24	18	42
01:15-01:30	0	0	0	07:15-07:30	15	38	53	01:15-01:30	31	23	54	07:15-07:30	33	10	43
01:30-01:45	4	1	5	07:30-07:45	7	56	63	01:30-01:45	22	23	45	07:30-07:45	31	8	39
01:45-02:00	2	0	2	07:45-08:00	34	49	83	01:45-02:00	31	25	56	07:45-08:00	22	5	27
02:00-02:15	0	0	0	08:00-08:15	18	33	51	02:00-02:15	24	27	51	08:00-08:15	26	8	34
02:15-02:30	0	0	0	08:15-08:30	20	25	45	02:15-02:30	22	30	52	08:15-08:30	26	6	32
02:30-02:45	0	1	1	08:30-08:45	27	32	59	02:30-02:45	40	19	59	08:30-08:45	17	8	25
02:45-03:00	0	0	0	08:45-09:00	31	45	76	02:45-03:00	32	23	55	08:45-09:00	11	8	19
03:00-03:15	0	0	0	09:00-09:15	25	46	71	03:00-03:15	27	31	58	09:00-09:15	19	5	24
03:15-03:30	1	0	1	09:15-09:30	18	27	45	03:15-03:30	30	18	48	09:15-09:30	17	6	23
03:30-03:45	2	2	4	09:30-09:45	19	39	58	03:30-03:45	11	23	34	09:30-09:45	16	4	20
03:45-04:00	1	0	1	09:45-10:00	15	26	41	03:45-04:00	40	24	64	09:45-10:00	14	2	16
04:00-04:15	0	3	3	10:00-10:15	21	30	51	04:00-04:15	37	35	72	10:00-10:15	11	1	12
04:15-04:30	0	6	6	10:15-10:30	24	23	47	04:15-04:30	39	27	66	10:15-10:30	9	2	11
04:30-04:45	1	6	7	10:30-10:45	22	30	52	04:30-04:45	40	24	64	10:30-10:45	5	0	5
04:45-05:00	1	8	9	10:45-11:00	21	21	42	04:45-05:00	27	35	62	10:45-11:00	10	4	14
05:00-05:15	0	15	15	11:00-11:15	12	17	29	05:00-05:15	37	26	63	11:00-11:15	12	1	13
05:15-05:30	0	13	13	11:15-11:30	13	19	32	05:15-05:30	38	17	55	11:15-11:30	1	0	1
05:30-05:45	0	17	17	11:30-11:45	18	22	40	05:30-05:45	36	21	57	11:30-11:45	2	0	2
05:45-06:00	1	19	20	11:45-12:00	23	27	50	05:45-06:00	40	29	69	11:45-12:00	5	1	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	74	176	250
AM - K FACTOR (%)			7.72
AM - D (%)	29.60	70.40	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	99	179	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	156	110	266
PM - K FACTOR (%)			8.21
PM - D (%)	58.65	41.35	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	179	121	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:15 AM to 09:15 AM		
AM - PEAK HR VOLUME	103	148	251
AM - K FACTOR (%)			7.75
AM - D (%)	41.04	58.96	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	156	110	266
PM - K FACTOR (%)			8.21
PM - D (%)	58.65	41.35	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	117	101	218
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	118	138	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	425	731	1,156
AM 12-HR PERIOD (00:00-12:00)	452	826	1,278
PM 6-HR PERIOD (12:00-18:00)	719	591	1,310
PM 12-HR PERIOD (12:00-24:00)	1,206	755	1,961
24 HOUR PERIOD	1,658	1,581	3,239
D (%)	51.19	48.81	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/27/2014															
12:00-12:15	4	1	5	06:00-06:15	1	16	17	12:00-12:15	24	24	48	06:00-06:15	33	19	52
12:15-12:30	0	0	0	06:15-06:30	7	18	25	12:15-12:30	23	16	39	06:15-06:30	51	14	65
12:30-12:45	1	1	2	06:30-06:45	10	22	32	12:30-12:45	24	23	47	06:30-06:45	48	15	63
12:45-01:00	0	1	1	06:45-07:00	7	28	35	12:45-01:00	16	26	42	06:45-07:00	39	9	48
01:00-01:15	4	1	5	07:00-07:15	11	35	46	01:00-01:15	14	30	44	07:00-07:15	23	8	31
01:15-01:30	0	0	0	07:15-07:30	12	41	53	01:15-01:30	43	18	61	07:15-07:30	24	11	35
01:30-01:45	0	0	0	07:30-07:45	9	64	73	01:30-01:45	34	17	51	07:30-07:45	16	7	23
01:45-02:00	1	0	1	07:45-08:00	25	38	63	01:45-02:00	28	26	54	07:45-08:00	27	14	41
02:00-02:15	0	0	0	08:00-08:15	25	28	53	02:00-02:15	31	18	49	08:00-08:15	17	7	24
02:15-02:30	0	0	0	08:15-08:30	12	37	49	02:15-02:30	28	13	41	08:15-08:30	11	6	17
02:30-02:45	0	0	0	08:30-08:45	11	39	50	02:30-02:45	19	21	40	08:30-08:45	23	7	30
02:45-03:00	2	0	2	08:45-09:00	12	31	43	02:45-03:00	22	20	42	08:45-09:00	18	5	23
03:00-03:15	0	1	1	09:00-09:15	20	30	50	03:00-03:15	21	17	38	09:00-09:15	18	9	27
03:15-03:30	0	0	0	09:15-09:30	18	26	44	03:15-03:30	23	24	47	09:15-09:30	11	9	20
03:30-03:45	0	0	0	09:30-09:45	20	29	49	03:30-03:45	26	22	48	09:30-09:45	8	3	11
03:45-04:00	1	1	2	09:45-10:00	15	24	39	03:45-04:00	32	35	67	09:45-10:00	13	3	16
04:00-04:15	0	2	2	10:00-10:15	16	21	37	04:00-04:15	40	23	63	10:00-10:15	8	2	10
04:15-04:30	0	5	5	10:15-10:30	17	23	40	04:15-04:30	37	24	61	10:15-10:30	15	4	19
04:30-04:45	1	7	8	10:30-10:45	24	23	47	04:30-04:45	47	34	81	10:30-10:45	3	5	8
04:45-05:00	0	7	7	10:45-11:00	19	24	43	04:45-05:00	31	34	65	10:45-11:00	11	2	13
05:00-05:15	0	9	9	11:00-11:15	21	15	36	05:00-05:15	32	26	58	11:00-11:15	4	1	5
05:15-05:30	2	15	17	11:15-11:30	20	18	38	05:15-05:30	32	20	52	11:15-11:30	6	1	7
05:30-05:45	1	15	16	11:30-11:45	18	17	35	05:30-05:45	32	23	55	11:30-11:45	1	1	2
05:45-06:00	2	18	20	11:45-12:00	20	23	43	05:45-06:00	36	24	60	11:45-12:00	2	0	2

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	71	171	242
AM - K FACTOR (%)			8.10
AM - D (%)	29.34	70.66	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	73	178	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	156	116	272
PM - K FACTOR (%)			9.10
PM - D (%)	57.35	42.65	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	171	118	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	71	171	242
AM - K FACTOR (%)			8.10
AM - D (%)	29.34	70.66	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	156	116	272
PM - K FACTOR (%)			9.10
PM - D (%)	57.35	42.65	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM		
PEAK HR VOLUME	136	79	215
DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	136	109	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	370	670	1,040
AM 12-HR PERIOD (00:00-12:00)	389	754	1,143
PM 6-HR PERIOD (12:00-18:00)	695	558	1,253
PM 12-HR PERIOD (12:00-24:00)	1,125	720	1,845
24 HOUR PERIOD	1,514	1,474	2,988
D (%)	50.67	49.33	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/26/2014															
12:00-12:15	10	2	12	06:00-06:15	4	13	17	12:00-12:15	30	22	52	06:00-06:15	38	21	59
12:15-12:30	9	3	12	06:15-06:30	2	8	10	12:15-12:30	26	14	40	06:15-06:30	33	20	53
12:30-12:45	2	2	4	06:30-06:45	2	12	14	12:30-12:45	21	25	46	06:30-06:45	46	14	60
12:45-01:00	2	1	3	06:45-07:00	5	18	23	12:45-01:00	34	24	58	06:45-07:00	27	19	46
01:00-01:15	6	1	7	07:00-07:15	4	25	29	01:00-01:15	20	22	42	07:00-07:15	22	14	36
01:15-01:30	1	0	1	07:15-07:30	10	12	22	01:15-01:30	20	18	38	07:15-07:30	29	5	34
01:30-01:45	0	0	0	07:30-07:45	8	20	28	01:30-01:45	22	21	43	07:30-07:45	18	11	29
01:45-02:00	0	0	0	07:45-08:00	12	22	34	01:45-02:00	28	26	54	07:45-08:00	25	11	36
02:00-02:15	6	1	7	08:00-08:15	11	30	41	02:00-02:15	27	22	49	08:00-08:15	14	16	30
02:15-02:30	2	1	3	08:15-08:30	12	20	32	02:15-02:30	25	24	49	08:15-08:30	10	11	21
02:30-02:45	0	0	0	08:30-08:45	13	24	37	02:30-02:45	24	22	46	08:30-08:45	15	18	33
02:45-03:00	1	0	1	08:45-09:00	14	47	61	02:45-03:00	32	19	51	08:45-09:00	20	24	44
03:00-03:15	0	1	1	09:00-09:15	8	34	42	03:00-03:15	26	18	44	09:00-09:15	7	13	20
03:15-03:30	0	1	1	09:15-09:30	11	35	46	03:15-03:30	22	12	34	09:15-09:30	13	6	19
03:30-03:45	0	0	0	09:30-09:45	20	24	44	03:30-03:45	23	24	47	09:30-09:45	9	6	15
03:45-04:00	0	0	0	09:45-10:00	17	32	49	03:45-04:00	34	22	56	09:45-10:00	12	13	25
04:00-04:15	0	0	0	10:00-10:15	18	30	48	04:00-04:15	38	22	60	10:00-10:15	11	3	14
04:15-04:30	1	1	2	10:15-10:30	20	36	56	04:15-04:30	18	17	35	10:15-10:30	19	5	24
04:30-04:45	1	2	3	10:30-10:45	24	28	52	04:30-04:45	31	17	48	10:30-10:45	7	5	12
04:45-05:00	0	3	3	10:45-11:00	24	24	48	04:45-05:00	27	29	56	10:45-11:00	2	5	7
05:00-05:15	0	0	0	11:00-11:15	18	27	45	05:00-05:15	35	29	64	11:00-11:15	8	6	14
05:15-05:30	1	4	5	11:15-11:30	18	25	43	05:15-05:30	25	14	39	11:15-11:30	5	1	6
05:30-05:45	0	5	5	11:30-11:45	30	17	47	05:30-05:45	39	30	69	11:30-11:45	8	1	9
05:45-06:00	0	2	2	11:45-12:00	33	22	55	05:45-06:00	34	28	62	11:45-12:00	3	0	3

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	50	121	171
AM - K FACTOR (%)			6.05
AM - D (%)	29.24	70.76	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	50	121	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	144	99	243
PM - K FACTOR (%)			8.60
PM - D (%)	59.26	40.74	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	151	102	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:45 AM to 10:45 AM		
AM - PEAK HR VOLUME	79	126	205
AM - K FACTOR (%)			7.25
AM - D (%)	38.54	61.46	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	144	99	243
PM - K FACTOR (%)			8.60
PM - D (%)	59.26	40.74	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:45 AM to 10:45 AM		
PEAK HR VOLUME	79	126	205
DIRECTIONAL PEAK			
PEAK HR TIME	11:30 AM to 12:30 PM	09:45 AM to 10:45 AM	
PEAK HR VOLUME	119	126	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	338	585	923
AM 12-HR PERIOD (00:00-12:00)	380	615	995
PM 6-HR PERIOD (12:00-18:00)	661	521	1,182
PM 12-HR PERIOD (12:00-24:00)	1,062	769	1,831
24 HOUR PERIOD	1,442	1,384	2,826
D (%)	51.03	48.97	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/29/2014															
12:00-12:15	4	1	5	06:00-06:15	4	21	25	12:00-12:15	23	30	53	06:00-06:15	49	25	74
12:15-12:30	4	1	5	06:15-06:30	6	14	20	12:15-12:30	16	18	34	06:15-06:30	48	21	69
12:30-12:45	3	0	3	06:30-06:45	10	24	34	12:30-12:45	23	27	50	06:30-06:45	33	14	47
12:45-01:00	0	0	0	06:45-07:00	13	23	36	12:45-01:00	15	29	44	06:45-07:00	36	6	42
01:00-01:15	1	0	1	07:00-07:15	8	32	40	01:00-01:15	40	27	67	07:00-07:15	31	15	46
01:15-01:30	0	0	0	07:15-07:30	5	53	58	01:15-01:30	33	14	47	07:15-07:30	24	10	34
01:30-01:45	1	0	1	07:30-07:45	12	78	90	01:30-01:45	23	23	46	07:30-07:45	28	12	40
01:45-02:00	0	0	0	07:45-08:00	30	54	84	01:45-02:00	27	20	47	07:45-08:00	21	9	30
02:00-02:15	1	0	1	08:00-08:15	27	25	52	02:00-02:15	24	20	44	08:00-08:15	14	4	18
02:15-02:30	0	0	0	08:15-08:30	27	31	58	02:15-02:30	37	29	66	08:15-08:30	24	4	28
02:30-02:45	1	0	1	08:30-08:45	22	35	57	02:30-02:45	24	30	54	08:30-08:45	16	8	24
02:45-03:00	0	2	2	08:45-09:00	15	30	45	02:45-03:00	22	32	54	08:45-09:00	20	8	28
03:00-03:15	0	0	0	09:00-09:15	33	26	59	03:00-03:15	31	14	45	09:00-09:15	15	11	26
03:15-03:30	0	0	0	09:15-09:30	13	26	39	03:15-03:30	20	23	43	09:15-09:30	15	5	20
03:30-03:45	0	2	2	09:30-09:45	15	24	39	03:30-03:45	39	15	54	09:30-09:45	22	7	29
03:45-04:00	1	2	3	09:45-10:00	12	31	43	03:45-04:00	24	16	40	09:45-10:00	14	5	19
04:00-04:15	1	1	2	10:00-10:15	20	24	44	04:00-04:15	23	22	45	10:00-10:15	12	0	12
04:15-04:30	0	2	2	10:15-10:30	22	26	48	04:15-04:30	33	23	56	10:15-10:30	11	8	19
04:30-04:45	0	6	6	10:30-10:45	14	22	36	04:30-04:45	35	31	66	10:30-10:45	10	1	11
04:45-05:00	0	9	9	10:45-11:00	14	21	35	04:45-05:00	43	35	78	10:45-11:00	7	1	8
05:00-05:15	0	6	6	11:00-11:15	14	23	37	05:00-05:15	41	23	64	11:00-11:15	9	1	10
05:15-05:30	0	9	9	11:15-11:30	20	27	47	05:15-05:30	34	21	55	11:15-11:30	4	0	4
05:30-05:45	2	25	27	11:30-11:45	20	31	51	05:30-05:45	30	25	55	11:30-11:45	4	0	4
05:45-06:00	4	16	20	11:45-12:00	25	19	44	05:45-06:00	49	27	76	11:45-12:00	2	4	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	05:30 PM to 06:30 PM		
AM - PEAK HR VOLUME	74	210	284	PM - PEAK HR VOLUME	176	98	274
AM - K FACTOR (%)			9.00	PM - K FACTOR (%)			8.68
AM - D (%)	26.06	73.94	100.00	PM - D (%)	64.23	35.77	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:15 PM to 05:15 PM	
AM - PEAK HR VOLUME	106	217		PM - PEAK HR VOLUME	179	112	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	05:30 PM to 06:30 PM		
AM - PEAK HR VOLUME	74	210	284	PM - PEAK HR VOLUME	176	98	274
AM - K FACTOR (%)			9.00	PM - K FACTOR (%)			8.68
AM - D (%)	26.06	73.94	100.00	PM - D (%)	64.23	35.77	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	401	720	1,121
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	424	802	1,226
PEAK HR VOLUME	107	111	218	PM 6-HR PERIOD (12:00-18:00)	709	574	1,283
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,178	753	1,931
PEAK HR TIME	01:00 PM to 02:00 PM	02:00 PM to 03:00 PM		24 HOUR PERIOD	1,602	1,555	3,157
PEAK HR VOLUME	123	111		D (%)	50.74	49.26	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**

2014 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3300
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 10/28/2014															
12:00-12:15	1	0	1	06:00-06:15	1	12	13	12:00-12:15	33	25	58	06:00-06:15	45	28	73
12:15-12:30	5	1	6	06:15-06:30	7	31	38	12:15-12:30	18	28	46	06:15-06:30	33	22	55
12:30-12:45	2	2	4	06:30-06:45	8	31	39	12:30-12:45	30	21	51	06:30-06:45	37	22	59
12:45-01:00	0	1	1	06:45-07:00	16	23	39	12:45-01:00	18	34	52	06:45-07:00	36	21	57
01:00-01:15	1	0	1	07:00-07:15	8	28	36	01:00-01:15	25	17	42	07:00-07:15	33	13	46
01:15-01:30	3	0	3	07:15-07:30	8	39	47	01:15-01:30	44	25	69	07:15-07:30	30	12	42
01:30-01:45	1	0	1	07:30-07:45	7	65	72	01:30-01:45	27	29	56	07:30-07:45	30	11	41
01:45-02:00	1	0	1	07:45-08:00	30	44	74	01:45-02:00	22	19	41	07:45-08:00	20	6	26
02:00-02:15	0	0	0	08:00-08:15	24	20	44	02:00-02:15	21	15	36	08:00-08:15	22	6	28
02:15-02:30	1	0	1	08:15-08:30	18	26	44	02:15-02:30	24	21	45	08:15-08:30	20	10	30
02:30-02:45	0	0	0	08:30-08:45	20	34	54	02:30-02:45	24	22	46	08:30-08:45	23	6	29
02:45-03:00	0	0	0	08:45-09:00	17	39	56	02:45-03:00	27	17	44	08:45-09:00	17	5	22
03:00-03:15	0	0	0	09:00-09:15	13	30	43	03:00-03:15	34	22	56	09:00-09:15	17	7	24
03:15-03:30	0	0	0	09:15-09:30	10	28	38	03:15-03:30	37	23	60	09:15-09:30	17	4	21
03:30-03:45	1	1	2	09:30-09:45	15	32	47	03:30-03:45	37	32	69	09:30-09:45	16	8	24
03:45-04:00	0	0	0	09:45-10:00	17	29	46	03:45-04:00	36	24	60	09:45-10:00	8	2	10
04:00-04:15	0	5	5	10:00-10:15	17	21	38	04:00-04:15	37	24	61	10:00-10:15	17	2	19
04:15-04:30	1	3	4	10:15-10:30	16	21	37	04:15-04:30	39	27	66	10:15-10:30	9	1	10
04:30-04:45	3	11	14	10:30-10:45	18	22	40	04:30-04:45	40	34	74	10:30-10:45	9	3	12
04:45-05:00	0	10	10	10:45-11:00	13	24	37	04:45-05:00	45	22	67	10:45-11:00	6	2	8
05:00-05:15	1	9	10	11:00-11:15	16	18	34	05:00-05:15	26	31	57	11:00-11:15	5	3	8
05:15-05:30	1	17	18	11:15-11:30	24	26	50	05:15-05:30	37	29	66	11:15-11:30	1	3	4
05:30-05:45	1	12	13	11:30-11:45	16	27	43	05:30-05:45	32	17	49	11:30-11:45	5	1	6
05:45-06:00	3	15	18	11:45-12:00	18	19	37	05:45-06:00	42	27	69	11:45-12:00	0	1	1

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	69	168	237	PM - PEAK HR VOLUME	161	107	268
AM - K FACTOR (%)			7.51	PM - K FACTOR (%)			8.50
AM - D (%)	29.11	70.89	100.00	PM - D (%)	60.07	39.93	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:30 PM to 05:30 PM	
AM - PEAK HR VOLUME	92	176		PM - PEAK HR VOLUME	161	116	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	69	168	237	PM - PEAK HR VOLUME	161	107	268
AM - K FACTOR (%)			7.51	PM - K FACTOR (%)			8.50
AM - D (%)	29.11	70.89	100.00	PM - D (%)	60.07	39.93	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	357	689	1,046
PEAK HR TIME	12:45 PM to 01:45 PM			AM 12-HR PERIOD (00:00-12:00)	383	776	1,159
PEAK HR VOLUME	114	105	219	PM 6-HR PERIOD (12:00-18:00)	755	585	1,340
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,211	784	1,995
PEAK HR TIME	01:00 PM to 02:00 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,594	1,560	3,154
PEAK HR VOLUME	118	119		D (%)	50.54	49.46	100.00

Run Date: 2015/06/10

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2014

Site ID: B72928000000 **Route No:** 9280 **Date From:** 2014/10/16 0:00
Town: Oahu **Direction:** +MP **Date To:** 2014/10/29 23:45
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

Functional Classification: 18 TEST NEW URBAN: MINOR COLLECTOR
REPORT TOTALS - 336 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	544	1.29%	1088
PC	30833	73.13%	61666
2A-4T	10075	23.90%	20150
LIGHT VEHICLE TOTALS	41452	98.31%	82904
HEAVY VEHICLES			
Bus	91	0.22%	227
SINGLE UNIT TRUCK			
2A-6T	486	1.15%	972
3A-SU	90	0.21%	270
4A-SU	5	0.01%	20
SINGLE-TRAILER TRUCKS			
4A-ST	33	0.08%	132
5A-ST	5	0.01%	25
6A-ST	2	0.00%	12
MULTI-TRAILER TRUCKS			
5A-MT	0	0.00%	0
6A-MT	0	0.00%	0
7A-MT	0	0.00%	0
HEAVY VEHICLE TOTALS	712	1.69%	1658
CLASSIFIED VEHICLES TOTALS	42164 (A)	100.00%	84562 (B)
UNCLASSIFIED VEHICLES TOTALS	-1	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.997

ROADTUBE EQUIVALENT(B/2) = 42281 (C)

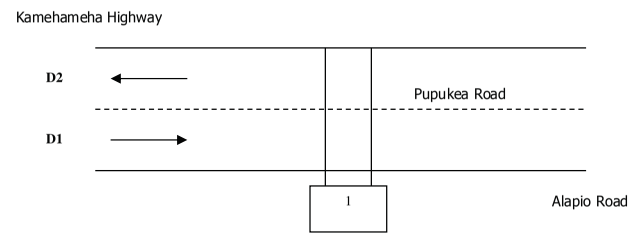
PEAK HOUR VOLUME : 280 2014/10/16 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	9	(65A-1) 3.21%	48	3300	(65A-2) 1.45%	8.48%
COMBINATION (TYPE 8-13)	1	(65B-1) 0.36%	2		(65B-2) 0.06%	8.48%

Traffic Data Service
Traffic Station Sketch

N

Island: Oahu
Area: Waimea

Section ID/Station #: B72928000000



Meter #	File Name	GPS
1. t161	D0113003_B72928000000	21.64597, -158.0592
2.	D0113004_B72928000000	

Station Description:
Pupukea Road: Kamehameha Highway to Alapio Road

Survey Beginning Date/Time: 1/13/15 @ 0000		Survey Ending Date/Time: 1/26/15 @ 2400

Survey Method:	Road Tube	Data Type:	Class
Survey Crew:	LM		C1B
Sketch Updated:		By:	SR
Remarks:	748		

FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	ROUTE MILE
Pupukea Road		18		9280	

D1= Direction to End — D1: Alapio Road / Kanalani Place
D2= Direction to Begin — D2: Kamehameha Highway / Kamehameha Highway

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/14/2015															
12:00-12:15	4	0	4	06:00-06:15	2	13	15	12:00-12:15	26	26	52	06:00-06:15	25	24	49
12:15-12:30	2	1	3	06:15-06:30	6	17	23	12:15-12:30	17	28	45	06:15-06:30	23	24	47
12:30-12:45	2	0	2	06:30-06:45	7	24	31	12:30-12:45	8	31	39	06:30-06:45	28	21	49
12:45-01:00	6	0	6	06:45-07:00	11	35	46	12:45-01:00	19	27	46	06:45-07:00	44	29	73
01:00-01:15	1	1	2	07:00-07:15	8	32	40	01:00-01:15	41	30	71	07:00-07:15	27	17	44
01:15-01:30	2	1	3	07:15-07:30	12	47	59	01:15-01:30	29	30	59	07:15-07:30	46	18	64
01:30-01:45	3	1	4	07:30-07:45	13	54	67	01:30-01:45	27	39	66	07:30-07:45	30	16	46
01:45-02:00	0	0	0	07:45-08:00	36	49	85	01:45-02:00	29	13	42	07:45-08:00	20	9	29
02:00-02:15	0	0	0	08:00-08:15	23	29	52	02:00-02:15	29	21	50	08:00-08:15	34	16	50
02:15-02:30	2	0	2	08:15-08:30	24	35	59	02:15-02:30	21	18	39	08:15-08:30	29	7	36
02:30-02:45	1	0	1	08:30-08:45	20	41	61	02:30-02:45	21	20	41	08:30-08:45	21	5	26
02:45-03:00	0	0	0	08:45-09:00	24	28	52	02:45-03:00	21	18	39	08:45-09:00	22	3	25
03:00-03:15	1	1	2	09:00-09:15	25	27	52	03:00-03:15	19	26	45	09:00-09:15	18	5	23
03:15-03:30	0	0	0	09:15-09:30	20	41	61	03:15-03:30	30	33	63	09:15-09:30	23	4	27
03:30-03:45	0	0	0	09:30-09:45	18	34	52	03:30-03:45	42	36	78	09:30-09:45	13	7	20
03:45-04:00	0	0	0	09:45-10:00	21	25	46	03:45-04:00	34	17	51	09:45-10:00	14	2	16
04:00-04:15	0	4	4	10:00-10:15	20	18	38	04:00-04:15	35	22	57	10:00-10:15	12	3	15
04:15-04:30	2	5	7	10:15-10:30	21	22	43	04:15-04:30	31	18	49	10:15-10:30	7	1	8
04:30-04:45	0	8	8	10:30-10:45	20	29	49	04:30-04:45	39	21	60	10:30-10:45	9	3	12
04:45-05:00	0	10	10	10:45-11:00	18	30	48	04:45-05:00	22	33	55	10:45-11:00	10	4	14
05:00-05:15	0	12	12	11:00-11:15	15	15	30	05:00-05:15	35	25	60	11:00-11:15	6	1	7
05:15-05:30	0	15	15	11:15-11:30	15	24	39	05:15-05:30	49	19	68	11:15-11:30	5	0	5
05:30-05:45	2	18	20	11:30-11:45	18	18	36	05:30-05:45	38	29	67	11:30-11:45	6	1	7
05:45-06:00	6	12	18	11:45-12:00	27	17	44	05:45-06:00	37	17	54	11:45-12:00	4	0	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	84	179	263
AM - K FACTOR (%)			8.11
AM - D (%)	31.94	68.06	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	103	182	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	144	106	250
PM - K FACTOR (%)			7.71
PM - D (%)	57.60	42.40	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM	03:00 PM to 04:00 PM	
PM - PEAK HR VOLUME	159	112	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	84	179	263
AM - K FACTOR (%)			8.11
AM - D (%)	31.94	68.06	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	144	106	250
PM - K FACTOR (%)			7.71
PM - D (%)	57.60	42.40	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:45 PM to 01:45 PM		
PEAK HR VOLUME	116	126	242
DIRECTIONAL PEAK			
PEAK HR TIME	01:00 PM to 02:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	126	127	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	424	704	1,128
AM 12-HR PERIOD (00:00-12:00)	458	793	1,251
PM 6-HR PERIOD (12:00-18:00)	699	597	1,296
PM 12-HR PERIOD (12:00-24:00)	1,175	817	1,992
24 HOUR PERIOD	1,633	1,610	3,243
D (%)	50.35	49.65	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/13/2015															
12:00-12:15	3	1	4	06:00-06:15	7	17	24	12:00-12:15	23	26	49	06:00-06:15	30	24	54
12:15-12:30	5	1	6	06:15-06:30	6	18	24	12:15-12:30	24	22	46	06:15-06:30	41	25	66
12:30-12:45	2	0	2	06:30-06:45	13	22	35	12:30-12:45	23	22	45	06:30-06:45	36	19	55
12:45-01:00	4	0	4	06:45-07:00	7	40	47	12:45-01:00	27	30	57	06:45-07:00	29	16	45
01:00-01:15	0	0	0	07:00-07:15	8	24	32	01:00-01:15	28	16	44	07:00-07:15	30	16	46
01:15-01:30	1	0	1	07:15-07:30	11	41	52	01:15-01:30	37	21	58	07:15-07:30	29	12	41
01:30-01:45	0	2	2	07:30-07:45	21	54	75	01:30-01:45	24	39	63	07:30-07:45	28	23	51
01:45-02:00	1	0	1	07:45-08:00	41	52	93	01:45-02:00	21	27	48	07:45-08:00	38	7	45
02:00-02:15	0	0	0	08:00-08:15	19	25	44	02:00-02:15	25	29	54	08:00-08:15	25	4	29
02:15-02:30	2	0	2	08:15-08:30	20	30	50	02:15-02:30	38	23	61	08:15-08:30	18	10	28
02:30-02:45	3	0	3	08:30-08:45	16	22	38	02:30-02:45	26	31	57	08:30-08:45	12	8	20
02:45-03:00	2	2	4	08:45-09:00	22	28	50	02:45-03:00	31	23	54	08:45-09:00	17	4	21
03:00-03:15	0	1	1	09:00-09:15	22	40	62	03:00-03:15	28	30	58	09:00-09:15	25	6	31
03:15-03:30	1	0	1	09:15-09:30	22	36	58	03:15-03:30	28	34	62	09:15-09:30	18	5	23
03:30-03:45	0	1	1	09:30-09:45	26	30	56	03:30-03:45	38	21	59	09:30-09:45	11	7	18
03:45-04:00	0	1	1	09:45-10:00	11	31	42	03:45-04:00	33	22	55	09:45-10:00	11	4	15
04:00-04:15	1	2	3	10:00-10:15	11	16	27	04:00-04:15	33	21	54	10:00-10:15	6	4	10
04:15-04:30	0	5	5	10:15-10:30	14	23	37	04:15-04:30	38	28	66	10:15-10:30	8	6	14
04:30-04:45	0	9	9	10:30-10:45	18	24	42	04:30-04:45	39	28	67	10:30-10:45	14	3	17
04:45-05:00	1	5	6	10:45-11:00	22	24	46	04:45-05:00	40	40	80	10:45-11:00	7	4	11
05:00-05:15	0	7	7	11:00-11:15	15	27	42	05:00-05:15	53	21	74	11:00-11:15	9	0	9
05:15-05:30	0	16	16	11:15-11:30	14	22	36	05:15-05:30	34	19	53	11:15-11:30	1	3	4
05:30-05:45	1	16	17	11:30-11:45	17	25	42	05:30-05:45	30	19	49	11:30-11:45	5	0	5
05:45-06:00	2	17	19	11:45-12:00	15	15	30	05:45-06:00	34	26	60	11:45-12:00	4	2	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	92	172	264
AM - K FACTOR (%)			8.16
AM - D (%)	34.85	65.15	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	101	172	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	170	117	287
PM - K FACTOR (%)			8.87
PM - D (%)	59.23	40.77	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	170	117	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	92	172	264
AM - K FACTOR (%)			8.16
AM - D (%)	34.85	65.15	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	170	117	287
PM - K FACTOR (%)			8.87
PM - D (%)	59.23	40.77	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM		
PEAK HR VOLUME	108	118	226
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	120	137	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	398	686	1,084
AM 12-HR PERIOD (00:00-12:00)	427	772	1,199
PM 6-HR PERIOD (12:00-18:00)	755	618	1,373
PM 12-HR PERIOD (12:00-24:00)	1,207	830	2,037
24 HOUR PERIOD	1,634	1,602	3,236
D (%)	50.49	49.51	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/16/2015															
12:00-12:15	2	0	2	06:00-06:15	8	14	22	12:00-12:15	27	27	54	06:00-06:15	50	27	77
12:15-12:30	1	0	1	06:15-06:30	4	15	19	12:15-12:30	17	14	31	06:15-06:30	39	27	66
12:30-12:45	1	0	1	06:30-06:45	6	29	35	12:30-12:45	24	18	42	06:30-06:45	48	31	79
12:45-01:00	1	1	2	06:45-07:00	8	46	54	12:45-01:00	34	34	68	06:45-07:00	42	30	72
01:00-01:15	3	0	3	07:00-07:15	14	23	37	01:00-01:15	30	22	52	07:00-07:15	32	32	64
01:15-01:30	2	0	2	07:15-07:30	6	60	66	01:15-01:30	27	24	51	07:15-07:30	50	17	67
01:30-01:45	1	0	1	07:30-07:45	24	55	79	01:30-01:45	25	29	54	07:30-07:45	26	19	45
01:45-02:00	4	1	5	07:45-08:00	43	40	83	01:45-02:00	30	40	70	07:45-08:00	34	17	51
02:00-02:15	2	0	2	08:00-08:15	27	27	54	02:00-02:15	24	25	49	08:00-08:15	35	18	53
02:15-02:30	0	0	0	08:15-08:30	13	30	43	02:15-02:30	39	32	71	08:15-08:30	26	18	44
02:30-02:45	1	0	1	08:30-08:45	16	27	43	02:30-02:45	27	21	48	08:30-08:45	21	10	31
02:45-03:00	1	0	1	08:45-09:00	25	45	70	02:45-03:00	33	30	63	08:45-09:00	28	17	45
03:00-03:15	1	1	2	09:00-09:15	22	34	56	03:00-03:15	34	25	59	09:00-09:15	15	12	27
03:15-03:30	0	0	0	09:15-09:30	18	37	55	03:15-03:30	27	18	45	09:15-09:30	16	11	27
03:30-03:45	0	0	0	09:30-09:45	26	25	51	03:30-03:45	34	25	59	09:30-09:45	18	7	25
03:45-04:00	2	0	2	09:45-10:00	16	28	44	03:45-04:00	31	20	51	09:45-10:00	28	5	33
04:00-04:15	0	3	3	10:00-10:15	18	37	55	04:00-04:15	31	22	53	10:00-10:15	25	11	36
04:15-04:30	0	5	5	10:15-10:30	23	28	51	04:15-04:30	36	33	69	10:15-10:30	19	5	24
04:30-04:45	0	6	6	10:30-10:45	25	29	54	04:30-04:45	35	38	73	10:30-10:45	19	9	28
04:45-05:00	1	11	12	10:45-11:00	22	29	51	04:45-05:00	29	18	47	10:45-11:00	11	6	17
05:00-05:15	0	13	13	11:00-11:15	30	31	61	05:00-05:15	43	38	81	11:00-11:15	20	4	24
05:15-05:30	0	15	15	11:15-11:30	23	31	54	05:15-05:30	38	28	66	11:15-11:30	11	7	18
05:30-05:45	2	18	20	11:30-11:45	21	25	46	05:30-05:45	49	28	77	11:30-11:45	6	5	11
05:45-06:00	4	15	19	11:45-12:00	22	22	44	05:45-06:00	52	34	86	11:45-12:00	10	3	13

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	100	182	282
AM - K FACTOR (%)			7.54
AM - D (%)	35.46	64.54	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	06:45 AM to 07:45 AM	
AM - PEAK HR VOLUME	107	184	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	182	128	310
PM - K FACTOR (%)			8.29
PM - D (%)	58.71	41.29	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	05:00 PM to 06:00 PM	
PM - PEAK HR VOLUME	190	128	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	100	182	282
AM - K FACTOR (%)			7.54
AM - D (%)	35.46	64.54	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	182	128	310
PM - K FACTOR (%)			8.29
PM - D (%)	58.71	41.29	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM		
PEAK HR VOLUME	118	126	244
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	123	127	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	460	767	1,227
AM 12-HR PERIOD (00:00-12:00)	489	856	1,345
PM 6-HR PERIOD (12:00-18:00)	776	643	1,419
PM 12-HR PERIOD (12:00-24:00)	1,405	991	2,396
24 HOUR PERIOD	1,894	1,847	3,741
D (%)	50.63	49.37	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/15/2015															
12:00-12:15	4	1	5	06:00-06:15	4	14	18	12:00-12:15	24	18	42	06:00-06:15	23	17	40
12:15-12:30	2	0	2	06:15-06:30	4	19	23	12:15-12:30	19	23	42	06:15-06:30	46	21	67
12:30-12:45	4	0	4	06:30-06:45	7	20	27	12:30-12:45	19	16	35	06:30-06:45	25	19	44
12:45-01:00	2	0	2	06:45-07:00	9	36	45	12:45-01:00	22	18	40	06:45-07:00	25	16	41
01:00-01:15	4	0	4	07:00-07:15	14	28	42	01:00-01:15	28	31	59	07:00-07:15	38	17	55
01:15-01:30	0	0	0	07:15-07:30	5	47	52	01:15-01:30	22	21	43	07:15-07:30	35	13	48
01:30-01:45	1	1	2	07:30-07:45	20	70	90	01:30-01:45	20	33	53	07:30-07:45	32	16	48
01:45-02:00	0	0	0	07:45-08:00	43	25	68	01:45-02:00	27	28	55	07:45-08:00	36	11	47
02:00-02:15	1	0	1	08:00-08:15	20	37	57	02:00-02:15	25	22	47	08:00-08:15	29	15	44
02:15-02:30	2	3	5	08:15-08:30	17	31	48	02:15-02:30	30	27	57	08:15-08:30	31	5	36
02:30-02:45	2	0	2	08:30-08:45	24	34	58	02:30-02:45	27	22	49	08:30-08:45	27	10	37
02:45-03:00	0	1	1	08:45-09:00	17	31	48	02:45-03:00	30	29	59	08:45-09:00	22	5	27
03:00-03:15	2	1	3	09:00-09:15	17	25	42	03:00-03:15	23	27	50	09:00-09:15	19	4	23
03:15-03:30	1	0	1	09:15-09:30	25	30	55	03:15-03:30	36	20	56	09:15-09:30	19	4	23
03:30-03:45	1	0	1	09:30-09:45	14	38	52	03:30-03:45	41	24	65	09:30-09:45	19	7	26
03:45-04:00	0	2	2	09:45-10:00	21	29	50	03:45-04:00	36	22	58	09:45-10:00	15	3	18
04:00-04:15	0	4	4	10:00-10:15	13	25	38	04:00-04:15	30	33	63	10:00-10:15	8	5	13
04:15-04:30	0	5	5	10:15-10:30	25	25	50	04:15-04:30	42	13	55	10:15-10:30	13	5	18
04:30-04:45	3	5	8	10:30-10:45	14	40	54	04:30-04:45	50	38	88	10:30-10:45	10	0	10
04:45-05:00	0	7	7	10:45-11:00	27	25	52	04:45-05:00	31	19	50	10:45-11:00	4	1	5
05:00-05:15	0	13	13	11:00-11:15	11	21	32	05:00-05:15	28	23	51	11:00-11:15	1	1	2
05:15-05:30	0	16	16	11:15-11:30	15	19	34	05:15-05:30	36	23	59	11:15-11:30	4	2	6
05:30-05:45	1	16	17	11:30-11:45	20	17	37	05:30-05:45	31	31	62	11:30-11:45	0	2	2
05:45-06:00	4	16	20	11:45-12:00	26	17	43	05:45-06:00	28	22	50	11:45-12:00	9	1	10

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	88	179	267
AM - K FACTOR (%)			8.30
AM - D (%)	32.96	67.04	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	06:45 AM to 07:45 AM	
AM - PEAK HR VOLUME	104	181	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	158	106	264
PM - K FACTOR (%)			8.20
PM - D (%)	59.85	40.15	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	158	106	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	88	179	267
AM - K FACTOR (%)			8.30
AM - D (%)	32.96	67.04	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	158	106	264
PM - K FACTOR (%)			8.20
PM - D (%)	59.85	40.15	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM		
PEAK HR VOLUME	102	110	212
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	112	122	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	412	703	1,115
AM 12-HR PERIOD (00:00-12:00)	446	794	1,240
PM 6-HR PERIOD (12:00-18:00)	705	583	1,288
PM 12-HR PERIOD (12:00-24:00)	1,195	783	1,978
24 HOUR PERIOD	1,641	1,577	3,218
D (%)	50.99	49.01	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/18/2015															
12:00-12:15	8	5	13	06:00-06:15	1	11	12	12:00-12:15	26	22	48	06:00-06:15	33	23	56
12:15-12:30	5	1	6	06:15-06:30	4	12	16	12:15-12:30	31	33	64	06:15-06:30	27	24	51
12:30-12:45	8	2	10	06:30-06:45	2	16	18	12:30-12:45	18	30	48	06:30-06:45	33	20	53
12:45-01:00	6	1	7	06:45-07:00	5	11	16	12:45-01:00	29	17	46	06:45-07:00	20	22	42
01:00-01:15	0	1	1	07:00-07:15	7	22	29	01:00-01:15	27	22	49	07:00-07:15	30	20	50
01:15-01:30	2	1	3	07:15-07:30	9	22	31	01:15-01:30	25	25	50	07:15-07:30	32	17	49
01:30-01:45	5	1	6	07:30-07:45	10	20	30	01:30-01:45	11	17	28	07:30-07:45	32	9	41
01:45-02:00	2	1	3	07:45-08:00	8	37	45	01:45-02:00	26	19	45	07:45-08:00	20	10	30
02:00-02:15	3	0	3	08:00-08:15	17	29	46	02:00-02:15	20	21	41	08:00-08:15	19	3	22
02:15-02:30	1	5	6	08:15-08:30	17	33	50	02:15-02:30	21	32	53	08:15-08:30	23	11	34
02:30-02:45	1	2	3	08:30-08:45	26	35	61	02:30-02:45	26	26	52	08:30-08:45	18	4	22
02:45-03:00	2	1	3	08:45-09:00	32	35	67	02:45-03:00	27	21	48	08:45-09:00	11	2	13
03:00-03:15	1	1	2	09:00-09:15	21	22	43	03:00-03:15	17	18	35	09:00-09:15	9	4	13
03:15-03:30	1	1	2	09:15-09:30	27	31	58	03:15-03:30	31	16	47	09:15-09:30	18	8	26
03:30-03:45	2	1	3	09:30-09:45	20	33	53	03:30-03:45	17	32	49	09:30-09:45	20	6	26
03:45-04:00	0	2	2	09:45-10:00	21	24	45	03:45-04:00	28	21	49	09:45-10:00	10	7	17
04:00-04:15	1	1	2	10:00-10:15	20	26	46	04:00-04:15	28	27	55	10:00-10:15	11	1	12
04:15-04:30	1	1	2	10:15-10:30	12	27	39	04:15-04:30	21	26	47	10:15-10:30	8	6	14
04:30-04:45	1	4	5	10:30-10:45	23	31	54	04:30-04:45	22	28	50	10:30-10:45	14	3	17
04:45-05:00	0	2	2	10:45-11:00	25	21	46	04:45-05:00	19	29	48	10:45-11:00	8	5	13
05:00-05:15	0	1	1	11:00-11:15	22	19	41	05:00-05:15	25	23	48	11:00-11:15	10	3	13
05:15-05:30	0	3	3	11:15-11:30	20	27	47	05:15-05:30	18	19	37	11:15-11:30	2	0	2
05:30-05:45	0	7	7	11:30-11:45	24	20	44	05:30-05:45	35	23	58	11:30-11:45	4	1	5
05:45-06:00	1	8	9	11:45-12:00	25	18	43	05:45-06:00	24	16	40	11:45-12:00	2	3	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	92	132	224
AM - K FACTOR (%)			7.87
AM - D (%)	41.07	58.93	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:45 AM to 08:45 AM	
AM - PEAK HR VOLUME	92	134	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	119	86	205
PM - K FACTOR (%)			7.21
PM - D (%)	58.05	41.95	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	119	110	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:30 AM to 09:30 AM		
AM - PEAK HR VOLUME	106	123	229
AM - K FACTOR (%)			8.05
AM - D (%)	46.29	53.71	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	12:15 PM to 01:15 PM		
PM - PEAK HR VOLUME	105	102	207
PM - K FACTOR (%)			7.28
PM - D (%)	50.72	49.28	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:15 PM to 01:15 PM		
PEAK HR VOLUME	105	102	207
DIRECTIONAL PEAK			
PEAK HR TIME	11:30 AM to 12:30 PM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	106	114	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	398	582	980
AM 12-HR PERIOD (00:00-12:00)	449	635	1,084
PM 6-HR PERIOD (12:00-18:00)	572	563	1,135
PM 12-HR PERIOD (12:00-24:00)	986	775	1,761
24 HOUR PERIOD	1,435	1,410	2,845
D (%)	50.44	49.56	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/17/2015															
12:00-12:15	6	2	8	06:00-06:15	3	8	11	12:00-12:15	25	26	51	06:00-06:15	41	18	59
12:15-12:30	11	1	12	06:15-06:30	11	12	23	12:15-12:30	27	28	55	06:15-06:30	39	23	62
12:30-12:45	5	3	8	06:30-06:45	4	22	26	12:30-12:45	20	20	40	06:30-06:45	42	21	63
12:45-01:00	4	0	4	06:45-07:00	5	13	18	12:45-01:00	25	21	46	06:45-07:00	25	18	43
01:00-01:15	6	0	6	07:00-07:15	8	18	26	01:00-01:15	30	24	54	07:00-07:15	48	17	65
01:15-01:30	2	0	2	07:15-07:30	7	21	28	01:15-01:30	32	23	55	07:15-07:30	34	18	52
01:30-01:45	3	0	3	07:30-07:45	13	17	30	01:30-01:45	20	31	51	07:30-07:45	31	18	49
01:45-02:00	1	0	1	07:45-08:00	14	30	44	01:45-02:00	19	23	42	07:45-08:00	31	31	62
02:00-02:15	1	1	2	08:00-08:15	13	26	39	02:00-02:15	15	23	38	08:00-08:15	28	29	57
02:15-02:30	1	1	2	08:15-08:30	10	32	42	02:15-02:30	22	30	52	08:15-08:30	27	30	57
02:30-02:45	2	1	3	08:30-08:45	19	43	62	02:30-02:45	37	19	56	08:30-08:45	26	14	40
02:45-03:00	2	0	2	08:45-09:00	16	37	53	02:45-03:00	23	29	52	08:45-09:00	25	14	39
03:00-03:15	1	0	1	09:00-09:15	23	27	50	03:00-03:15	26	18	44	09:00-09:15	18	18	36
03:15-03:30	0	0	0	09:15-09:30	28	26	54	03:15-03:30	26	32	58	09:15-09:30	17	15	32
03:30-03:45	1	1	2	09:30-09:45	14	41	55	03:30-03:45	26	29	55	09:30-09:45	14	10	24
03:45-04:00	0	0	0	09:45-10:00	29	45	74	03:45-04:00	30	15	45	09:45-10:00	17	12	29
04:00-04:15	0	6	6	10:00-10:15	28	28	56	04:00-04:15	14	32	46	10:00-10:15	13	13	26
04:15-04:30	1	3	4	10:15-10:30	23	29	52	04:15-04:30	34	21	55	10:15-10:30	10	4	14
04:30-04:45	1	3	4	10:30-10:45	22	30	52	04:30-04:45	32	30	62	10:30-10:45	7	5	12
04:45-05:00	0	2	2	10:45-11:00	27	36	63	04:45-05:00	32	26	58	10:45-11:00	13	5	18
05:00-05:15	4	8	12	11:00-11:15	31	23	54	05:00-05:15	33	12	45	11:00-11:15	13	9	22
05:15-05:30	1	9	10	11:15-11:30	25	32	57	05:15-05:30	29	26	55	11:15-11:30	9	14	23
05:30-05:45	1	6	7	11:30-11:45	33	21	54	05:30-05:45	37	21	58	11:30-11:45	11	4	15
05:45-06:00	5	13	18	11:45-12:00	21	45	66	05:45-06:00	43	13	56	11:45-12:00	10	7	17

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	58	138	196
AM - K FACTOR (%)			5.85
AM - D (%)	29.59	70.41	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	58	138	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM		
PM - PEAK HR VOLUME	165	75	240
PM - K FACTOR (%)			7.16
PM - D (%)	68.75	31.25	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	165	109	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:15 AM to 10:15 AM		
AM - PEAK HR VOLUME	99	140	239
AM - K FACTOR (%)			7.13
AM - D (%)	41.42	58.58	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM		
PM - PEAK HR VOLUME	165	75	240
PM - K FACTOR (%)			7.16
PM - D (%)	68.75	31.25	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:15 AM to 10:15 AM		
PEAK HR VOLUME	99	140	239
DIRECTIONAL PEAK			
PEAK HR TIME	10:45 AM to 11:45 AM	09:30 AM to 10:30 AM	
PEAK HR VOLUME	116	143	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	427	662	1,089
AM 12-HR PERIOD (00:00-12:00)	486	722	1,208
PM 6-HR PERIOD (12:00-18:00)	657	572	1,229
PM 12-HR PERIOD (12:00-24:00)	1,206	939	2,145
24 HOUR PERIOD	1,692	1,661	3,353
D (%)	50.46	49.54	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/20/2015															
12:00-12:15	4	2	6	06:00-06:15	6	22	28	12:00-12:15	35	33	68	06:00-06:15	35	27	62
12:15-12:30	2	1	3	06:15-06:30	6	16	22	12:15-12:30	25	32	57	06:15-06:30	34	21	55
12:30-12:45	2	0	2	06:30-06:45	6	22	28	12:30-12:45	22	24	46	06:30-06:45	43	15	58
12:45-01:00	5	1	6	06:45-07:00	10	29	39	12:45-01:00	22	24	46	06:45-07:00	32	16	48
01:00-01:15	0	0	0	07:00-07:15	11	36	47	01:00-01:15	30	27	57	07:00-07:15	36	22	58
01:15-01:30	0	1	1	07:15-07:30	8	38	46	01:15-01:30	21	24	45	07:15-07:30	31	14	45
01:30-01:45	0	0	0	07:30-07:45	18	63	81	01:30-01:45	31	31	62	07:30-07:45	31	8	39
01:45-02:00	0	0	0	07:45-08:00	42	38	80	01:45-02:00	32	31	63	07:45-08:00	28	8	36
02:00-02:15	1	0	1	08:00-08:15	26	33	59	02:00-02:15	24	25	49	08:00-08:15	26	12	38
02:15-02:30	0	1	1	08:15-08:30	20	31	51	02:15-02:30	41	18	59	08:15-08:30	38	9	47
02:30-02:45	1	0	1	08:30-08:45	26	29	55	02:30-02:45	27	18	45	08:30-08:45	23	7	30
02:45-03:00	0	0	0	08:45-09:00	27	32	59	02:45-03:00	30	26	56	08:45-09:00	22	8	30
03:00-03:15	0	1	1	09:00-09:15	23	36	59	03:00-03:15	35	37	72	09:00-09:15	13	5	18
03:15-03:30	1	1	2	09:15-09:30	29	46	75	03:15-03:30	37	28	65	09:15-09:30	15	10	25
03:30-03:45	1	1	2	09:30-09:45	29	36	65	03:30-03:45	36	32	68	09:30-09:45	15	4	19
03:45-04:00	0	1	1	09:45-10:00	9	30	39	03:45-04:00	29	28	57	09:45-10:00	19	9	28
04:00-04:15	1	5	6	10:00-10:15	18	23	41	04:00-04:15	46	32	78	10:00-10:15	10	2	12
04:15-04:30	0	3	3	10:15-10:30	24	26	50	04:15-04:30	22	28	50	10:15-10:30	11	3	14
04:30-04:45	1	6	7	10:30-10:45	17	47	64	04:30-04:45	40	33	73	10:30-10:45	15	6	21
04:45-05:00	0	6	6	10:45-11:00	27	29	56	04:45-05:00	35	40	75	10:45-11:00	12	3	15
05:00-05:15	0	12	12	11:00-11:15	21	23	44	05:00-05:15	36	30	66	11:00-11:15	4	1	5
05:15-05:30	0	13	13	11:15-11:30	21	31	52	05:15-05:30	40	20	60	11:15-11:30	8	1	9
05:30-05:45	3	16	19	11:30-11:45	27	22	49	05:30-05:45	37	22	59	11:30-11:45	2	0	2
05:45-06:00	3	19	22	11:45-12:00	24	21	45	05:45-06:00	32	24	56	11:45-12:00	4	3	7

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	106	165	271
AM - K FACTOR (%)			7.74
AM - D (%)	39.11	60.89	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	114	175	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	143	133	276
PM - K FACTOR (%)			7.88
PM - D (%)	51.81	48.19	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	151	133	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	106	165	271
AM - K FACTOR (%)			7.74
AM - D (%)	39.11	60.89	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	143	133	276
PM - K FACTOR (%)			7.88
PM - D (%)	51.81	48.19	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM		
PEAK HR VOLUME	90	148	238
DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	128	148	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	475	759	1,234
AM 12-HR PERIOD (00:00-12:00)	500	849	1,349
PM 6-HR PERIOD (12:00-18:00)	765	667	1,432
PM 12-HR PERIOD (12:00-24:00)	1,272	881	2,153
24 HOUR PERIOD	1,772	1,730	3,502
D (%)	50.60	49.40	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/19/2015															
12:00-12:15	6	1	7	06:00-06:15	5	15	20	12:00-12:15	26	23	49	06:00-06:15	36	24	60
12:15-12:30	2	2	4	06:15-06:30	5	18	23	12:15-12:30	26	19	45	06:15-06:30	30	18	48
12:30-12:45	4	1	5	06:30-06:45	11	20	31	12:30-12:45	19	19	38	06:30-06:45	38	11	49
12:45-01:00	2	1	3	06:45-07:00	11	32	43	12:45-01:00	22	21	43	06:45-07:00	25	18	43
01:00-01:15	1	2	3	07:00-07:15	14	35	49	01:00-01:15	24	13	37	07:00-07:15	26	7	33
01:15-01:30	4	1	5	07:15-07:30	15	50	65	01:15-01:30	29	31	60	07:15-07:30	36	12	48
01:30-01:45	1	5	6	07:30-07:45	22	62	84	01:30-01:45	24	22	46	07:30-07:45	30	11	41
01:45-02:00	1	0	1	07:45-08:00	40	30	70	01:45-02:00	18	41	59	07:45-08:00	37	10	47
02:00-02:15	0	1	1	08:00-08:15	16	33	49	02:00-02:15	21	28	49	08:00-08:15	26	8	34
02:15-02:30	1	0	1	08:15-08:30	17	36	53	02:15-02:30	40	32	72	08:15-08:30	22	10	32
02:30-02:45	0	0	0	08:30-08:45	20	29	49	02:30-02:45	31	31	62	08:30-08:45	18	3	21
02:45-03:00	0	0	0	08:45-09:00	28	33	61	02:45-03:00	38	28	66	08:45-09:00	25	10	35
03:00-03:15	0	1	1	09:00-09:15	23	38	61	03:00-03:15	28	23	51	09:00-09:15	17	8	25
03:15-03:30	0	1	1	09:15-09:30	28	28	56	03:15-03:30	31	30	61	09:15-09:30	13	2	15
03:30-03:45	2	2	4	09:30-09:45	19	46	65	03:30-03:45	34	30	64	09:30-09:45	15	10	25
03:45-04:00	1	0	1	09:45-10:00	15	22	37	03:45-04:00	45	28	73	09:45-10:00	14	9	23
04:00-04:15	0	2	2	10:00-10:15	16	20	36	04:00-04:15	34	25	59	10:00-10:15	12	8	20
04:15-04:30	1	9	10	10:15-10:30	15	36	51	04:15-04:30	38	16	54	10:15-10:30	11	3	14
04:30-04:45	0	4	4	10:30-10:45	18	23	41	04:30-04:45	33	42	75	10:30-10:45	9	1	10
04:45-05:00	0	12	12	10:45-11:00	24	22	46	04:45-05:00	35	26	61	10:45-11:00	8	3	11
05:00-05:15	0	9	9	11:00-11:15	18	37	55	05:00-05:15	27	18	45	11:00-11:15	5	2	7
05:15-05:30	3	16	19	11:15-11:30	16	20	36	05:15-05:30	31	29	60	11:15-11:30	6	1	7
05:30-05:45	0	18	18	11:30-11:45	17	22	39	05:30-05:45	40	25	65	11:30-11:45	3	0	3
05:45-06:00	3	11	14	11:45-12:00	20	16	36	05:45-06:00	43	28	71	11:45-12:00	8	4	12

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM		
AM - PEAK HR VOLUME	91	177	268
AM - K FACTOR (%)			8.08
AM - D (%)	33.96	66.04	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	06:45 AM to 07:45 AM	
AM - PEAK HR VOLUME	95	179	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	150	111	261
PM - K FACTOR (%)			7.87
PM - D (%)	57.47	42.53	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM	04:30 PM to 05:30 PM	
PM - PEAK HR VOLUME	151	115	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM		
AM - PEAK HR VOLUME	91	177	268
AM - K FACTOR (%)			8.08
AM - D (%)	33.96	66.04	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	150	111	261
PM - K FACTOR (%)			7.87
PM - D (%)	57.47	42.53	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	130	119	249
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	130	134	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	433	723	1,156
AM 12-HR PERIOD (00:00-12:00)	465	822	1,287
PM 6-HR PERIOD (12:00-18:00)	737	628	1,365
PM 12-HR PERIOD (12:00-24:00)	1,207	821	2,028
24 HOUR PERIOD	1,672	1,643	3,315
D (%)	50.44	49.56	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/22/2015															
12:00-12:15	9	0	9	06:00-06:15	7	15	22	12:00-12:15	26	28	54	06:00-06:15	34	18	52
12:15-12:30	5	1	6	06:15-06:30	5	18	23	12:15-12:30	21	19	40	06:15-06:30	34	23	57
12:30-12:45	0	0	0	06:30-06:45	8	27	35	12:30-12:45	24	16	40	06:30-06:45	40	22	62
12:45-01:00	4	2	6	06:45-07:00	6	39	45	12:45-01:00	21	17	38	06:45-07:00	35	21	56
01:00-01:15	1	1	2	07:00-07:15	16	23	39	01:00-01:15	24	21	45	07:00-07:15	42	21	63
01:15-01:30	1	0	1	07:15-07:30	13	59	72	01:15-01:30	32	29	61	07:15-07:30	40	15	55
01:30-01:45	0	0	0	07:30-07:45	27	60	87	01:30-01:45	22	23	45	07:30-07:45	40	5	45
01:45-02:00	0	0	0	07:45-08:00	42	45	87	01:45-02:00	32	40	72	07:45-08:00	35	14	49
02:00-02:15	1	1	2	08:00-08:15	27	32	59	02:00-02:15	18	44	62	08:00-08:15	36	11	47
02:15-02:30	1	2	3	08:15-08:30	21	39	60	02:15-02:30	39	26	65	08:15-08:30	31	6	37
02:30-02:45	1	0	1	08:30-08:45	27	41	68	02:30-02:45	38	24	62	08:30-08:45	23	11	34
02:45-03:00	3	0	3	08:45-09:00	33	33	66	02:45-03:00	32	21	53	08:45-09:00	22	10	32
03:00-03:15	1	1	2	09:00-09:15	30	29	59	03:00-03:15	29	23	52	09:00-09:15	11	11	22
03:15-03:30	2	0	2	09:15-09:30	29	37	66	03:15-03:30	37	29	66	09:15-09:30	23	9	32
03:30-03:45	2	1	3	09:30-09:45	20	40	60	03:30-03:45	35	25	60	09:30-09:45	18	9	27
03:45-04:00	1	1	2	09:45-10:00	31	29	60	03:45-04:00	29	23	52	09:45-10:00	18	4	22
04:00-04:15	0	5	5	10:00-10:15	21	31	52	04:00-04:15	50	27	77	10:00-10:15	7	9	16
04:15-04:30	1	5	6	10:15-10:30	23	28	51	04:15-04:30	37	43	80	10:15-10:30	13	5	18
04:30-04:45	1	5	6	10:30-10:45	13	29	42	04:30-04:45	37	30	67	10:30-10:45	12	4	16
04:45-05:00	1	8	9	10:45-11:00	17	25	42	04:45-05:00	46	31	77	10:45-11:00	11	4	15
05:00-05:15	1	5	6	11:00-11:15	23	28	51	05:00-05:15	40	27	67	11:00-11:15	10	1	11
05:15-05:30	1	16	17	11:15-11:30	17	23	40	05:15-05:30	34	19	53	11:15-11:30	4	3	7
05:30-05:45	4	16	20	11:30-11:45	21	29	50	05:30-05:45	33	37	70	11:30-11:45	5	8	13
05:45-06:00	0	19	19	11:45-12:00	26	22	48	05:45-06:00	37	29	66	11:45-12:00	3	2	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	109	196	305
AM - K FACTOR (%)			8.40
AM - D (%)	35.74	64.26	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	117	196	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	170	131	301
PM - K FACTOR (%)			8.29
PM - D (%)	56.48	43.52	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	170	131	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	109	196	305
AM - K FACTOR (%)			8.40
AM - D (%)	35.74	64.26	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	170	131	301
PM - K FACTOR (%)			8.29
PM - D (%)	56.48	43.52	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	127	134	261
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	127	137	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	503	781	1,284
AM 12-HR PERIOD (00:00-12:00)	544	870	1,414
PM 6-HR PERIOD (12:00-18:00)	773	651	1,424
PM 12-HR PERIOD (12:00-24:00)	1,320	897	2,217
24 HOUR PERIOD	1,864	1,767	3,631
D (%)	51.34	48.66	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/21/2015															
12:00-12:15	5	0	5	06:00-06:15	5	17	22	12:00-12:15	21	25	46	06:00-06:15	37	21	58
12:15-12:30	2	0	2	06:15-06:30	2	16	18	12:15-12:30	16	27	43	06:15-06:30	37	19	56
12:30-12:45	3	0	3	06:30-06:45	14	24	38	12:30-12:45	25	39	64	06:30-06:45	26	18	44
12:45-01:00	0	2	2	06:45-07:00	10	36	46	12:45-01:00	21	23	44	06:45-07:00	40	15	55
01:00-01:15	2	0	2	07:00-07:15	15	29	44	01:00-01:15	39	26	65	07:00-07:15	31	30	61
01:15-01:30	0	2	2	07:15-07:30	10	55	65	01:15-01:30	42	28	70	07:15-07:30	37	15	52
01:30-01:45	1	1	2	07:30-07:45	18	71	89	01:30-01:45	20	28	48	07:30-07:45	32	15	47
01:45-02:00	1	0	1	07:45-08:00	42	50	92	01:45-02:00	27	24	51	07:45-08:00	28	10	38
02:00-02:15	3	1	4	08:00-08:15	21	33	54	02:00-02:15	40	23	63	08:00-08:15	29	11	40
02:15-02:30	3	1	4	08:15-08:30	22	31	53	02:15-02:30	39	24	63	08:15-08:30	22	5	27
02:30-02:45	1	1	2	08:30-08:45	26	34	60	02:30-02:45	24	22	46	08:30-08:45	20	8	28
02:45-03:00	1	1	2	08:45-09:00	32	32	64	02:45-03:00	29	24	53	08:45-09:00	18	6	24
03:00-03:15	0	1	1	09:00-09:15	19	38	57	03:00-03:15	30	29	59	09:00-09:15	21	5	26
03:15-03:30	1	0	1	09:15-09:30	20	33	53	03:15-03:30	44	27	71	09:15-09:30	19	1	20
03:30-03:45	1	0	1	09:30-09:45	19	37	56	03:30-03:45	24	22	46	09:30-09:45	5	8	13
03:45-04:00	0	1	1	09:45-10:00	22	34	56	03:45-04:00	31	26	57	09:45-10:00	15	7	22
04:00-04:15	0	1	1	10:00-10:15	34	34	68	04:00-04:15	34	28	62	10:00-10:15	4	3	7
04:15-04:30	0	2	2	10:15-10:30	17	23	40	04:15-04:30	36	24	60	10:15-10:30	11	3	14
04:30-04:45	0	6	6	10:30-10:45	34	25	59	04:30-04:45	34	30	64	10:30-10:45	5	2	7
04:45-05:00	0	10	10	10:45-11:00	25	27	52	04:45-05:00	42	43	85	10:45-11:00	6	2	8
05:00-05:15	0	14	14	11:00-11:15	27	24	51	05:00-05:15	26	24	50	11:00-11:15	31	2	33
05:15-05:30	1	13	14	11:15-11:30	24	40	64	05:15-05:30	40	24	64	11:15-11:30	5	3	8
05:30-05:45	3	16	19	11:30-11:45	23	31	54	05:30-05:45	29	28	57	11:30-11:45	3	2	5
05:45-06:00	6	13	19	11:45-12:00	27	33	60	05:45-06:00	40	26	66	11:45-12:00	4	1	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	91	209	300
AM - K FACTOR (%)			8.50
AM - D (%)	30.33	69.67	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	111	209	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	146	125	271
PM - K FACTOR (%)			7.68
PM - D (%)	53.87	46.13	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	146	125	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	91	209	300
AM - K FACTOR (%)			8.50
AM - D (%)	30.33	69.67	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	146	125	271
PM - K FACTOR (%)			7.68
PM - D (%)	53.87	46.13	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM		
PEAK HR VOLUME	127	116	243
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	132	142	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	508	807	1,315
AM 12-HR PERIOD (00:00-12:00)	542	893	1,435
PM 6-HR PERIOD (12:00-18:00)	753	644	1,397
PM 12-HR PERIOD (12:00-24:00)	1,239	856	2,095
24 HOUR PERIOD	1,781	1,749	3,530
D (%)	50.45	49.55	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/24/2015															
12:00-12:15	8	1	9	06:00-06:15	3	9	12	12:00-12:15	20	18	38	06:00-06:15	21	17	38
12:15-12:30	6	3	9	06:15-06:30	6	11	17	12:15-12:30	35	24	59	06:15-06:30	20	15	35
12:30-12:45	3	1	4	06:30-06:45	3	12	15	12:30-12:45	29	29	58	06:30-06:45	24	20	44
12:45-01:00	4	0	4	06:45-07:00	5	15	20	12:45-01:00	23	22	45	06:45-07:00	23	21	44
01:00-01:15	4	2	6	07:00-07:15	7	7	14	01:00-01:15	21	24	45	07:00-07:15	28	17	45
01:15-01:30	5	0	5	07:15-07:30	7	18	25	01:15-01:30	25	20	45	07:15-07:30	30	28	58
01:30-01:45	1	1	2	07:30-07:45	14	31	45	01:30-01:45	33	22	55	07:30-07:45	19	6	25
01:45-02:00	3	2	5	07:45-08:00	7	29	36	01:45-02:00	25	22	47	07:45-08:00	30	15	45
02:00-02:15	1	0	1	08:00-08:15	15	34	49	02:00-02:15	25	22	47	08:00-08:15	23	12	35
02:15-02:30	3	2	5	08:15-08:30	13	34	47	02:15-02:30	26	17	43	08:15-08:30	27	10	37
02:30-02:45	0	1	1	08:30-08:45	16	38	54	02:30-02:45	31	23	54	08:30-08:45	20	9	29
02:45-03:00	2	0	2	08:45-09:00	15	39	54	02:45-03:00	22	19	41	08:45-09:00	18	10	28
03:00-03:15	3	2	5	09:00-09:15	23	33	56	03:00-03:15	34	28	62	09:00-09:15	16	21	37
03:15-03:30	4	3	7	09:15-09:30	20	37	57	03:15-03:30	24	23	47	09:15-09:30	27	7	34
03:30-03:45	4	2	6	09:30-09:45	20	28	48	03:30-03:45	33	24	57	09:30-09:45	12	9	21
03:45-04:00	0	3	3	09:45-10:00	26	33	59	03:45-04:00	24	23	47	09:45-10:00	20	10	30
04:00-04:15	1	2	3	10:00-10:15	23	33	56	04:00-04:15	33	23	56	10:00-10:15	10	3	13
04:15-04:30	1	3	4	10:15-10:30	23	21	44	04:15-04:30	17	19	36	10:15-10:30	8	11	19
04:30-04:45	2	3	5	10:30-10:45	27	39	66	04:30-04:45	34	26	60	10:30-10:45	20	8	28
04:45-05:00	0	1	1	10:45-11:00	27	21	48	04:45-05:00	29	18	47	10:45-11:00	16	3	19
05:00-05:15	1	6	7	11:00-11:15	27	25	52	05:00-05:15	21	26	47	11:00-11:15	10	3	13
05:15-05:30	1	4	5	11:15-11:30	16	24	40	05:15-05:30	33	18	51	11:15-11:30	8	8	16
05:30-05:45	0	7	7	11:30-11:45	25	25	50	05:30-05:45	30	26	56	11:30-11:45	6	2	8
05:45-06:00	3	7	10	11:45-12:00	24	28	52	05:45-06:00	26	23	49	11:45-12:00	9	1	10

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	59	145	204
AM - K FACTOR (%)			6.72
AM - D (%)	28.92	71.08	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	59	145	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM		
PM - PEAK HR VOLUME	115	98	213
PM - K FACTOR (%)			7.02
PM - D (%)	53.99	46.01	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM	03:00 PM to 04:00 PM	
PM - PEAK HR VOLUME	117	98	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:45 AM to 10:45 AM		
AM - PEAK HR VOLUME	99	126	225
AM - K FACTOR (%)			7.41
AM - D (%)	44.00	56.00	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM		
PM - PEAK HR VOLUME	115	98	213
PM - K FACTOR (%)			7.02
PM - D (%)	53.99	46.01	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:45 AM to 10:45 AM		
PEAK HR VOLUME	99	126	225
DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	109	131	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	392	624	1,016
AM 12-HR PERIOD (00:00-12:00)	452	680	1,132
PM 6-HR PERIOD (12:00-18:00)	653	539	1,192
PM 12-HR PERIOD (12:00-24:00)	1,098	805	1,903
24 HOUR PERIOD	1,550	1,485	3,035
D (%)	51.07	48.93	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/23/2015															
12:00-12:15	1	7	8	06:00-06:15	4	19	23	12:00-12:15	20	24	44	06:00-06:15	25	34	59
12:15-12:30	3	0	3	06:15-06:30	9	22	31	12:15-12:30	23	22	45	06:15-06:30	47	33	80
12:30-12:45	4	1	5	06:30-06:45	10	24	34	12:30-12:45	24	25	49	06:30-06:45	38	19	57
12:45-01:00	2	1	3	06:45-07:00	13	41	54	12:45-01:00	23	22	45	06:45-07:00	32	14	46
01:00-01:15	4	0	4	07:00-07:15	13	40	53	01:00-01:15	31	23	54	07:00-07:15	22	21	43
01:15-01:30	1	0	1	07:15-07:30	18	56	74	01:15-01:30	28	35	63	07:15-07:30	24	14	38
01:30-01:45	2	4	6	07:30-07:45	25	68	93	01:30-01:45	26	27	53	07:30-07:45	24	15	39
01:45-02:00	0	1	1	07:45-08:00	33	37	70	01:45-02:00	35	27	62	07:45-08:00	28	8	36
02:00-02:15	2	0	2	08:00-08:15	26	39	65	02:00-02:15	41	25	66	08:00-08:15	27	23	50
02:15-02:30	2	1	3	08:15-08:30	25	41	66	02:15-02:30	28	28	56	08:15-08:30	24	13	37
02:30-02:45	5	0	5	08:30-08:45	19	35	54	02:30-02:45	27	30	57	08:30-08:45	19	12	31
02:45-03:00	0	2	2	08:45-09:00	19	47	66	02:45-03:00	36	29	65	08:45-09:00	20	13	33
03:00-03:15	0	1	1	09:00-09:15	13	35	48	03:00-03:15	31	31	62	09:00-09:15	24	8	32
03:15-03:30	1	0	1	09:15-09:30	19	26	45	03:15-03:30	33	26	59	09:15-09:30	27	12	39
03:30-03:45	2	0	2	09:30-09:45	22	21	43	03:30-03:45	42	38	80	09:30-09:45	23	15	38
03:45-04:00	0	0	0	09:45-10:00	15	26	41	03:45-04:00	34	29	63	09:45-10:00	11	10	21
04:00-04:15	2	4	6	10:00-10:15	32	22	54	04:00-04:15	39	15	54	10:00-10:15	12	8	20
04:15-04:30	1	5	6	10:15-10:30	29	31	60	04:15-04:30	41	30	71	10:15-10:30	15	16	31
04:30-04:45	2	8	10	10:30-10:45	42	25	67	04:30-04:45	40	30	70	10:30-10:45	16	8	24
04:45-05:00	0	9	9	10:45-11:00	33	34	67	04:45-05:00	28	29	57	10:45-11:00	13	2	15
05:00-05:15	0	5	5	11:00-11:15	40	48	88	05:00-05:15	31	19	50	11:00-11:15	17	2	19
05:15-05:30	1	6	7	11:15-11:30	22	30	52	05:15-05:30	45	19	64	11:15-11:30	7	7	14
05:30-05:45	2	17	19	11:30-11:45	30	33	63	05:30-05:45	40	22	62	11:30-11:45	8	3	11
05:45-06:00	2	16	18	11:45-12:00	42	31	73	05:45-06:00	46	25	71	11:45-12:00	5	2	7

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	102	200	302
AM - K FACTOR (%)			8.05
AM - D (%)	33.77	66.23	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	06:45 AM to 07:45 AM	
AM - PEAK HR VOLUME	109	205	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	158	114	272
PM - K FACTOR (%)			7.25
PM - D (%)	58.09	41.91	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM	03:00 PM to 04:00 PM	
PM - PEAK HR VOLUME	162	124	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	102	200	302
AM - K FACTOR (%)			8.05
AM - D (%)	33.77	66.23	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	158	114	272
PM - K FACTOR (%)			7.25
PM - D (%)	58.09	41.91	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	10:15 AM to 11:15 AM		
PEAK HR VOLUME	144	138	282
DIRECTIONAL PEAK			
PEAK HR TIME	10:15 AM to 11:15 AM	10:45 AM to 11:45 AM	
PEAK HR VOLUME	144	145	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	553	831	1,384
AM 12-HR PERIOD (00:00-12:00)	592	919	1,511
PM 6-HR PERIOD (12:00-18:00)	792	630	1,422
PM 12-HR PERIOD (12:00-24:00)	1,300	942	2,242
24 HOUR PERIOD	1,892	1,861	3,753
D (%)	50.41	49.59	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/26/2015															
12:00-12:15	7	7	14	06:00-06:15	4	3	7	12:00-12:15	17	26	43	06:00-06:15	21	19	40
12:15-12:30	6	2	8	06:15-06:30	5	8	13	12:15-12:30	26	19	45	06:15-06:30	26	19	45
12:30-12:45	4	1	5	06:30-06:45	2	11	13	12:30-12:45	18	27	45	06:30-06:45	32	23	55
12:45-01:00	2	0	2	06:45-07:00	7	9	16	12:45-01:00	27	22	49	06:45-07:00	20	11	31
01:00-01:15	1	0	1	07:00-07:15	3	16	19	01:00-01:15	24	14	38	07:00-07:15	22	13	35
01:15-01:30	1	0	1	07:15-07:30	10	21	31	01:15-01:30	29	18	47	07:15-07:30	26	14	40
01:30-01:45	2	1	3	07:30-07:45	8	32	40	01:30-01:45	17	28	45	07:30-07:45	27	21	48
01:45-02:00	5	0	5	07:45-08:00	14	21	35	01:45-02:00	24	24	48	07:45-08:00	24	14	38
02:00-02:15	2	2	4	08:00-08:15	15	28	43	02:00-02:15	29	15	44	08:00-08:15	20	6	26
02:15-02:30	1	0	1	08:15-08:30	16	21	37	02:15-02:30	33	23	56	08:15-08:30	20	16	36
02:30-02:45	1	0	1	08:30-08:45	24	29	53	02:30-02:45	23	18	41	08:30-08:45	15	14	29
02:45-03:00	2	1	3	08:45-09:00	18	41	59	02:45-03:00	18	25	43	08:45-09:00	18	19	37
03:00-03:15	0	0	0	09:00-09:15	19	26	45	03:00-03:15	22	22	44	09:00-09:15	10	11	21
03:15-03:30	1	1	2	09:15-09:30	24	25	49	03:15-03:30	23	19	42	09:15-09:30	10	6	16
03:30-03:45	1	1	2	09:30-09:45	28	35	63	03:30-03:45	23	26	49	09:30-09:45	12	20	32
03:45-04:00	1	1	2	09:45-10:00	16	27	43	03:45-04:00	20	10	30	09:45-10:00	15	9	24
04:00-04:15	0	0	0	10:00-10:15	25	35	60	04:00-04:15	23	22	45	10:00-10:15	13	3	16
04:15-04:30	0	1	1	10:15-10:30	14	25	39	04:15-04:30	23	18	41	10:15-10:30	15	3	18
04:30-04:45	0	2	2	10:30-10:45	17	26	43	04:30-04:45	20	21	41	10:30-10:45	6	5	11
04:45-05:00	1	5	6	10:45-11:00	31	29	60	04:45-05:00	26	10	36	10:45-11:00	10	5	15
05:00-05:15	1	4	5	11:00-11:15	24	21	45	05:00-05:15	21	15	36	11:00-11:15	6	1	7
05:15-05:30	0	1	1	11:15-11:30	25	19	44	05:15-05:30	16	23	39	11:15-11:30	8	0	8
05:30-05:45	0	7	7	11:30-11:45	17	28	45	05:30-05:45	30	21	51	11:30-11:45	1	1	2
05:45-06:00	1	3	4	11:45-12:00	25	22	47	05:45-06:00	38	19	57	11:45-12:00	1	0	1

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	73	119	192
AM - K FACTOR (%)			7.07
AM - D (%)	38.02	61.98	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	73	119	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM		
PM - PEAK HR VOLUME	117	80	197
PM - K FACTOR (%)			7.26
PM - D (%)	59.39	40.61	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	05:15 PM to 06:15 PM	
PM - PEAK HR VOLUME	117	82	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:45 AM to 09:45 AM		
AM - PEAK HR VOLUME	89	127	216
AM - K FACTOR (%)			7.96
AM - D (%)	41.20	58.80	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM		
PM - PEAK HR VOLUME	117	80	197
PM - K FACTOR (%)			7.26
PM - D (%)	59.39	40.61	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:15 AM to 10:15 AM		
PEAK HR VOLUME	93	122	215
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	109	122	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	391	558	949
AM 12-HR PERIOD (00:00-12:00)	431	598	1,029
PM 6-HR PERIOD (12:00-18:00)	570	485	1,055
PM 12-HR PERIOD (12:00-24:00)	948	738	1,686
24 HOUR PERIOD	1,379	1,336	2,715
D (%)	50.79	49.21	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/25/2015															
12:00-12:15	10	0	10	06:00-06:15	3	9	12	12:00-12:15	30	27	57	06:00-06:15	21	24	45
12:15-12:30	8	1	9	06:15-06:30	2	9	11	12:15-12:30	25	26	51	06:15-06:30	17	24	41
12:30-12:45	7	4	11	06:30-06:45	2	18	20	12:30-12:45	36	36	72	06:30-06:45	26	19	45
12:45-01:00	1	0	1	06:45-07:00	4	14	18	12:45-01:00	32	31	63	06:45-07:00	28	16	44
01:00-01:15	6	0	6	07:00-07:15	9	12	21	01:00-01:15	29	30	59	07:00-07:15	33	22	55
01:15-01:30	2	1	3	07:15-07:30	1	20	21	01:15-01:30	28	32	60	07:15-07:30	28	11	39
01:30-01:45	4	2	6	07:30-07:45	14	18	32	01:30-01:45	27	23	50	07:30-07:45	30	12	42
01:45-02:00	0	3	3	07:45-08:00	7	20	27	01:45-02:00	21	29	50	07:45-08:00	24	14	38
02:00-02:15	3	2	5	08:00-08:15	7	29	36	02:00-02:15	25	39	64	08:00-08:15	13	5	18
02:15-02:30	3	1	4	08:15-08:30	25	23	48	02:15-02:30	29	26	55	08:15-08:30	22	11	33
02:30-02:45	0	1	1	08:30-08:45	20	26	46	02:30-02:45	26	26	52	08:30-08:45	13	11	24
02:45-03:00	0	0	0	08:45-09:00	20	36	56	02:45-03:00	23	19	42	08:45-09:00	26	4	30
03:00-03:15	0	0	0	09:00-09:15	27	22	49	03:00-03:15	21	25	46	09:00-09:15	14	6	20
03:15-03:30	1	0	1	09:15-09:30	12	20	32	03:15-03:30	25	28	53	09:15-09:30	18	9	27
03:30-03:45	0	1	1	09:30-09:45	22	23	45	03:30-03:45	22	28	50	09:30-09:45	20	5	25
03:45-04:00	4	0	4	09:45-10:00	23	29	52	03:45-04:00	23	23	46	09:45-10:00	12	4	16
04:00-04:15	1	2	3	10:00-10:15	35	21	56	04:00-04:15	22	12	34	10:00-10:15	16	4	20
04:15-04:30	1	2	3	10:15-10:30	18	27	45	04:15-04:30	30	19	49	10:15-10:30	10	10	20
04:30-04:45	1	3	4	10:30-10:45	13	32	45	04:30-04:45	22	21	43	10:30-10:45	19	7	26
04:45-05:00	0	3	3	10:45-11:00	22	24	46	04:45-05:00	25	18	43	10:45-11:00	10	3	13
05:00-05:15	1	1	2	11:00-11:15	24	23	47	05:00-05:15	23	30	53	11:00-11:15	12	6	18
05:15-05:30	0	2	2	11:15-11:30	21	22	43	05:15-05:30	28	28	56	11:15-11:30	12	1	13
05:30-05:45	0	4	4	11:30-11:45	31	29	60	05:30-05:45	20	21	41	11:30-11:45	3	6	9
05:45-06:00	7	9	16	11:45-12:00	27	33	60	05:45-06:00	25	21	46	11:45-12:00	6	1	7

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	72	114	186
AM - K FACTOR (%)			6.34
AM - D (%)	38.71	61.29	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	72	114	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	96	100	196
PM - K FACTOR (%)			6.68
PM - D (%)	48.98	51.02	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM	03:00 PM to 04:00 PM	
PM - PEAK HR VOLUME	100	104	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM		
AM - PEAK HR VOLUME	103	107	210
AM - K FACTOR (%)			7.16
AM - D (%)	49.05	50.95	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	12:30 PM to 01:30 PM		
PM - PEAK HR VOLUME	125	129	254
PM - K FACTOR (%)			8.66
PM - D (%)	49.21	50.79	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM		
PEAK HR VOLUME	125	129	254
DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM	12:30 PM to 01:30 PM	
PEAK HR VOLUME	125	129	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	389	539	928
AM 12-HR PERIOD (00:00-12:00)	449	581	1,030
PM 6-HR PERIOD (12:00-18:00)	617	618	1,235
PM 12-HR PERIOD (12:00-24:00)	1,050	853	1,903
24 HOUR PERIOD	1,499	1,434	2,933
D (%)	51.11	48.89	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2015

Site ID: B72928000000 **Route No:** 9280 **Date From:** 2015/01/13 0:00
Town: Oahu **Direction:** +MP **Date To:** 2015/01/26 23:45
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

Functional Classification: 18 TEST NEW URBAN: MINOR COLLECTOR
REPORT TOTALS - 336 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	502	1.09%	1004
PC	32065	69.63%	64130
2A-4T	12874	27.96%	25748
LIGHT VEHICLE TOTALS	45441	98.68%	90882
HEAVY VEHICLES			
Bus	153	0.33%	382
SINGLE UNIT TRUCK			
2A-6T	100	0.22%	200
3A-SU	226	0.49%	678
4A-SU	6	0.01%	24
SINGLE-TRAILER TRUCKS			
4A-ST	32	0.07%	128
5A-ST	21	0.05%	105
6A-ST	50	0.11%	300
MULTI-TRAILER TRUCKS			
5A-MT	19	0.04%	95
6A-MT	1	0.00%	6
7A-MT	3	0.01%	21
HEAVY VEHICLE TOTALS	611	1.33%	1939
CLASSIFIED VEHICLES TOTALS	46052 (A)	100.00%	92821 (B)
UNCLASSIFIED VEHICLES TOTALS	-2	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.992

ROADTUBE EQUIVALENT(B/2) = 46411 (C)

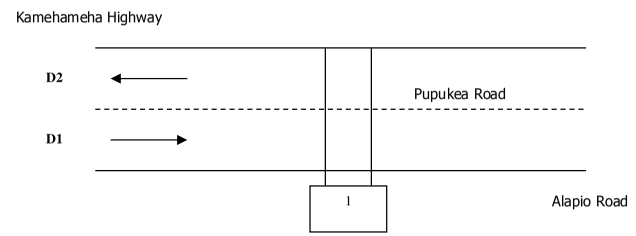
PEAK HOUR VOLUME : 310 2015/01/16 17:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	0	(65A-1) 0.00%	34	3400	(65A-2) 1.00%	9.12%
COMBINATION (TYPE 8-13)	1	(65B-1) 0.32%	8		(65B-2) 0.24%	9.12%

Traffic Data Service
Traffic Station Sketch

N

Island: Oahu
Area: Waimea

Section ID/Station #: B72928000000



Meter #	File Name	GPS
1. t161	D0421003_B72928000000	21.64597, -158.0592
2.	D0421004_B72928000000	

Station Description:
Pupukea Road: Kamehameha Highway to Alapio Road

Survey Beginning Date/Time: 4/21/15 @ 0000		Survey Ending Date/Time: 5/4/15 @ 2400

Survey Method:	Road Tube	Data Type:	Class
Survey Crew:	LM		C1B
Sketch Updated:		By:	SR
Remarks:	748		

FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	ROUTE MILE
Pupukea Road		18		9280	

D1= Direction to End — D1: Alapio Road / Kanalani Place
D2= Direction to Begin — D2: Kamehameha Highway / Kamehameha Highway

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/22/2015															
12:00-12:15	1	1	2	06:00-06:15	4	18	22	12:00-12:15	22	25	47	06:00-06:15	28	23	51
12:15-12:30	3	0	3	06:15-06:30	6	23	29	12:15-12:30	18	28	46	06:15-06:30	34	24	58
12:30-12:45	2	0	2	06:30-06:45	12	29	41	12:30-12:45	15	31	46	06:30-06:45	30	22	52
12:45-01:00	0	0	0	06:45-07:00	11	28	39	12:45-01:00	31	24	55	06:45-07:00	33	13	46
01:00-01:15	0	1	1	07:00-07:15	8	37	45	01:00-01:15	48	29	77	07:00-07:15	31	15	46
01:15-01:30	0	0	0	07:15-07:30	17	49	66	01:15-01:30	31	25	56	07:15-07:30	37	14	51
01:30-01:45	1	1	2	07:30-07:45	19	57	76	01:30-01:45	34	20	54	07:30-07:45	40	9	49
01:45-02:00	1	0	1	07:45-08:00	38	48	86	01:45-02:00	20	25	45	07:45-08:00	32	12	44
02:00-02:15	0	0	0	08:00-08:15	29	25	54	02:00-02:15	24	24	48	08:00-08:15	29	15	44
02:15-02:30	0	0	0	08:15-08:30	19	48	67	02:15-02:30	19	30	49	08:15-08:30	26	8	34
02:30-02:45	1	1	2	08:30-08:45	16	38	54	02:30-02:45	23	25	48	08:30-08:45	22	12	34
02:45-03:00	0	0	0	08:45-09:00	25	33	58	02:45-03:00	18	25	43	08:45-09:00	20	4	24
03:00-03:15	0	1	1	09:00-09:15	11	32	43	03:00-03:15	25	23	48	09:00-09:15	20	6	26
03:15-03:30	0	0	0	09:15-09:30	20	27	47	03:15-03:30	29	25	54	09:15-09:30	16	6	22
03:30-03:45	0	0	0	09:30-09:45	23	24	47	03:30-03:45	41	21	62	09:30-09:45	15	5	20
03:45-04:00	1	0	1	09:45-10:00	25	28	53	03:45-04:00	23	22	45	09:45-10:00	21	7	28
04:00-04:15	0	2	2	10:00-10:15	16	23	39	04:00-04:15	43	20	63	10:00-10:15	12	4	16
04:15-04:30	2	6	8	10:15-10:30	14	21	35	04:15-04:30	38	28	66	10:15-10:30	6	4	10
04:30-04:45	0	3	3	10:30-10:45	15	28	43	04:30-04:45	45	37	82	10:30-10:45	11	3	14
04:45-05:00	0	9	9	10:45-11:00	20	20	40	04:45-05:00	44	36	80	10:45-11:00	7	2	9
05:00-05:15	0	8	8	11:00-11:15	25	30	55	05:00-05:15	23	29	52	11:00-11:15	6	0	6
05:15-05:30	0	11	11	11:15-11:30	17	21	38	05:15-05:30	50	17	67	11:15-11:30	4	3	7
05:30-05:45	3	19	22	11:30-11:45	19	22	41	05:30-05:45	33	28	61	11:30-11:45	4	1	5
05:45-06:00	3	18	21	11:45-12:00	22	21	43	05:45-06:00	45	29	74	11:45-12:00	3	0	3

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	105	178	283
AM - K FACTOR (%)			8.51
AM - D (%)	37.10	62.90	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	105	191	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	170	121	291
PM - K FACTOR (%)			8.75
PM - D (%)	58.42	41.58	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	170	130	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	105	178	283
AM - K FACTOR (%)			8.51
AM - D (%)	37.10	62.90	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	170	121	291
PM - K FACTOR (%)			8.75
PM - D (%)	58.42	41.58	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:45 PM to 01:45 PM		
PEAK HR VOLUME	144	98	242
DIRECTIONAL PEAK			
PEAK HR TIME	12:45 PM to 01:45 PM	12:15 PM to 01:15 PM	
PEAK HR VOLUME	144	112	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	431	730	1,161
AM 12-HR PERIOD (00:00-12:00)	449	811	1,260
PM 6-HR PERIOD (12:00-18:00)	742	626	1,368
PM 12-HR PERIOD (12:00-24:00)	1,229	838	2,067
24 HOUR PERIOD	1,678	1,649	3,327
D (%)	50.44	49.56	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/21/2015															
12:00-12:15	3	1	4	06:00-06:15	5	18	23	12:00-12:15	22	26	48	06:00-06:15	24	18	42
12:15-12:30	1	0	1	06:15-06:30	6	20	26	12:15-12:30	29	28	57	06:15-06:30	42	16	58
12:30-12:45	1	0	1	06:30-06:45	7	25	32	12:30-12:45	20	21	41	06:30-06:45	30	10	40
12:45-01:00	1	0	1	06:45-07:00	13	33	46	12:45-01:00	28	15	43	06:45-07:00	23	11	34
01:00-01:15	2	1	3	07:00-07:15	8	31	39	01:00-01:15	16	15	31	07:00-07:15	28	9	37
01:15-01:30	0	0	0	07:15-07:30	3	48	51	01:15-01:30	24	29	53	07:15-07:30	29	4	33
01:30-01:45	1	1	2	07:30-07:45	20	54	74	01:30-01:45	23	24	47	07:30-07:45	23	18	41
01:45-02:00	0	0	0	07:45-08:00	33	36	69	01:45-02:00	16	38	54	07:45-08:00	31	12	43
02:00-02:15	0	0	0	08:00-08:15	19	17	36	02:00-02:15	19	38	57	08:00-08:15	23	9	32
02:15-02:30	3	1	4	08:15-08:30	27	40	67	02:15-02:30	44	19	63	08:15-08:30	21	6	27
02:30-02:45	2	0	2	08:30-08:45	13	26	39	02:30-02:45	32	15	47	08:30-08:45	18	10	28
02:45-03:00	0	1	1	08:45-09:00	23	43	66	02:45-03:00	15	16	31	08:45-09:00	14	10	24
03:00-03:15	1	1	2	09:00-09:15	16	28	44	03:00-03:15	29	20	49	09:00-09:15	16	3	19
03:15-03:30	1	1	2	09:15-09:30	16	40	56	03:15-03:30	37	18	55	09:15-09:30	16	7	23
03:30-03:45	0	1	1	09:30-09:45	15	31	46	03:30-03:45	37	26	63	09:30-09:45	13	10	23
03:45-04:00	0	0	0	09:45-10:00	16	26	42	03:45-04:00	29	18	47	09:45-10:00	17	4	21
04:00-04:15	0	0	0	10:00-10:15	13	20	33	04:00-04:15	31	21	52	10:00-10:15	7	5	12
04:15-04:30	0	8	8	10:15-10:30	18	30	48	04:15-04:30	37	32	69	10:15-10:30	5	1	6
04:30-04:45	0	6	6	10:30-10:45	15	24	39	04:30-04:45	38	22	60	10:30-10:45	4	1	5
04:45-05:00	0	12	12	10:45-11:00	27	19	46	04:45-05:00	35	21	56	10:45-11:00	8	2	10
05:00-05:15	0	8	8	11:00-11:15	17	25	42	05:00-05:15	31	17	48	11:00-11:15	5	2	7
05:15-05:30	0	15	15	11:15-11:30	23	27	50	05:15-05:30	36	24	60	11:15-11:30	4	1	5
05:30-05:45	4	16	20	11:30-11:45	13	17	30	05:30-05:45	28	22	50	11:30-11:45	3	3	6
05:45-06:00	1	20	21	11:45-12:00	25	20	45	05:45-06:00	42	13	55	11:45-12:00	3	0	3

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	99	147	246
AM - K FACTOR (%)			8.15
AM - D (%)	40.24	59.76	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	99	169	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	141	96	237
PM - K FACTOR (%)			7.85
PM - D (%)	59.49	40.51	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	141	97	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	99	147	246
AM - K FACTOR (%)			8.15
AM - D (%)	40.24	59.76	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	141	96	237
PM - K FACTOR (%)			7.85
PM - D (%)	59.49	40.51	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM		
PEAK HR VOLUME	102	119	221
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	01:15 PM to 02:15 PM	
PEAK HR VOLUME	111	129	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	391	698	1,089
AM 12-HR PERIOD (00:00-12:00)	412	791	1,203
PM 6-HR PERIOD (12:00-18:00)	698	538	1,236
PM 12-HR PERIOD (12:00-24:00)	1,105	710	1,815
24 HOUR PERIOD	1,517	1,501	3,018
D (%)	50.27	49.73	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/24/2015															
12:00-12:15	4	2	6	06:00-06:15	3	16	19	12:00-12:15	20	18	38	06:00-06:15	34	31	65
12:15-12:30	2	0	2	06:15-06:30	5	20	25	12:15-12:30	20	21	41	06:15-06:30	30	23	53
12:30-12:45	4	1	5	06:30-06:45	12	22	34	12:30-12:45	21	24	45	06:30-06:45	20	26	46
12:45-01:00	0	0	0	06:45-07:00	5	28	33	12:45-01:00	23	24	47	06:45-07:00	26	18	44
01:00-01:15	0	0	0	07:00-07:15	17	36	53	01:00-01:15	24	21	45	07:00-07:15	34	9	43
01:15-01:30	3	1	4	07:15-07:30	11	50	61	01:15-01:30	16	26	42	07:15-07:30	30	13	43
01:30-01:45	1	0	1	07:30-07:45	21	65	86	01:30-01:45	25	24	49	07:30-07:45	41	18	59
01:45-02:00	1	1	2	07:45-08:00	39	39	78	01:45-02:00	22	29	51	07:45-08:00	24	16	40
02:00-02:15	2	0	2	08:00-08:15	23	38	61	02:00-02:15	25	28	53	08:00-08:15	23	5	28
02:15-02:30	2	1	3	08:15-08:30	24	32	56	02:15-02:30	41	26	67	08:15-08:30	17	5	22
02:30-02:45	1	1	2	08:30-08:45	22	41	63	02:30-02:45	35	22	57	08:30-08:45	28	10	38
02:45-03:00	1	0	1	08:45-09:00	29	32	61	02:45-03:00	36	22	58	08:45-09:00	25	12	37
03:00-03:15	2	1	3	09:00-09:15	16	22	38	03:00-03:15	32	25	57	09:00-09:15	11	8	19
03:15-03:30	0	0	0	09:15-09:30	15	40	55	03:15-03:30	25	24	49	09:15-09:30	16	5	21
03:30-03:45	0	1	1	09:30-09:45	15	32	47	03:30-03:45	38	30	68	09:30-09:45	21	6	27
03:45-04:00	0	0	0	09:45-10:00	16	25	41	03:45-04:00	33	28	61	09:45-10:00	18	5	23
04:00-04:15	0	3	3	10:00-10:15	13	17	30	04:00-04:15	33	22	55	10:00-10:15	19	5	24
04:15-04:30	1	11	12	10:15-10:30	18	25	43	04:15-04:30	31	20	51	10:15-10:30	15	12	27
04:30-04:45	0	6	6	10:30-10:45	24	34	58	04:30-04:45	35	25	60	10:30-10:45	13	4	17
04:45-05:00	0	9	9	10:45-11:00	20	33	53	04:45-05:00	35	30	65	10:45-11:00	10	4	14
05:00-05:15	0	12	12	11:00-11:15	12	20	32	05:00-05:15	37	41	78	11:00-11:15	18	6	24
05:15-05:30	3	12	15	11:15-11:30	14	20	34	05:15-05:30	43	24	67	11:15-11:30	11	3	14
05:30-05:45	0	14	14	11:30-11:45	29	20	49	05:30-05:45	40	26	66	11:30-11:45	5	2	7
05:45-06:00	1	11	12	11:45-12:00	28	13	41	05:45-06:00	44	17	61	11:45-12:00	10	3	13

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	94	192	286
AM - K FACTOR (%)			8.55
AM - D (%)	32.87	67.13	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	108	192	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	155	121	276
PM - K FACTOR (%)			8.25
PM - D (%)	56.16	43.84	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	164	121	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	94	192	286
AM - K FACTOR (%)			8.55
AM - D (%)	32.87	67.13	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	155	121	276
PM - K FACTOR (%)			8.25
PM - D (%)	56.16	43.84	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	137	98	235
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	137	119	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	431	720	1,151
AM 12-HR PERIOD (00:00-12:00)	459	807	1,266
PM 6-HR PERIOD (12:00-18:00)	734	597	1,331
PM 12-HR PERIOD (12:00-24:00)	1,233	846	2,079
24 HOUR PERIOD	1,692	1,653	3,345
D (%)	50.58	49.42	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/23/2015															
12:00-12:15	8	1	9	06:00-06:15	6	13	19	12:00-12:15	15	22	37	06:00-06:15	30	13	43
12:15-12:30	5	0	5	06:15-06:30	3	23	26	12:15-12:30	26	25	51	06:15-06:30	31	21	52
12:30-12:45	0	0	0	06:30-06:45	14	24	38	12:30-12:45	24	12	36	06:30-06:45	31	15	46
12:45-01:00	2	0	2	06:45-07:00	8	30	38	12:45-01:00	17	26	43	06:45-07:00	37	22	59
01:00-01:15	0	0	0	07:00-07:15	10	31	41	01:00-01:15	24	28	52	07:00-07:15	44	20	64
01:15-01:30	0	0	0	07:15-07:30	16	36	52	01:15-01:30	21	27	48	07:15-07:30	29	15	44
01:30-01:45	1	0	1	07:30-07:45	21	63	84	01:30-01:45	18	14	32	07:30-07:45	35	14	49
01:45-02:00	1	0	1	07:45-08:00	36	37	73	01:45-02:00	16	24	40	07:45-08:00	25	9	34
02:00-02:15	1	0	1	08:00-08:15	16	38	54	02:00-02:15	27	29	56	08:00-08:15	12	4	16
02:15-02:30	1	0	1	08:15-08:30	23	26	49	02:15-02:30	30	24	54	08:15-08:30	26	7	33
02:30-02:45	0	0	0	08:30-08:45	18	40	58	02:30-02:45	31	21	52	08:30-08:45	20	5	25
02:45-03:00	0	1	1	08:45-09:00	18	42	60	02:45-03:00	25	12	37	08:45-09:00	16	7	23
03:00-03:15	2	1	3	09:00-09:15	22	26	48	03:00-03:15	30	34	64	09:00-09:15	11	5	16
03:15-03:30	0	0	0	09:15-09:30	13	33	46	03:15-03:30	25	16	41	09:15-09:30	11	4	15
03:30-03:45	0	0	0	09:30-09:45	18	34	52	03:30-03:45	35	32	67	09:30-09:45	25	4	29
03:45-04:00	0	0	0	09:45-10:00	16	28	44	03:45-04:00	37	20	57	09:45-10:00	13	3	16
04:00-04:15	0	2	2	10:00-10:15	14	22	36	04:00-04:15	41	29	70	10:00-10:15	17	4	21
04:15-04:30	0	1	1	10:15-10:30	18	25	43	04:15-04:30	44	24	68	10:15-10:30	9	2	11
04:30-04:45	0	7	7	10:30-10:45	18	27	45	04:30-04:45	37	25	62	10:30-10:45	7	3	10
04:45-05:00	0	10	10	10:45-11:00	24	22	46	04:45-05:00	45	24	69	10:45-11:00	4	0	4
05:00-05:15	0	10	10	11:00-11:15	20	22	42	05:00-05:15	28	20	48	11:00-11:15	8	0	8
05:15-05:30	0	11	11	11:15-11:30	14	15	29	05:15-05:30	31	33	64	11:15-11:30	8	1	9
05:30-05:45	1	21	22	11:30-11:45	25	16	41	05:30-05:45	29	21	50	11:30-11:45	7	2	9
05:45-06:00	2	20	22	11:45-12:00	16	26	42	05:45-06:00	29	15	44	11:45-12:00	7	4	11

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	89	174	263
AM - K FACTOR (%)			8.47
AM - D (%)	33.84	66.16	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	96	174	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	167	102	269
PM - K FACTOR (%)			8.67
PM - D (%)	62.08	37.92	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	167	105	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	89	174	263
AM - K FACTOR (%)			8.47
AM - D (%)	33.84	66.16	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	167	102	269
PM - K FACTOR (%)			8.67
PM - D (%)	62.08	37.92	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	104	98	202
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	113	121	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	407	699	1,106
AM 12-HR PERIOD (00:00-12:00)	431	784	1,215
PM 6-HR PERIOD (12:00-18:00)	685	557	1,242
PM 12-HR PERIOD (12:00-24:00)	1,148	741	1,889
24 HOUR PERIOD	1,579	1,525	3,104
D (%)	50.87	49.13	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/26/2015															
12:00-12:15	5	1	6	06:00-06:15	2	11	13	12:00-12:15	27	20	47	06:00-06:15	22	27	49
12:15-12:30	9	3	12	06:15-06:30	3	7	10	12:15-12:30	21	27	48	06:15-06:30	26	19	45
12:30-12:45	6	1	7	06:30-06:45	1	11	12	12:30-12:45	33	22	55	06:30-06:45	25	18	43
12:45-01:00	5	0	5	06:45-07:00	5	15	20	12:45-01:00	26	23	49	06:45-07:00	27	13	40
01:00-01:15	4	1	5	07:00-07:15	8	15	23	01:00-01:15	48	17	65	07:00-07:15	34	10	44
01:15-01:30	3	3	6	07:15-07:30	4	11	15	01:15-01:30	27	26	53	07:15-07:30	27	11	38
01:30-01:45	2	1	3	07:30-07:45	11	17	28	01:30-01:45	25	19	44	07:30-07:45	30	14	44
01:45-02:00	6	2	8	07:45-08:00	10	31	41	01:45-02:00	25	28	53	07:45-08:00	27	10	37
02:00-02:15	1	0	1	08:00-08:15	13	19	32	02:00-02:15	32	26	58	08:00-08:15	17	15	32
02:15-02:30	3	0	3	08:15-08:30	13	27	40	02:15-02:30	33	20	53	08:15-08:30	11	6	17
02:30-02:45	0	0	0	08:30-08:45	12	30	42	02:30-02:45	15	27	42	08:30-08:45	20	10	30
02:45-03:00	0	2	2	08:45-09:00	15	27	42	02:45-03:00	14	22	36	08:45-09:00	13	4	17
03:00-03:15	0	0	0	09:00-09:15	14	34	48	03:00-03:15	17	27	44	09:00-09:15	12	5	17
03:15-03:30	1	0	1	09:15-09:30	15	26	41	03:15-03:30	26	28	54	09:15-09:30	9	5	14
03:30-03:45	0	2	2	09:30-09:45	11	29	40	03:30-03:45	25	30	55	09:30-09:45	11	7	18
03:45-04:00	1	1	2	09:45-10:00	14	31	45	03:45-04:00	15	26	41	09:45-10:00	16	4	20
04:00-04:15	0	1	1	10:00-10:15	14	26	40	04:00-04:15	27	28	55	10:00-10:15	9	0	9
04:15-04:30	0	0	0	10:15-10:30	22	21	43	04:15-04:30	14	21	35	10:15-10:30	9	7	16
04:30-04:45	0	4	4	10:30-10:45	23	26	49	04:30-04:45	26	19	45	10:30-10:45	7	2	9
04:45-05:00	1	0	1	10:45-11:00	22	32	54	04:45-05:00	31	31	62	10:45-11:00	8	4	12
05:00-05:15	0	6	6	11:00-11:15	22	13	35	05:00-05:15	19	26	45	11:00-11:15	4	4	8
05:15-05:30	1	2	3	11:15-11:30	26	29	55	05:15-05:30	30	15	45	11:15-11:30	2	4	6
05:30-05:45	0	8	8	11:30-11:45	27	28	55	05:30-05:45	38	23	61	11:30-11:45	4	1	5
05:45-06:00	0	5	5	11:45-12:00	33	18	51	05:45-06:00	26	26	52	11:45-12:00	0	3	3

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	53	103	156
AM - K FACTOR (%)			5.70
AM - D (%)	33.97	66.03	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:45 AM to 08:45 AM	
AM - PEAK HR VOLUME	53	107	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	118	95	213
PM - K FACTOR (%)			7.79
PM - D (%)	55.40	44.60	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM	03:15 PM to 04:15 PM	
PM - PEAK HR VOLUME	118	112	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	10:45 AM to 11:45 AM		
AM - PEAK HR VOLUME	97	102	199
AM - K FACTOR (%)			7.28
AM - D (%)	48.74	51.26	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	12:30 PM to 01:30 PM		
PM - PEAK HR VOLUME	134	88	222
PM - K FACTOR (%)			8.12
PM - D (%)	60.36	39.64	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM		
PEAK HR VOLUME	134	88	222
DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	134	120	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	340	534	874
AM 12-HR PERIOD (00:00-12:00)	388	577	965
PM 6-HR PERIOD (12:00-18:00)	620	577	1,197
PM 12-HR PERIOD (12:00-24:00)	990	780	1,770
24 HOUR PERIOD	1,378	1,357	2,735
D (%)	50.38	49.62	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/25/2015															
12:00-12:15	4	1	5	06:00-06:15	2	12	14	12:00-12:15	28	19	47	06:00-06:15	25	25	50
12:15-12:30	2	0	2	06:15-06:30	6	6	12	12:15-12:30	32	22	54	06:15-06:30	27	18	45
12:30-12:45	3	1	4	06:30-06:45	3	17	20	12:30-12:45	36	17	53	06:30-06:45	12	7	19
12:45-01:00	1	0	1	06:45-07:00	5	9	14	12:45-01:00	27	40	67	06:45-07:00	15	18	33
01:00-01:15	3	0	3	07:00-07:15	7	26	33	01:00-01:15	23	27	50	07:00-07:15	35	21	56
01:15-01:30	2	0	2	07:15-07:30	6	21	27	01:15-01:30	22	28	50	07:15-07:30	26	13	39
01:30-01:45	0	1	1	07:30-07:45	10	27	37	01:30-01:45	30	23	53	07:30-07:45	26	17	43
01:45-02:00	1	0	1	07:45-08:00	10	29	39	01:45-02:00	30	16	46	07:45-08:00	24	19	43
02:00-02:15	1	0	1	08:00-08:15	24	24	48	02:00-02:15	34	29	63	08:00-08:15	18	13	31
02:15-02:30	2	0	2	08:15-08:30	10	22	32	02:15-02:30	21	24	45	08:15-08:30	10	16	26
02:30-02:45	0	0	0	08:30-08:45	13	32	45	02:30-02:45	41	17	58	08:30-08:45	20	7	27
02:45-03:00	1	0	1	08:45-09:00	20	32	52	02:45-03:00	30	27	57	08:45-09:00	17	11	28
03:00-03:15	2	0	2	09:00-09:15	15	29	44	03:00-03:15	31	24	55	09:00-09:15	9	12	21
03:15-03:30	0	0	0	09:15-09:30	25	17	42	03:15-03:30	33	26	59	09:15-09:30	20	7	27
03:30-03:45	1	1	2	09:30-09:45	29	37	66	03:30-03:45	22	30	52	09:30-09:45	32	5	37
03:45-04:00	0	2	2	09:45-10:00	22	36	58	03:45-04:00	34	12	46	09:45-10:00	14	5	19
04:00-04:15	0	2	2	10:00-10:15	23	31	54	04:00-04:15	22	22	44	10:00-10:15	10	7	17
04:15-04:30	0	3	3	10:15-10:30	15	45	60	04:15-04:30	38	24	62	10:15-10:30	11	4	15
04:30-04:45	1	1	2	10:30-10:45	19	26	45	04:30-04:45	23	13	36	10:30-10:45	20	3	23
04:45-05:00	0	1	1	10:45-11:00	23	32	55	04:45-05:00	25	21	46	10:45-11:00	10	3	13
05:00-05:15	1	7	8	11:00-11:15	17	23	40	05:00-05:15	19	23	42	11:00-11:15	10	3	13
05:15-05:30	1	5	6	11:15-11:30	24	25	49	05:15-05:30	34	17	51	11:15-11:30	8	1	9
05:30-05:45	1	7	8	11:30-11:45	27	28	55	05:30-05:45	28	22	50	11:30-11:45	6	1	7
05:45-06:00	2	7	9	11:45-12:00	15	22	37	05:45-06:00	22	23	45	11:45-12:00	11	2	13

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	67	110	177
AM - K FACTOR (%)			6.04
AM - D (%)	37.85	62.15	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	67	110	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM		
PM - PEAK HR VOLUME	120	92	212
PM - K FACTOR (%)			7.23
PM - D (%)	56.60	43.40	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM	03:00 PM to 04:00 PM	
PM - PEAK HR VOLUME	120	92	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:30 AM to 10:30 AM		
AM - PEAK HR VOLUME	89	149	238
AM - K FACTOR (%)			8.12
AM - D (%)	37.39	62.61	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	02:30 PM to 03:30 PM		
PM - PEAK HR VOLUME	135	94	229
PM - K FACTOR (%)			7.81
PM - D (%)	58.95	41.05	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:30 AM to 10:30 AM		
PEAK HR VOLUME	89	149	238
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	09:30 AM to 10:30 AM	
PEAK HR VOLUME	126	149	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	370	608	978
AM 12-HR PERIOD (00:00-12:00)	399	647	1,046
PM 6-HR PERIOD (12:00-18:00)	685	546	1,231
PM 12-HR PERIOD (12:00-24:00)	1,101	784	1,885
24 HOUR PERIOD	1,500	1,431	2,931
D (%)	51.18	48.82	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/28/2015															
12:00-12:15	6	1	7	06:00-06:15	5	18	23	12:00-12:15	30	18	48	06:00-06:15	37	29	66
12:15-12:30	2	0	2	06:15-06:30	3	17	20	12:15-12:30	17	21	38	06:15-06:30	39	26	65
12:30-12:45	0	1	1	06:30-06:45	8	19	27	12:30-12:45	21	26	47	06:30-06:45	22	11	33
12:45-01:00	1	0	1	06:45-07:00	9	37	46	12:45-01:00	34	20	54	06:45-07:00	37	18	55
01:00-01:15	0	0	0	07:00-07:15	9	32	41	01:00-01:15	20	30	50	07:00-07:15	36	12	48
01:15-01:30	1	0	1	07:15-07:30	9	41	50	01:15-01:30	30	17	47	07:15-07:30	28	19	47
01:30-01:45	2	1	3	07:30-07:45	21	67	88	01:30-01:45	18	37	55	07:30-07:45	44	5	49
01:45-02:00	2	0	2	07:45-08:00	32	36	68	01:45-02:00	18	28	46	07:45-08:00	20	10	30
02:00-02:15	0	0	0	08:00-08:15	21	35	56	02:00-02:15	23	28	51	08:00-08:15	15	11	26
02:15-02:30	0	1	1	08:15-08:30	16	31	47	02:15-02:30	40	20	60	08:15-08:30	23	8	31
02:30-02:45	0	0	0	08:30-08:45	20	31	51	02:30-02:45	31	19	50	08:30-08:45	18	7	25
02:45-03:00	0	2	2	08:45-09:00	17	35	52	02:45-03:00	35	28	63	08:45-09:00	11	10	21
03:00-03:15	0	0	0	09:00-09:15	19	37	56	03:00-03:15	31	19	50	09:00-09:15	19	4	23
03:15-03:30	0	0	0	09:15-09:30	15	35	50	03:15-03:30	35	23	58	09:15-09:30	17	8	25
03:30-03:45	0	0	0	09:30-09:45	22	36	58	03:30-03:45	34	30	64	09:30-09:45	16	8	24
03:45-04:00	0	1	1	09:45-10:00	19	23	42	03:45-04:00	30	17	47	09:45-10:00	22	3	25
04:00-04:15	1	2	3	10:00-10:15	10	20	30	04:00-04:15	29	23	52	10:00-10:15	8	6	14
04:15-04:30	0	4	4	10:15-10:30	20	30	50	04:15-04:30	43	25	68	10:15-10:30	18	1	19
04:30-04:45	0	6	6	10:30-10:45	18	34	52	04:30-04:45	28	40	68	10:30-10:45	21	2	23
04:45-05:00	0	7	7	10:45-11:00	20	22	42	04:45-05:00	26	34	60	10:45-11:00	13	4	17
05:00-05:15	0	14	14	11:00-11:15	12	18	30	05:00-05:15	38	30	68	11:00-11:15	10	1	11
05:15-05:30	1	14	15	11:15-11:30	16	18	34	05:15-05:30	38	16	54	11:15-11:30	5	2	7
05:30-05:45	2	14	16	11:30-11:45	21	32	53	05:30-05:45	34	21	55	11:30-11:45	7	0	7
05:45-06:00	4	12	16	11:45-12:00	26	24	50	05:45-06:00	33	11	44	11:45-12:00	4	0	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	83	179	262
AM - K FACTOR (%)			8.16
AM - D (%)	31.68	68.32	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	90	179	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	135	129	264
PM - K FACTOR (%)			8.22
PM - D (%)	51.14	48.86	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	143	129	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	83	179	262
AM - K FACTOR (%)			8.16
AM - D (%)	31.68	68.32	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	135	129	264
PM - K FACTOR (%)			8.22
PM - D (%)	51.14	48.86	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	129	95	224
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	129	131	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	388	728	1,116
AM 12-HR PERIOD (00:00-12:00)	410	808	1,218
PM 6-HR PERIOD (12:00-18:00)	716	581	1,297
PM 12-HR PERIOD (12:00-24:00)	1,206	786	1,992
24 HOUR PERIOD	1,616	1,594	3,210
D (%)	50.34	49.66	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/27/2015															
12:00-12:15	3	2	5	06:00-06:15	6	16	22	12:00-12:15	19	14	33	06:00-06:15	30	21	51
12:15-12:30	2	1	3	06:15-06:30	0	10	10	12:15-12:30	16	25	41	06:15-06:30	30	24	54
12:30-12:45	2	1	3	06:30-06:45	7	29	36	12:30-12:45	20	20	40	06:30-06:45	37	17	54
12:45-01:00	1	0	1	06:45-07:00	10	30	40	12:45-01:00	22	12	34	06:45-07:00	34	11	45
01:00-01:15	6	2	8	07:00-07:15	8	30	38	01:00-01:15	28	20	48	07:00-07:15	38	14	52
01:15-01:30	0	1	1	07:15-07:30	10	53	63	01:15-01:30	19	21	40	07:15-07:30	25	11	36
01:30-01:45	2	2	4	07:30-07:45	16	46	62	01:30-01:45	14	18	32	07:30-07:45	39	14	53
01:45-02:00	1	0	1	07:45-08:00	36	39	75	01:45-02:00	30	19	49	07:45-08:00	23	6	29
02:00-02:15	1	0	1	08:00-08:15	26	30	56	02:00-02:15	14	31	45	08:00-08:15	21	4	25
02:15-02:30	3	0	3	08:15-08:30	18	30	48	02:15-02:30	28	20	48	08:15-08:30	25	7	32
02:30-02:45	1	0	1	08:30-08:45	14	34	48	02:30-02:45	27	23	50	08:30-08:45	13	5	18
02:45-03:00	0	0	0	08:45-09:00	26	31	57	02:45-03:00	33	19	52	08:45-09:00	19	5	24
03:00-03:15	1	1	2	09:00-09:15	15	30	45	03:00-03:15	30	20	50	09:00-09:15	15	11	26
03:15-03:30	0	0	0	09:15-09:30	14	24	38	03:15-03:30	33	25	58	09:15-09:30	6	7	13
03:30-03:45	0	1	1	09:30-09:45	16	23	39	03:30-03:45	34	22	56	09:30-09:45	16	4	20
03:45-04:00	0	1	1	09:45-10:00	22	37	59	03:45-04:00	28	17	45	09:45-10:00	11	3	14
04:00-04:15	0	1	1	10:00-10:15	6	26	32	04:00-04:15	32	19	51	10:00-10:15	13	3	16
04:15-04:30	1	6	7	10:15-10:30	12	21	33	04:15-04:30	49	29	78	10:15-10:30	7	3	10
04:30-04:45	0	3	3	10:30-10:45	12	24	36	04:30-04:45	35	29	64	10:30-10:45	11	2	13
04:45-05:00	0	9	9	10:45-11:00	13	18	31	04:45-05:00	34	25	59	10:45-11:00	7	1	8
05:00-05:15	1	14	15	11:00-11:15	27	18	45	05:00-05:15	32	19	51	11:00-11:15	5	3	8
05:15-05:30	1	15	16	11:15-11:30	15	21	36	05:15-05:30	44	21	65	11:15-11:30	5	0	5
05:30-05:45	1	12	13	11:30-11:45	21	23	44	05:30-05:45	41	14	55	11:30-11:45	4	0	4
05:45-06:00	1	17	18	11:45-12:00	19	17	36	05:45-06:00	32	26	58	11:45-12:00	3	2	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	88	168	256
AM - K FACTOR (%)			8.64
AM - D (%)	34.38	65.63	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	96	168	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	150	102	252
PM - K FACTOR (%)			8.50
PM - D (%)	59.52	40.48	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	151	102	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	88	168	256
AM - K FACTOR (%)			8.64
AM - D (%)	34.38	65.63	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	150	102	252
PM - K FACTOR (%)			8.50
PM - D (%)	59.52	40.48	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	102	93	195
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	102	114	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	369	660	1,029
AM 12-HR PERIOD (00:00-12:00)	397	749	1,146
PM 6-HR PERIOD (12:00-18:00)	694	508	1,202
PM 12-HR PERIOD (12:00-24:00)	1,131	686	1,817
24 HOUR PERIOD	1,528	1,435	2,963
D (%)	51.57	48.43	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/30/2015															
12:00-12:15	1	1	2	06:00-06:15	3	18	21	12:00-12:15	22	28	50	06:00-06:15	31	18	49
12:15-12:30	2	1	3	06:15-06:30	5	12	17	12:15-12:30	23	28	51	06:15-06:30	41	20	61
12:30-12:45	6	1	7	06:30-06:45	10	26	36	12:30-12:45	27	19	46	06:30-06:45	25	14	39
12:45-01:00	1	0	1	06:45-07:00	8	30	38	12:45-01:00	19	26	45	06:45-07:00	27	18	45
01:00-01:15	0	0	0	07:00-07:15	12	25	37	01:00-01:15	32	26	58	07:00-07:15	29	14	43
01:15-01:30	0	0	0	07:15-07:30	8	46	54	01:15-01:30	23	25	48	07:15-07:30	35	15	50
01:30-01:45	2	1	3	07:30-07:45	17	75	92	01:30-01:45	15	27	42	07:30-07:45	39	12	51
01:45-02:00	0	0	0	07:45-08:00	31	38	69	01:45-02:00	21	32	53	07:45-08:00	24	17	41
02:00-02:15	1	0	1	08:00-08:15	31	27	58	02:00-02:15	23	36	59	08:00-08:15	25	15	40
02:15-02:30	0	0	0	08:15-08:30	15	34	49	02:15-02:30	46	20	66	08:15-08:30	23	6	29
02:30-02:45	1	1	2	08:30-08:45	15	23	38	02:30-02:45	25	20	45	08:30-08:45	21	8	29
02:45-03:00	0	0	0	08:45-09:00	27	34	61	02:45-03:00	31	19	50	08:45-09:00	22	8	30
03:00-03:15	0	2	2	09:00-09:15	13	34	47	03:00-03:15	33	26	59	09:00-09:15	17	2	19
03:15-03:30	1	0	1	09:15-09:30	25	36	61	03:15-03:30	34	23	57	09:15-09:30	18	8	26
03:30-03:45	0	0	0	09:30-09:45	19	34	53	03:30-03:45	23	21	44	09:30-09:45	18	4	22
03:45-04:00	0	0	0	09:45-10:00	17	27	44	03:45-04:00	31	24	55	09:45-10:00	13	3	16
04:00-04:15	0	5	5	10:00-10:15	17	19	36	04:00-04:15	46	28	74	10:00-10:15	7	5	12
04:15-04:30	0	3	3	10:15-10:30	22	30	52	04:15-04:30	35	22	57	10:15-10:30	15	2	17
04:30-04:45	2	3	5	10:30-10:45	20	32	52	04:30-04:45	27	25	52	10:30-10:45	13	3	16
04:45-05:00	2	6	8	10:45-11:00	15	27	42	04:45-05:00	45	25	70	10:45-11:00	8	2	10
05:00-05:15	0	10	10	11:00-11:15	32	28	60	05:00-05:15	33	30	63	11:00-11:15	3	2	5
05:15-05:30	0	11	11	11:15-11:30	22	15	37	05:15-05:30	34	18	52	11:15-11:30	9	1	10
05:30-05:45	2	14	16	11:30-11:45	18	26	44	05:30-05:45	33	20	53	11:30-11:45	4	1	5
05:45-06:00	2	17	19	11:45-12:00	22	26	48	05:45-06:00	26	27	53	11:45-12:00	3	1	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	87	186	273
AM - K FACTOR (%)			8.49
AM - D (%)	31.87	68.13	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	94	186	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	153	100	253
PM - K FACTOR (%)			7.87
PM - D (%)	60.47	39.53	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	153	102	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	87	186	273
AM - K FACTOR (%)			8.49
AM - D (%)	31.87	68.13	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	153	100	253
PM - K FACTOR (%)			7.87
PM - D (%)	60.47	39.53	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	115	108	223
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	125	131	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	424	722	1,146
AM 12-HR PERIOD (00:00-12:00)	447	798	1,245
PM 6-HR PERIOD (12:00-18:00)	707	595	1,302
PM 12-HR PERIOD (12:00-24:00)	1,177	794	1,971
24 HOUR PERIOD	1,624	1,592	3,216
D (%)	50.50	49.50	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 04/29/2015															
12:00-12:15	2	0	2	06:00-06:15	5	22	27	12:00-12:15	20	28	48	06:00-06:15	32	19	51
12:15-12:30	5	1	6	06:15-06:30	5	12	17	12:15-12:30	18	26	44	06:15-06:30	31	18	49
12:30-12:45	4	4	8	06:30-06:45	9	24	33	12:30-12:45	24	35	59	06:30-06:45	30	13	43
12:45-01:00	3	1	4	06:45-07:00	12	31	43	12:45-01:00	28	23	51	06:45-07:00	36	12	48
01:00-01:15	4	0	4	07:00-07:15	7	26	33	01:00-01:15	40	26	66	07:00-07:15	23	19	42
01:15-01:30	3	1	4	07:15-07:30	11	48	59	01:15-01:30	36	23	59	07:15-07:30	35	9	44
01:30-01:45	1	3	4	07:30-07:45	15	66	81	01:30-01:45	29	22	51	07:30-07:45	26	9	35
01:45-02:00	4	2	6	07:45-08:00	32	44	76	01:45-02:00	19	16	35	07:45-08:00	25	8	33
02:00-02:15	0	2	2	08:00-08:15	29	28	57	02:00-02:15	25	24	49	08:00-08:15	18	9	27
02:15-02:30	0	0	0	08:15-08:30	11	42	53	02:15-02:30	24	26	50	08:15-08:30	28	6	34
02:30-02:45	3	0	3	08:30-08:45	9	41	50	02:30-02:45	36	26	62	08:30-08:45	14	7	21
02:45-03:00	0	2	2	08:45-09:00	19	27	46	02:45-03:00	24	23	47	08:45-09:00	17	6	23
03:00-03:15	1	3	4	09:00-09:15	18	24	42	03:00-03:15	33	17	50	09:00-09:15	20	6	26
03:15-03:30	0	1	1	09:15-09:30	20	30	50	03:15-03:30	30	17	47	09:15-09:30	8	12	20
03:30-03:45	0	0	0	09:30-09:45	21	39	60	03:30-03:45	31	26	57	09:30-09:45	15	4	19
03:45-04:00	0	0	0	09:45-10:00	28	22	50	03:45-04:00	32	22	54	09:45-10:00	13	3	16
04:00-04:15	0	2	2	10:00-10:15	16	21	37	04:00-04:15	44	20	64	10:00-10:15	12	3	15
04:15-04:30	2	5	7	10:15-10:30	12	22	34	04:15-04:30	32	28	60	10:15-10:30	7	1	8
04:30-04:45	0	6	6	10:30-10:45	19	26	45	04:30-04:45	26	35	61	10:30-10:45	8	1	9
04:45-05:00	2	9	11	10:45-11:00	19	16	35	04:45-05:00	28	25	53	10:45-11:00	9	3	12
05:00-05:15	0	9	9	11:00-11:15	13	29	42	05:00-05:15	43	23	66	11:00-11:15	10	2	12
05:15-05:30	0	14	14	11:15-11:30	13	19	32	05:15-05:30	38	19	57	11:15-11:30	7	1	8
05:30-05:45	2	14	16	11:30-11:45	9	20	29	05:30-05:45	40	25	65	11:30-11:45	3	0	3
05:45-06:00	5	9	14	11:45-12:00	18	15	33	05:45-06:00	28	21	49	11:45-12:00	3	1	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	87	186	273
AM - K FACTOR (%)			8.81
AM - D (%)	31.87	68.13	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	87	186	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	149	92	241
PM - K FACTOR (%)			7.78
PM - D (%)	61.83	38.17	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	149	111	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	87	186	273
AM - K FACTOR (%)			8.81
AM - D (%)	31.87	68.13	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM		
PM - PEAK HR VOLUME	149	92	241
PM - K FACTOR (%)			7.78
PM - D (%)	61.83	38.17	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM		
PEAK HR VOLUME	128	107	235
DIRECTIONAL PEAK			
PEAK HR TIME	12:45 PM to 01:45 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	133	115	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	370	694	1,064
AM 12-HR PERIOD (00:00-12:00)	411	782	1,193
PM 6-HR PERIOD (12:00-18:00)	728	576	1,304
PM 12-HR PERIOD (12:00-24:00)	1,158	748	1,906
24 HOUR PERIOD	1,569	1,530	3,099
D (%)	50.63	49.37	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 05/02/2015															
12:00-12:15	3	1	4	06:00-06:15	3	15	18	12:00-12:15	24	18	42	06:00-06:15	30	22	52
12:15-12:30	10	1	11	06:15-06:30	5	14	19	12:15-12:30	30	22	52	06:15-06:30	26	32	58
12:30-12:45	2	0	2	06:30-06:45	6	18	24	12:30-12:45	29	28	57	06:30-06:45	44	25	69
12:45-01:00	3	0	3	06:45-07:00	10	19	29	12:45-01:00	18	27	45	06:45-07:00	25	18	43
01:00-01:15	2	0	2	07:00-07:15	7	14	21	01:00-01:15	22	22	44	07:00-07:15	35	12	47
01:15-01:30	4	0	4	07:15-07:30	7	14	21	01:15-01:30	25	21	46	07:15-07:30	23	9	32
01:30-01:45	6	3	9	07:30-07:45	14	26	40	01:30-01:45	23	16	39	07:30-07:45	32	13	45
01:45-02:00	3	0	3	07:45-08:00	9	20	29	01:45-02:00	41	16	57	07:45-08:00	34	18	52
02:00-02:15	2	1	3	08:00-08:15	10	28	38	02:00-02:15	40	25	65	08:00-08:15	25	14	39
02:15-02:30	4	1	5	08:15-08:30	13	24	37	02:15-02:30	29	28	57	08:15-08:30	13	14	27
02:30-02:45	0	1	1	08:30-08:45	12	32	44	02:30-02:45	35	25	60	08:30-08:45	20	15	35
02:45-03:00	1	0	1	08:45-09:00	19	37	56	02:45-03:00	29	33	62	08:45-09:00	17	13	30
03:00-03:15	0	0	0	09:00-09:15	18	32	50	03:00-03:15	23	34	57	09:00-09:15	17	6	23
03:15-03:30	0	0	0	09:15-09:30	20	35	55	03:15-03:30	26	15	41	09:15-09:30	15	8	23
03:30-03:45	1	0	1	09:30-09:45	23	30	53	03:30-03:45	19	27	46	09:30-09:45	12	5	17
03:45-04:00	2	0	2	09:45-10:00	22	28	50	03:45-04:00	32	28	60	09:45-10:00	18	7	25
04:00-04:15	0	2	2	10:00-10:15	27	21	48	04:00-04:15	27	34	61	10:00-10:15	12	7	19
04:15-04:30	0	4	4	10:15-10:30	27	50	77	04:15-04:30	28	25	53	10:15-10:30	16	9	25
04:30-04:45	0	2	2	10:30-10:45	27	32	59	04:30-04:45	25	18	43	10:30-10:45	12	4	16
04:45-05:00	1	2	3	10:45-11:00	24	35	59	04:45-05:00	29	21	50	10:45-11:00	9	9	18
05:00-05:15	0	4	4	11:00-11:15	23	23	46	05:00-05:15	27	33	60	11:00-11:15	10	3	13
05:15-05:30	1	2	3	11:15-11:30	17	26	43	05:15-05:30	34	24	58	11:15-11:30	10	4	14
05:30-05:45	2	5	7	11:30-11:45	27	33	60	05:30-05:45	31	20	51	11:30-11:45	8	2	10
05:45-06:00	4	12	16	11:45-12:00	34	28	62	05:45-06:00	25	21	46	11:45-12:00	7	5	12

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	54	121	175
AM - K FACTOR (%)			5.60
AM - D (%)	30.86	69.14	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	54	121	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM		
PM - PEAK HR VOLUME	125	100	225
PM - K FACTOR (%)			7.20
PM - D (%)	55.56	44.44	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	125	114	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	10:00 AM to 11:00 AM		
AM - PEAK HR VOLUME	105	138	243
AM - K FACTOR (%)			7.77
AM - D (%)	43.21	56.79	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	02:00 PM to 03:00 PM		
PM - PEAK HR VOLUME	133	111	244
PM - K FACTOR (%)			7.81
PM - D (%)	54.51	45.49	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	133	111	244
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	10:15 AM to 11:15 AM	
PEAK HR VOLUME	145	140	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	404	634	1,038
AM 12-HR PERIOD (00:00-12:00)	455	675	1,130
PM 6-HR PERIOD (12:00-18:00)	671	581	1,252
PM 12-HR PERIOD (12:00-24:00)	1,141	855	1,996
24 HOUR PERIOD	1,596	1,530	3,126
D (%)	51.06	48.94	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 05/01/2015															
12:00-12:15	3	1	4	06:00-06:15	5	20	25	12:00-12:15	11	24	35	06:00-06:15	39	29	68
12:15-12:30	5	0	5	06:15-06:30	5	19	24	12:15-12:30	23	29	52	06:15-06:30	36	18	54
12:30-12:45	2	1	3	06:30-06:45	9	25	34	12:30-12:45	25	26	51	06:30-06:45	29	21	50
12:45-01:00	1	0	1	06:45-07:00	11	28	39	12:45-01:00	20	26	46	06:45-07:00	23	25	48
01:00-01:15	1	0	1	07:00-07:15	9	34	43	01:00-01:15	29	16	45	07:00-07:15	31	21	52
01:15-01:30	0	0	0	07:15-07:30	6	46	52	01:15-01:30	22	19	41	07:15-07:30	40	14	54
01:30-01:45	2	0	2	07:30-07:45	17	64	81	01:30-01:45	25	25	50	07:30-07:45	39	23	62
01:45-02:00	1	0	1	07:45-08:00	38	47	85	01:45-02:00	23	30	53	07:45-08:00	27	22	49
02:00-02:15	2	0	2	08:00-08:15	30	25	55	02:00-02:15	17	37	54	08:00-08:15	26	8	34
02:15-02:30	1	0	1	08:15-08:30	12	28	40	02:15-02:30	20	19	39	08:15-08:30	17	11	28
02:30-02:45	0	0	0	08:30-08:45	17	32	49	02:30-02:45	41	21	62	08:30-08:45	20	10	30
02:45-03:00	1	0	1	08:45-09:00	18	28	46	02:45-03:00	30	17	47	08:45-09:00	23	10	33
03:00-03:15	0	2	2	09:00-09:15	20	34	54	03:00-03:15	38	26	64	09:00-09:15	21	9	30
03:15-03:30	1	2	3	09:15-09:30	18	26	44	03:15-03:30	34	20	54	09:15-09:30	18	11	29
03:30-03:45	0	1	1	09:30-09:45	12	23	35	03:30-03:45	39	26	65	09:30-09:45	16	3	19
03:45-04:00	1	0	1	09:45-10:00	14	27	41	03:45-04:00	34	29	63	09:45-10:00	19	5	24
04:00-04:15	0	1	1	10:00-10:15	19	30	49	04:00-04:15	31	22	53	10:00-10:15	12	6	18
04:15-04:30	0	4	4	10:15-10:30	12	22	34	04:15-04:30	42	22	64	10:15-10:30	10	3	13
04:30-04:45	1	6	7	10:30-10:45	25	18	43	04:30-04:45	41	35	76	10:30-10:45	10	6	16
04:45-05:00	0	8	8	10:45-11:00	18	26	44	04:45-05:00	34	26	60	10:45-11:00	10	1	11
05:00-05:15	1	8	9	11:00-11:15	12	29	41	05:00-05:15	27	28	55	11:00-11:15	10	4	14
05:15-05:30	0	11	11	11:15-11:30	14	24	38	05:15-05:30	35	25	60	11:15-11:30	12	2	14
05:30-05:45	1	12	13	11:30-11:45	19	24	43	05:30-05:45	21	20	41	11:30-11:45	9	1	10
05:45-06:00	3	12	15	11:45-12:00	19	21	40	05:45-06:00	34	11	45	11:45-12:00	7	1	8

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	91	182	273
AM - K FACTOR (%)			8.48
AM - D (%)	33.33	66.67	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	97	191	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	148	108	256
PM - K FACTOR (%)			7.96
PM - D (%)	57.81	42.19	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM	04:30 PM to 05:30 PM	
PM - PEAK HR VOLUME	148	114	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	91	182	273
AM - K FACTOR (%)			8.48
AM - D (%)	33.33	66.67	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	148	108	256
PM - K FACTOR (%)			7.96
PM - D (%)	57.81	42.19	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	101	107	208
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	01:15 PM to 02:15 PM	
PEAK HR VOLUME	108	111	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	379	700	1,079
AM 12-HR PERIOD (00:00-12:00)	406	769	1,175
PM 6-HR PERIOD (12:00-18:00)	696	579	1,275
PM 12-HR PERIOD (12:00-24:00)	1,200	843	2,043
24 HOUR PERIOD	1,606	1,612	3,218
D (%)	49.91	50.09	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 05/04/2015															
12:00-12:15	3	2	5	06:00-06:15	3	21	24	12:00-12:15	22	25	47	06:00-06:15	37	21	58
12:15-12:30	0	0	0	06:15-06:30	2	18	20	12:15-12:30	14	24	38	06:15-06:30	19	22	41
12:30-12:45	6	1	7	06:30-06:45	7	28	35	12:30-12:45	38	13	51	06:30-06:45	40	20	60
12:45-01:00	2	1	3	06:45-07:00	16	33	49	12:45-01:00	24	23	47	06:45-07:00	30	20	50
01:00-01:15	0	1	1	07:00-07:15	17	28	45	01:00-01:15	23	20	43	07:00-07:15	35	15	50
01:15-01:30	2	0	2	07:15-07:30	7	40	47	01:15-01:30	18	32	50	07:15-07:30	37	13	50
01:30-01:45	2	1	3	07:30-07:45	12	55	67	01:30-01:45	23	24	47	07:30-07:45	32	16	48
01:45-02:00	2	1	3	07:45-08:00	38	46	84	01:45-02:00	29	29	58	07:45-08:00	32	6	38
02:00-02:15	0	0	0	08:00-08:15	24	22	46	02:00-02:15	20	26	46	08:00-08:15	10	9	19
02:15-02:30	0	0	0	08:15-08:30	17	53	70	02:15-02:30	33	21	54	08:15-08:30	17	9	26
02:30-02:45	3	1	4	08:30-08:45	19	39	58	02:30-02:45	39	34	73	08:30-08:45	16	4	20
02:45-03:00	1	0	1	08:45-09:00	21	34	55	02:45-03:00	32	26	58	08:45-09:00	19	5	24
03:00-03:15	1	0	1	09:00-09:15	31	30	61	03:00-03:15	37	28	65	09:00-09:15	11	2	13
03:15-03:30	1	1	2	09:15-09:30	23	24	47	03:15-03:30	26	23	49	09:15-09:30	12	8	20
03:30-03:45	0	1	1	09:30-09:45	15	28	43	03:30-03:45	35	26	61	09:30-09:45	16	9	25
03:45-04:00	0	1	1	09:45-10:00	19	23	42	03:45-04:00	28	28	56	09:45-10:00	4	2	6
04:00-04:15	0	3	3	10:00-10:15	20	26	46	04:00-04:15	31	24	55	10:00-10:15	14	3	17
04:15-04:30	1	2	3	10:15-10:30	12	21	33	04:15-04:30	42	17	59	10:15-10:30	13	2	15
04:30-04:45	0	7	7	10:30-10:45	8	19	27	04:30-04:45	33	26	59	10:30-10:45	1	3	4
04:45-05:00	0	10	10	10:45-11:00	15	23	38	04:45-05:00	28	27	55	10:45-11:00	8	4	12
05:00-05:15	0	14	14	11:00-11:15	23	32	55	05:00-05:15	34	22	56	11:00-11:15	5	1	6
05:15-05:30	1	13	14	11:15-11:30	21	22	43	05:15-05:30	41	11	52	11:15-11:30	5	1	6
05:30-05:45	2	16	18	11:30-11:45	22	32	54	05:30-05:45	35	20	55	11:30-11:45	7	1	8
05:45-06:00	2	15	17	11:45-12:00	26	20	46	05:45-06:00	42	21	63	11:45-12:00	3	3	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	91	176	267
AM - K FACTOR (%)			8.41
AM - D (%)	34.08	65.92	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:30 AM to 08:30 AM	
AM - PEAK HR VOLUME	98	176	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM		
PM - PEAK HR VOLUME	126	105	231
PM - K FACTOR (%)			7.28
PM - D (%)	54.55	45.45	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM	03:00 PM to 04:00 PM	
PM - PEAK HR VOLUME	155	105	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	91	176	267
AM - K FACTOR (%)			8.41
AM - D (%)	34.08	65.92	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	02:15 PM to 03:15 PM		
PM - PEAK HR VOLUME	141	109	250
PM - K FACTOR (%)			7.88
PM - D (%)	56.40	43.60	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	121	110	231
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	01:15 PM to 02:15 PM	
PEAK HR VOLUME	124	111	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	418	717	1,135
AM 12-HR PERIOD (00:00-12:00)	447	808	1,255
PM 6-HR PERIOD (12:00-18:00)	727	570	1,297
PM 12-HR PERIOD (12:00-24:00)	1,150	769	1,919
24 HOUR PERIOD	1,597	1,577	3,174
D (%)	50.32	49.68	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 05/03/2015															
12:00-12:15	5	0	5	06:00-06:15	1	11	12	12:00-12:15	24	22	46	06:00-06:15	27	31	58
12:15-12:30	7	1	8	06:15-06:30	4	6	10	12:15-12:30	36	22	58	06:15-06:30	23	19	42
12:30-12:45	3	2	5	06:30-06:45	4	14	18	12:30-12:45	14	29	43	06:30-06:45	29	11	40
12:45-01:00	1	1	2	06:45-07:00	8	13	21	12:45-01:00	33	10	43	06:45-07:00	21	11	32
01:00-01:15	4	1	5	07:00-07:15	2	9	11	01:00-01:15	21	19	40	07:00-07:15	22	10	32
01:15-01:30	2	1	3	07:15-07:30	9	17	26	01:15-01:30	19	20	39	07:15-07:30	27	14	41
01:30-01:45	2	1	3	07:30-07:45	9	19	28	01:30-01:45	25	16	41	07:30-07:45	29	10	39
01:45-02:00	2	1	3	07:45-08:00	6	20	26	01:45-02:00	18	33	51	07:45-08:00	25	15	40
02:00-02:15	3	0	3	08:00-08:15	10	22	32	02:00-02:15	25	24	49	08:00-08:15	13	10	23
02:15-02:30	2	2	4	08:15-08:30	8	21	29	02:15-02:30	19	25	44	08:15-08:30	23	5	28
02:30-02:45	2	2	4	08:30-08:45	15	25	40	02:30-02:45	22	22	44	08:30-08:45	12	6	18
02:45-03:00	0	0	0	08:45-09:00	13	37	50	02:45-03:00	24	22	46	08:45-09:00	23	10	33
03:00-03:15	0	0	0	09:00-09:15	15	23	38	03:00-03:15	25	31	56	09:00-09:15	15	17	32
03:15-03:30	3	0	3	09:15-09:30	17	18	35	03:15-03:30	26	21	47	09:15-09:30	10	7	17
03:30-03:45	1	2	3	09:30-09:45	9	20	29	03:30-03:45	20	15	35	09:30-09:45	11	4	15
03:45-04:00	0	0	0	09:45-10:00	11	43	54	03:45-04:00	21	15	36	09:45-10:00	13	3	16
04:00-04:15	0	0	0	10:00-10:15	21	27	48	04:00-04:15	23	22	45	10:00-10:15	7	2	9
04:15-04:30	1	0	1	10:15-10:30	18	25	43	04:15-04:30	21	19	40	10:15-10:30	8	4	12
04:30-04:45	1	2	3	10:30-10:45	17	24	41	04:30-04:45	22	19	41	10:30-10:45	7	2	9
04:45-05:00	0	3	3	10:45-11:00	23	17	40	04:45-05:00	24	17	41	10:45-11:00	5	4	9
05:00-05:15	1	4	5	11:00-11:15	8	25	33	05:00-05:15	26	19	45	11:00-11:15	6	1	7
05:15-05:30	1	2	3	11:15-11:30	20	26	46	05:15-05:30	34	21	55	11:15-11:30	4	4	8
05:30-05:45	0	3	3	11:30-11:45	21	17	38	05:30-05:45	21	15	36	11:30-11:45	7	1	8
05:45-06:00	2	3	5	11:45-12:00	30	22	52	05:45-06:00	25	27	52	11:45-12:00	5	4	9

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	46	105	151
AM - K FACTOR (%)			5.98
AM - D (%)	30.46	69.54	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	46	105	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	107	94	201
PM - K FACTOR (%)			7.96
PM - D (%)	53.23	46.77	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM	05:15 PM to 06:15 PM	
PM - PEAK HR VOLUME	107	94	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:45 AM to 10:45 AM		
AM - PEAK HR VOLUME	67	119	186
AM - K FACTOR (%)			7.37
AM - D (%)	36.02	63.98	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	107	94	201
PM - K FACTOR (%)			7.96
PM - D (%)	53.23	46.77	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:45 AM to 12:45 PM		
PEAK HR VOLUME	104	95	199
DIRECTIONAL PEAK			
PEAK HR TIME	11:30 AM to 12:30 PM	09:45 AM to 10:45 AM	
PEAK HR VOLUME	111	119	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	299	501	800
AM 12-HR PERIOD (00:00-12:00)	342	532	874
PM 6-HR PERIOD (12:00-18:00)	568	505	1,073
PM 12-HR PERIOD (12:00-24:00)	940	710	1,650
24 HOUR PERIOD	1,282	1,242	2,524
D (%)	50.79	49.21	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2015

Site ID: B72928000000 **Route No:** 9280 **Date From:** 2015/04/21 0:00
Town: Oahu **Direction:** +MP **Date To:** 2015/05/04 23:45
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

Functional Classification: 18 TEST NEW URBAN: MINOR COLLECTOR
REPORT TOTALS - 336 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	520	1.21%	1040
PC	30512	70.97%	61024
2A-4T	11605	26.99%	23210
LIGHT VEHICLE TOTALS	42637	99.18%	85274
HEAVY VEHICLES			
Bus	109	0.25%	272
SINGLE UNIT TRUCK			
2A-6T	65	0.15%	130
3A-SU	135	0.31%	405
4A-SU	1	0.00%	4
SINGLE-TRAILER TRUCKS			
4A-ST	24	0.06%	96
5A-ST	10	0.02%	50
6A-ST	0	0.00%	0
MULTI-TRAILER TRUCKS			
5A-MT	7	0.02%	35
6A-MT	0	0.00%	0
7A-MT	0	0.00%	0
HEAVY VEHICLE TOTALS	351	0.82%	992
CLASSIFIED VEHICLES TOTALS	42988 (A)	100.00%	86267 (B)
UNCLASSIFIED VEHICLES TOTALS	2	0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.997

ROADTUBE EQUIVALENT(B/2) = 43133 (C)

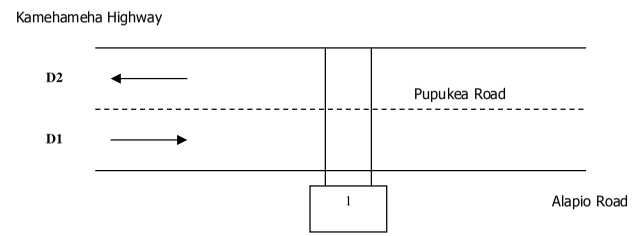
PEAK HOUR VOLUME : 291 2015/04/22 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	1	(65A-1) 0.34%	22	3400	(65A-2) 0.65%	8.56%
COMBINATION (TYPE 8-13)	0	(65B-1) 0.00%	2		(65B-2) 0.06%	8.56%

Traffic Data Service
Traffic Station Sketch

N

Island: Oahu
Area: Waimea

Section ID/Station #: B72928000000



Meter #	File Name	GPS
1. t161	D0801003_B72928000000	21.64597, -158.0592
2.	D0801004_B72928000000	

Station Description:
Pupukea Road: Kamehameha Highway to Alapio Road

Survey Beginning Date/Time: 8/1/15 @ 0000		Survey Ending Date/Time: 8/14/15 @ 2400

Survey Method:	Road Tube	Data Type:	Class
Survey Crew:	LM		C1B
Sketch Updated:		By:	SR
Remarks:	748		

FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	ROUTE MILE
Pupukea Road		18		9280	

D1= Direction to End — D1: Alapio Road / Kanalani Place
D2= Direction to Begin — D2: Kamehameha Highway / Kamehameha Highway

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/02/2015															
12:00-12:15	1	0	1	06:00-06:15	7	18	25	12:00-12:15	21	21	42	06:00-06:15	27	30	57
12:15-12:30	4	0	4	06:15-06:30	7	21	28	12:15-12:30	26	24	50	06:15-06:30	31	23	54
12:30-12:45	1	0	1	06:30-06:45	4	30	34	12:30-12:45	19	23	42	06:30-06:45	30	23	53
12:45-01:00	0	0	0	06:45-07:00	11	39	50	12:45-01:00	37	33	70	06:45-07:00	44	20	64
01:00-01:15	2	0	2	07:00-07:15	10	30	40	01:00-01:15	51	24	75	07:00-07:15	38	18	56
01:15-01:30	1	0	1	07:15-07:30	8	53	61	01:15-01:30	28	25	53	07:15-07:30	28	14	42
01:30-01:45	0	2	2	07:30-07:45	25	59	84	01:30-01:45	20	21	41	07:30-07:45	29	10	39
01:45-02:00	1	1	2	07:45-08:00	40	37	77	01:45-02:00	39	19	58	07:45-08:00	28	14	42
02:00-02:15	0	0	0	08:00-08:15	31	33	64	02:00-02:15	33	28	61	08:00-08:15	23	9	32
02:15-02:30	3	0	3	08:15-08:30	13	38	51	02:15-02:30	15	32	47	08:15-08:30	18	7	25
02:30-02:45	0	1	1	08:30-08:45	21	40	61	02:30-02:45	31	25	56	08:30-08:45	25	5	30
02:45-03:00	1	0	1	08:45-09:00	23	43	66	02:45-03:00	36	21	57	08:45-09:00	24	9	33
03:00-03:15	1	2	3	09:00-09:15	21	30	51	03:00-03:15	24	21	45	09:00-09:15	20	3	23
03:15-03:30	0	1	1	09:15-09:30	16	29	45	03:15-03:30	35	30	65	09:15-09:30	16	10	26
03:30-03:45	1	1	2	09:30-09:45	11	29	40	03:30-03:45	25	19	44	09:30-09:45	26	7	33
03:45-04:00	1	0	1	09:45-10:00	17	26	43	03:45-04:00	27	17	44	09:45-10:00	13	3	16
04:00-04:15	1	1	2	10:00-10:15	23	28	51	04:00-04:15	22	17	39	10:00-10:15	9	3	12
04:15-04:30	0	3	3	10:15-10:30	13	30	43	04:15-04:30	26	30	56	10:15-10:30	13	3	16
04:30-04:45	0	8	8	10:30-10:45	13	31	44	04:30-04:45	35	36	71	10:30-10:45	11	3	14
04:45-05:00	0	9	9	10:45-11:00	23	27	50	04:45-05:00	45	28	73	10:45-11:00	7	3	10
05:00-05:15	0	10	10	11:00-11:15	22	15	37	05:00-05:15	37	25	62	11:00-11:15	15	2	17
05:15-05:30	3	8	11	11:15-11:30	20	21	41	05:15-05:30	39	23	62	11:15-11:30	1	0	1
05:30-05:45	4	13	17	11:30-11:45	26	32	58	05:30-05:45	38	14	52	11:30-11:45	4	0	4
05:45-06:00	6	14	20	11:45-12:00	25	24	49	05:45-06:00	32	31	63	11:45-12:00	1	1	2

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	104	182	286
AM - K FACTOR (%)			8.60
AM - D (%)	36.36	63.64	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	109	182	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	156	112	268
PM - K FACTOR (%)			8.06
PM - D (%)	58.21	41.79	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM	04:15 PM to 05:15 PM	
PM - PEAK HR VOLUME	159	119	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	104	182	286
AM - K FACTOR (%)			8.60
AM - D (%)	36.36	63.64	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	156	112	268
PM - K FACTOR (%)			8.06
PM - D (%)	58.21	41.79	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM		
PEAK HR VOLUME	135	105	240
DIRECTIONAL PEAK			
PEAK HR TIME	01:00 PM to 02:00 PM	10:00 AM to 11:00 AM	
PEAK HR VOLUME	138	116	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	430	763	1,193
AM 12-HR PERIOD (00:00-12:00)	461	837	1,298
PM 6-HR PERIOD (12:00-18:00)	741	587	1,328
PM 12-HR PERIOD (12:00-24:00)	1,222	807	2,029
24 HOUR PERIOD	1,683	1,644	3,327
D (%)	50.59	49.41	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/01/2015															
12:00-12:15	3	1	4	06:00-06:15	4	17	21	12:00-12:15	17	28	45	06:00-06:15	30	25	55
12:15-12:30	3	1	4	06:15-06:30	9	20	29	12:15-12:30	25	20	45	06:15-06:30	33	31	64
12:30-12:45	3	0	3	06:30-06:45	10	27	37	12:30-12:45	30	22	52	06:30-06:45	33	19	52
12:45-01:00	1	0	1	06:45-07:00	11	40	51	12:45-01:00	20	23	43	06:45-07:00	37	14	51
01:00-01:15	3	1	4	07:00-07:15	10	20	30	01:00-01:15	23	24	47	07:00-07:15	34	14	48
01:15-01:30	0	1	1	07:15-07:30	9	42	51	01:15-01:30	37	25	62	07:15-07:30	39	15	54
01:30-01:45	0	3	3	07:30-07:45	21	55	76	01:30-01:45	28	29	57	07:30-07:45	28	18	46
01:45-02:00	1	3	4	07:45-08:00	27	36	63	01:45-02:00	19	30	49	07:45-08:00	26	8	34
02:00-02:15	1	1	2	08:00-08:15	22	32	54	02:00-02:15	25	26	51	08:00-08:15	27	7	34
02:15-02:30	2	0	2	08:15-08:30	18	37	55	02:15-02:30	34	18	52	08:15-08:30	16	8	24
02:30-02:45	1	1	2	08:30-08:45	17	29	46	02:30-02:45	32	23	55	08:30-08:45	17	6	23
02:45-03:00	2	0	2	08:45-09:00	28	49	77	02:45-03:00	33	24	57	08:45-09:00	15	6	21
03:00-03:15	2	2	4	09:00-09:15	20	28	48	03:00-03:15	28	25	53	09:00-09:15	9	6	15
03:15-03:30	0	2	2	09:15-09:30	21	35	56	03:15-03:30	31	24	55	09:15-09:30	21	8	29
03:30-03:45	0	0	0	09:30-09:45	13	37	50	03:30-03:45	36	18	54	09:30-09:45	19	4	23
03:45-04:00	0	2	2	09:45-10:00	14	22	36	03:45-04:00	36	31	67	09:45-10:00	21	2	23
04:00-04:15	0	2	2	10:00-10:15	18	29	47	04:00-04:15	40	26	66	10:00-10:15	16	7	23
04:15-04:30	0	4	4	10:15-10:30	18	31	49	04:15-04:30	45	28	73	10:15-10:30	11	5	16
04:30-04:45	2	6	8	10:30-10:45	15	26	41	04:30-04:45	33	29	62	10:30-10:45	10	6	16
04:45-05:00	1	10	11	10:45-11:00	23	26	49	04:45-05:00	31	24	55	10:45-11:00	8	4	12
05:00-05:15	0	7	7	11:00-11:15	22	27	49	05:00-05:15	42	25	67	11:00-11:15	9	0	9
05:15-05:30	1	20	21	11:15-11:30	6	15	21	05:15-05:30	45	28	73	11:15-11:30	5	1	6
05:30-05:45	2	17	19	11:30-11:45	16	22	38	05:30-05:45	32	21	53	11:30-11:45	5	1	6
05:45-06:00	2	17	19	11:45-12:00	15	9	24	05:45-06:00	36	26	62	11:45-12:00	3	0	3

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	88	160	248
AM - K FACTOR (%)			7.58
AM - D (%)	35.48	64.52	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	88	165	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	154	114	268
PM - K FACTOR (%)			8.19
PM - D (%)	57.46	42.54	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	157	114	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	88	160	248
AM - K FACTOR (%)			7.58
AM - D (%)	35.48	64.52	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	154	114	268
PM - K FACTOR (%)			8.19
PM - D (%)	57.46	42.54	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM		
PEAK HR VOLUME	109	110	219
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	124	123	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	387	711	1,098
AM 12-HR PERIOD (00:00-12:00)	417	812	1,229
PM 6-HR PERIOD (12:00-18:00)	758	597	1,355
PM 12-HR PERIOD (12:00-24:00)	1,230	812	2,042
24 HOUR PERIOD	1,647	1,624	3,271
D (%)	50.35	49.65	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/04/2015															
12:00-12:15	2	1	3	06:00-06:15	5	14	19	12:00-12:15	19	32	51	06:00-06:15	33	19	52
12:15-12:30	1	1	2	06:15-06:30	14	22	36	12:15-12:30	28	28	56	06:15-06:30	27	22	49
12:30-12:45	3	1	4	06:30-06:45	11	26	37	12:30-12:45	24	20	44	06:30-06:45	32	18	50
12:45-01:00	5	0	5	06:45-07:00	14	33	47	12:45-01:00	24	25	49	06:45-07:00	37	17	54
01:00-01:15	1	1	2	07:00-07:15	7	22	29	01:00-01:15	26	24	50	07:00-07:15	32	14	46
01:15-01:30	1	1	2	07:15-07:30	8	40	48	01:15-01:30	28	26	54	07:15-07:30	36	15	51
01:30-01:45	1	1	2	07:30-07:45	15	52	67	01:30-01:45	32	26	58	07:30-07:45	32	14	46
01:45-02:00	0	0	0	07:45-08:00	38	45	83	01:45-02:00	26	32	58	07:45-08:00	25	12	37
02:00-02:15	0	0	0	08:00-08:15	24	25	49	02:00-02:15	36	32	68	08:00-08:15	17	6	23
02:15-02:30	2	0	2	08:15-08:30	19	37	56	02:15-02:30	38	25	63	08:15-08:30	17	15	32
02:30-02:45	1	0	1	08:30-08:45	17	40	57	02:30-02:45	41	23	64	08:30-08:45	22	8	30
02:45-03:00	0	0	0	08:45-09:00	15	47	62	02:45-03:00	36	29	65	08:45-09:00	15	5	20
03:00-03:15	0	0	0	09:00-09:15	23	32	55	03:00-03:15	34	27	61	09:00-09:15	14	2	16
03:15-03:30	0	0	0	09:15-09:30	14	35	49	03:15-03:30	33	27	60	09:15-09:30	17	6	23
03:30-03:45	0	1	1	09:30-09:45	14	39	53	03:30-03:45	37	23	60	09:30-09:45	16	6	22
03:45-04:00	1	1	2	09:45-10:00	19	28	47	03:45-04:00	38	29	67	09:45-10:00	17	4	21
04:00-04:15	1	4	5	10:00-10:15	19	17	36	04:00-04:15	28	30	58	10:00-10:15	15	7	22
04:15-04:30	0	6	6	10:15-10:30	9	22	31	04:15-04:30	41	33	74	10:15-10:30	10	2	12
04:30-04:45	0	5	5	10:30-10:45	25	14	39	04:30-04:45	39	25	64	10:30-10:45	13	5	18
04:45-05:00	1	10	11	10:45-11:00	20	23	43	04:45-05:00	41	26	67	10:45-11:00	12	2	14
05:00-05:15	0	7	7	11:00-11:15	20	24	44	05:00-05:15	38	22	60	11:00-11:15	9	6	15
05:15-05:30	1	10	11	11:15-11:30	23	29	52	05:15-05:30	34	30	64	11:15-11:30	6	2	8
05:30-05:45	3	13	16	11:30-11:45	22	20	42	05:30-05:45	34	21	55	11:30-11:45	5	3	8
05:45-06:00	2	22	24	11:45-12:00	27	20	47	05:45-06:00	42	27	69	11:45-12:00	7	3	10

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	96	159	255
AM - K FACTOR (%)			7.60
AM - D (%)	37.65	62.35	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	98	162	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	159	106	265
PM - K FACTOR (%)			7.89
PM - D (%)	60.00	40.00	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	159	117	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	96	159	255
AM - K FACTOR (%)			7.60
AM - D (%)	37.65	62.35	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	159	106	265
PM - K FACTOR (%)			7.89
PM - D (%)	60.00	40.00	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	151	109	260
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	151	134	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	422	706	1,128
AM 12-HR PERIOD (00:00-12:00)	448	791	1,239
PM 6-HR PERIOD (12:00-18:00)	797	642	1,439
PM 12-HR PERIOD (12:00-24:00)	1,263	855	2,118
24 HOUR PERIOD	1,711	1,646	3,357
D (%)	50.97	49.03	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/03/2015															
12:00-12:15	3	1	4	06:00-06:15	2	18	20	12:00-12:15	24	23	47	06:00-06:15	32	32	64
12:15-12:30	1	0	1	06:15-06:30	9	29	38	12:15-12:30	24	26	50	06:15-06:30	30	24	54
12:30-12:45	4	0	4	06:30-06:45	8	27	35	12:30-12:45	35	29	64	06:30-06:45	33	21	54
12:45-01:00	5	3	8	06:45-07:00	8	25	33	12:45-01:00	29	25	54	06:45-07:00	47	16	63
01:00-01:15	1	0	1	07:00-07:15	8	29	37	01:00-01:15	25	38	63	07:00-07:15	32	9	41
01:15-01:30	0	0	0	07:15-07:30	9	43	52	01:15-01:30	31	24	55	07:15-07:30	39	16	55
01:30-01:45	0	1	1	07:30-07:45	23	62	85	01:30-01:45	27	25	52	07:30-07:45	23	9	32
01:45-02:00	0	0	0	07:45-08:00	41	37	78	01:45-02:00	21	31	52	07:45-08:00	29	9	38
02:00-02:15	0	1	1	08:00-08:15	22	38	60	02:00-02:15	15	29	44	08:00-08:15	33	13	46
02:15-02:30	3	0	3	08:15-08:30	18	37	55	02:15-02:30	41	21	62	08:15-08:30	23	12	35
02:30-02:45	0	0	0	08:30-08:45	24	33	57	02:30-02:45	41	29	70	08:30-08:45	22	6	28
02:45-03:00	0	0	0	08:45-09:00	20	31	51	02:45-03:00	29	20	49	08:45-09:00	21	9	30
03:00-03:15	0	1	1	09:00-09:15	17	35	52	03:00-03:15	17	25	42	09:00-09:15	13	6	19
03:15-03:30	0	0	0	09:15-09:30	18	37	55	03:15-03:30	40	25	65	09:15-09:30	13	6	19
03:30-03:45	0	0	0	09:30-09:45	27	22	49	03:30-03:45	32	36	68	09:30-09:45	18	2	20
03:45-04:00	2	0	2	09:45-10:00	15	28	43	03:45-04:00	43	28	71	09:45-10:00	10	9	19
04:00-04:15	0	1	1	10:00-10:15	18	16	34	04:00-04:15	40	33	73	10:00-10:15	8	1	9
04:15-04:30	2	6	8	10:15-10:30	13	25	38	04:15-04:30	37	24	61	10:15-10:30	10	5	15
04:30-04:45	1	7	8	10:30-10:45	17	20	37	04:30-04:45	38	25	63	10:30-10:45	11	4	15
04:45-05:00	0	7	7	10:45-11:00	20	23	43	04:45-05:00	32	27	59	10:45-11:00	8	5	13
05:00-05:15	0	8	8	11:00-11:15	18	36	54	05:00-05:15	43	23	66	11:00-11:15	8	2	10
05:15-05:30	0	13	13	11:15-11:30	12	22	34	05:15-05:30	33	19	52	11:15-11:30	8	4	12
05:30-05:45	1	13	14	11:30-11:45	20	31	51	05:30-05:45	35	15	50	11:30-11:45	6	0	6
05:45-06:00	4	12	16	11:45-12:00	22	21	43	05:45-06:00	32	27	59	11:45-12:00	6	3	9

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	104	174	278
AM - K FACTOR (%)			8.34
AM - D (%)	37.41	62.59	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	105	180	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM		
PM - PEAK HR VOLUME	155	122	277
PM - K FACTOR (%)			8.31
PM - D (%)	55.96	44.04	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM	03:15 PM to 04:15 PM	
PM - PEAK HR VOLUME	158	122	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	104	174	278
AM - K FACTOR (%)			8.34
AM - D (%)	37.41	62.59	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM		
PM - PEAK HR VOLUME	155	122	277
PM - K FACTOR (%)			8.31
PM - D (%)	55.96	44.04	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM		
PEAK HR VOLUME	120	116	236
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	126	122	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	409	725	1,134
AM 12-HR PERIOD (00:00-12:00)	436	799	1,235
PM 6-HR PERIOD (12:00-18:00)	764	627	1,391
PM 12-HR PERIOD (12:00-24:00)	1,247	850	2,097
24 HOUR PERIOD	1,683	1,649	3,332
D (%)	50.51	49.49	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/06/2015															
12:00-12:15	7	6	13	06:00-06:15	3	9	12	12:00-12:15	22	27	49	06:00-06:15	38	23	61
12:15-12:30	4	3	7	06:15-06:30	3	7	10	12:15-12:30	32	17	49	06:15-06:30	32	14	46
12:30-12:45	5	5	10	06:30-06:45	3	11	14	12:30-12:45	15	16	31	06:30-06:45	19	16	35
12:45-01:00	3	4	7	06:45-07:00	2	13	15	12:45-01:00	26	19	45	06:45-07:00	24	13	37
01:00-01:15	2	2	4	07:00-07:15	3	17	20	01:00-01:15	26	22	48	07:00-07:15	19	10	29
01:15-01:30	3	3	6	07:15-07:30	3	15	18	01:15-01:30	31	17	48	07:15-07:30	22	18	40
01:30-01:45	1	3	4	07:30-07:45	6	17	23	01:30-01:45	33	20	53	07:30-07:45	19	14	33
01:45-02:00	6	1	7	07:45-08:00	9	27	36	01:45-02:00	25	30	55	07:45-08:00	18	20	38
02:00-02:15	2	3	5	08:00-08:15	11	19	30	02:00-02:15	34	12	46	08:00-08:15	19	12	31
02:15-02:30	0	2	2	08:15-08:30	18	28	46	02:15-02:30	22	17	39	08:15-08:30	18	10	28
02:30-02:45	3	1	4	08:30-08:45	15	27	42	02:30-02:45	20	26	46	08:30-08:45	18	6	24
02:45-03:00	3	2	5	08:45-09:00	20	37	57	02:45-03:00	27	31	58	08:45-09:00	14	9	23
03:00-03:15	2	1	3	09:00-09:15	18	29	47	03:00-03:15	22	23	45	09:00-09:15	13	7	20
03:15-03:30	1	1	2	09:15-09:30	16	26	42	03:15-03:30	21	23	44	09:15-09:30	13	3	16
03:30-03:45	0	2	2	09:30-09:45	13	30	43	03:30-03:45	22	22	44	09:30-09:45	12	4	16
03:45-04:00	1	1	2	09:45-10:00	12	43	55	03:45-04:00	25	19	44	09:45-10:00	6	2	8
04:00-04:15	1	0	1	10:00-10:15	17	20	37	04:00-04:15	26	21	47	10:00-10:15	9	5	14
04:15-04:30	0	1	1	10:15-10:30	21	32	53	04:15-04:30	27	22	49	10:15-10:30	7	4	11
04:30-04:45	1	3	4	10:30-10:45	25	28	53	04:30-04:45	30	27	57	10:30-10:45	14	5	19
04:45-05:00	0	2	2	10:45-11:00	34	36	70	04:45-05:00	21	13	34	10:45-11:00	8	1	9
05:00-05:15	0	2	2	11:00-11:15	26	20	46	05:00-05:15	29	22	51	11:00-11:15	3	1	4
05:15-05:30	1	5	6	11:15-11:30	17	36	53	05:15-05:30	25	24	49	11:15-11:30	3	1	4
05:30-05:45	0	5	5	11:30-11:45	26	27	53	05:30-05:45	25	29	54	11:30-11:45	4	0	4
05:45-06:00	2	5	7	11:45-12:00	20	24	44	05:45-06:00	29	26	55	11:45-12:00	1	1	2

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	64	111	175
AM - K FACTOR (%)			6.43
AM - D (%)	36.57	63.43	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	64	111	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	117	102	219
PM - K FACTOR (%)			8.05
PM - D (%)	53.42	46.58	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	05:15 PM to 06:15 PM	
PM - PEAK HR VOLUME	124	102	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	10:15 AM to 11:15 AM		
AM - PEAK HR VOLUME	106	116	222
AM - K FACTOR (%)			8.16
AM - D (%)	47.75	52.25	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	117	102	219
PM - K FACTOR (%)			8.05
PM - D (%)	53.42	46.58	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	10:15 AM to 11:15 AM		
PEAK HR VOLUME	106	116	222
DIRECTIONAL PEAK			
PEAK HR TIME	01:15 PM to 02:15 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	123	128	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	341	578	919
AM 12-HR PERIOD (00:00-12:00)	389	641	1,030
PM 6-HR PERIOD (12:00-18:00)	615	525	1,140
PM 12-HR PERIOD (12:00-24:00)	968	724	1,692
24 HOUR PERIOD	1,357	1,365	2,722
D (%)	49.85	50.15	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/05/2015															
12:00-12:15	10	4	14	06:00-06:15	2	10	12	12:00-12:15	21	25	46	06:00-06:15	33	33	66
12:15-12:30	2	3	5	06:15-06:30	5	11	16	12:15-12:30	31	22	53	06:15-06:30	29	26	55
12:30-12:45	6	3	9	06:30-06:45	5	16	21	12:30-12:45	30	20	50	06:30-06:45	26	17	43
12:45-01:00	5	1	6	06:45-07:00	7	17	24	12:45-01:00	31	16	47	06:45-07:00	39	15	54
01:00-01:15	4	0	4	07:00-07:15	7	16	23	01:00-01:15	22	26	48	07:00-07:15	34	30	64
01:15-01:30	4	2	6	07:15-07:30	5	18	23	01:15-01:30	26	21	47	07:15-07:30	38	14	52
01:30-01:45	3	1	4	07:30-07:45	13	20	33	01:30-01:45	33	18	51	07:30-07:45	28	24	52
01:45-02:00	3	1	4	07:45-08:00	11	20	31	01:45-02:00	26	16	42	07:45-08:00	28	28	56
02:00-02:15	1	0	1	08:00-08:15	13	20	33	02:00-02:15	36	21	57	08:00-08:15	26	17	43
02:15-02:30	1	1	2	08:15-08:30	11	32	43	02:15-02:30	26	18	44	08:15-08:30	15	16	31
02:30-02:45	3	2	5	08:30-08:45	24	37	61	02:30-02:45	36	33	69	08:30-08:45	22	11	33
02:45-03:00	3	1	4	08:45-09:00	19	49	68	02:45-03:00	22	39	61	08:45-09:00	14	28	42
03:00-03:15	6	1	7	09:00-09:15	22	31	53	03:00-03:15	38	18	56	09:00-09:15	20	17	37
03:15-03:30	5	0	5	09:15-09:30	27	33	60	03:15-03:30	31	26	57	09:15-09:30	18	11	29
03:30-03:45	0	1	1	09:30-09:45	21	29	50	03:30-03:45	27	24	51	09:30-09:45	23	13	36
03:45-04:00	1	1	2	09:45-10:00	25	38	63	03:45-04:00	40	13	53	09:45-10:00	18	10	28
04:00-04:15	3	7	10	10:00-10:15	28	29	57	04:00-04:15	36	27	63	10:00-10:15	20	12	32
04:15-04:30	0	5	5	10:15-10:30	21	42	63	04:15-04:30	39	25	64	10:15-10:30	15	15	30
04:30-04:45	0	3	3	10:30-10:45	29	39	68	04:30-04:45	24	27	51	10:30-10:45	14	9	23
04:45-05:00	1	4	5	10:45-11:00	24	40	64	04:45-05:00	39	25	64	10:45-11:00	14	10	24
05:00-05:15	2	3	5	11:00-11:15	22	28	50	05:00-05:15	45	27	72	11:00-11:15	13	6	19
05:15-05:30	1	3	4	11:15-11:30	28	28	56	05:15-05:30	27	28	55	11:15-11:30	4	5	9
05:30-05:45	3	9	12	11:30-11:45	23	33	56	05:30-05:45	36	23	59	11:30-11:45	9	4	13
05:45-06:00	3	11	14	11:45-12:00	18	30	48	05:45-06:00	40	16	56	11:45-12:00	3	4	7

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	67	138	205
AM - K FACTOR (%)			6.02
AM - D (%)	32.68	67.32	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	67	138	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	147	104	251
PM - K FACTOR (%)			7.37
PM - D (%)	58.57	41.43	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM	04:30 PM to 05:30 PM	
PM - PEAK HR VOLUME	148	107	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	10:00 AM to 11:00 AM		
AM - PEAK HR VOLUME	102	150	252
AM - K FACTOR (%)			7.40
AM - D (%)	40.48	59.52	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	147	104	251
PM - K FACTOR (%)			7.37
PM - D (%)	58.57	41.43	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	10:00 AM to 11:00 AM		
PEAK HR VOLUME	102	150	252
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	10:00 AM to 11:00 AM	
PEAK HR VOLUME	124	150	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	410	666	1,076
AM 12-HR PERIOD (00:00-12:00)	480	733	1,213
PM 6-HR PERIOD (12:00-18:00)	762	554	1,316
PM 12-HR PERIOD (12:00-24:00)	1,265	929	2,194
24 HOUR PERIOD	1,745	1,662	3,407
D (%)	51.22	48.78	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/08/2015															
12:00-12:15	3	2	5	06:00-06:15	3	26	29	12:00-12:15	26	23	49	06:00-06:15	51	15	66
12:15-12:30	4	1	5	06:15-06:30	2	21	23	12:15-12:30	20	27	47	06:15-06:30	37	21	58
12:30-12:45	1	1	2	06:30-06:45	14	29	43	12:30-12:45	21	26	47	06:30-06:45	25	23	48
12:45-01:00	1	0	1	06:45-07:00	6	25	31	12:45-01:00	21	19	40	06:45-07:00	23	27	50
01:00-01:15	3	1	4	07:00-07:15	9	31	40	01:00-01:15	31	24	55	07:00-07:15	44	19	63
01:15-01:30	0	0	0	07:15-07:30	12	37	49	01:15-01:30	28	24	52	07:15-07:30	40	10	50
01:30-01:45	0	0	0	07:30-07:45	18	70	88	01:30-01:45	25	28	53	07:30-07:45	29	19	48
01:45-02:00	0	0	0	07:45-08:00	32	26	58	01:45-02:00	11	31	42	07:45-08:00	32	17	49
02:00-02:15	0	0	0	08:00-08:15	10	25	35	02:00-02:15	17	26	43	08:00-08:15	24	15	39
02:15-02:30	0	1	1	08:15-08:30	23	25	48	02:15-02:30	37	20	57	08:15-08:30	32	6	38
02:30-02:45	1	2	3	08:30-08:45	20	45	65	02:30-02:45	37	31	68	08:30-08:45	21	9	30
02:45-03:00	2	0	2	08:45-09:00	22	27	49	02:45-03:00	26	16	42	08:45-09:00	22	10	32
03:00-03:15	1	2	3	09:00-09:15	25	32	57	03:00-03:15	26	13	39	09:00-09:15	15	3	18
03:15-03:30	0	0	0	09:15-09:30	24	42	66	03:15-03:30	39	24	63	09:15-09:30	22	9	31
03:30-03:45	1	0	1	09:30-09:45	13	29	42	03:30-03:45	23	32	55	09:30-09:45	13	4	17
03:45-04:00	0	0	0	09:45-10:00	25	27	52	03:45-04:00	38	17	55	09:45-10:00	14	5	19
04:00-04:15	0	3	3	10:00-10:15	23	29	52	04:00-04:15	31	19	50	10:00-10:15	12	4	16
04:15-04:30	0	10	10	10:15-10:30	20	32	52	04:15-04:30	29	34	63	10:15-10:30	10	3	13
04:30-04:45	1	4	5	10:30-10:45	25	36	61	04:30-04:45	27	26	53	10:30-10:45	10	4	14
04:45-05:00	0	9	9	10:45-11:00	23	35	58	04:45-05:00	35	17	52	10:45-11:00	8	4	12
05:00-05:15	0	13	13	11:00-11:15	28	26	54	05:00-05:15	26	15	41	11:00-11:15	5	4	9
05:15-05:30	0	13	13	11:15-11:30	18	33	51	05:15-05:30	39	19	58	11:15-11:30	4	1	5
05:30-05:45	1	11	12	11:30-11:45	29	22	51	05:30-05:45	37	27	64	11:30-11:45	10	0	10
05:45-06:00	9	17	26	11:45-12:00	24	30	54	05:45-06:00	37	20	57	11:45-12:00	4	1	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:00 AM to 08:00 AM		
AM - PEAK HR VOLUME	71	164	235
AM - K FACTOR (%)			7.10
AM - D (%)	30.21	69.79	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	85	164	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	164	81	245
PM - K FACTOR (%)			7.40
PM - D (%)	66.94	33.06	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	164	102	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:30 AM to 09:30 AM		
AM - PEAK HR VOLUME	91	146	237
AM - K FACTOR (%)			7.16
AM - D (%)	38.40	61.60	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	164	81	245
PM - K FACTOR (%)			7.40
PM - D (%)	66.94	33.06	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	10:15 AM to 11:15 AM		
PEAK HR VOLUME	96	129	225
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	10:00 AM to 11:00 AM	
PEAK HR VOLUME	117	132	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	448	760	1,208
AM 12-HR PERIOD (00:00-12:00)	476	850	1,326
PM 6-HR PERIOD (12:00-18:00)	687	558	1,245
PM 12-HR PERIOD (12:00-24:00)	1,194	791	1,985
24 HOUR PERIOD	1,670	1,641	3,311
D (%)	50.44	49.56	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/07/2015															
12:00-12:15	6	1	7	06:00-06:15	5	19	24	12:00-12:15	20	28	48	06:00-06:15	34	14	48
12:15-12:30	4	1	5	06:15-06:30	1	11	12	12:15-12:30	24	23	47	06:15-06:30	31	22	53
12:30-12:45	3	0	3	06:30-06:45	7	24	31	12:30-12:45	26	19	45	06:30-06:45	39	20	59
12:45-01:00	1	1	2	06:45-07:00	11	33	44	12:45-01:00	19	15	34	06:45-07:00	27	12	39
01:00-01:15	3	1	4	07:00-07:15	8	30	38	01:00-01:15	25	20	45	07:00-07:15	29	11	40
01:15-01:30	1	1	2	07:15-07:30	9	43	52	01:15-01:30	24	18	42	07:15-07:30	48	15	63
01:30-01:45	4	1	5	07:30-07:45	20	57	77	01:30-01:45	23	18	41	07:30-07:45	29	11	40
01:45-02:00	0	0	0	07:45-08:00	35	38	73	01:45-02:00	23	21	44	07:45-08:00	26	12	38
02:00-02:15	0	0	0	08:00-08:15	19	30	49	02:00-02:15	18	25	43	08:00-08:15	17	10	27
02:15-02:30	1	0	1	08:15-08:30	19	33	52	02:15-02:30	33	22	55	08:15-08:30	16	7	23
02:30-02:45	2	0	2	08:30-08:45	17	37	54	02:30-02:45	26	24	50	08:30-08:45	20	8	28
02:45-03:00	0	2	2	08:45-09:00	15	31	46	02:45-03:00	36	26	62	08:45-09:00	12	3	15
03:00-03:15	1	1	2	09:00-09:15	20	30	50	03:00-03:15	30	34	64	09:00-09:15	14	6	20
03:15-03:30	1	3	4	09:15-09:30	13	31	44	03:15-03:30	24	24	48	09:15-09:30	14	3	17
03:30-03:45	2	1	3	09:30-09:45	27	29	56	03:30-03:45	49	33	82	09:30-09:45	13	10	23
03:45-04:00	0	3	3	09:45-10:00	14	25	39	03:45-04:00	38	19	57	09:45-10:00	12	2	14
04:00-04:15	1	4	5	10:00-10:15	13	28	41	04:00-04:15	27	34	61	10:00-10:15	12	2	14
04:15-04:30	1	4	5	10:15-10:30	15	31	46	04:15-04:30	40	22	62	10:15-10:30	9	0	9
04:30-04:45	0	8	8	10:30-10:45	17	26	43	04:30-04:45	35	30	65	10:30-10:45	8	1	9
04:45-05:00	0	9	9	10:45-11:00	14	16	30	04:45-05:00	45	32	77	10:45-11:00	9	1	10
05:00-05:15	0	11	11	11:00-11:15	26	28	54	05:00-05:15	36	19	55	11:00-11:15	7	0	7
05:15-05:30	2	6	8	11:15-11:30	14	24	38	05:15-05:30	35	14	49	11:15-11:30	1	0	1
05:30-05:45	1	22	23	11:30-11:45	10	23	33	05:30-05:45	41	30	71	11:30-11:45	3	1	4
05:45-06:00	2	16	18	11:45-12:00	23	16	39	05:45-06:00	35	24	59	11:45-12:00	0	0	0

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	83	168	251
AM - K FACTOR (%)			8.09
AM - D (%)	33.07	66.93	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	93	168	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	147	118	265
PM - K FACTOR (%)			8.54
PM - D (%)	55.47	44.53	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	157	118	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	83	168	251
AM - K FACTOR (%)			8.09
AM - D (%)	33.07	66.93	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	147	118	265
PM - K FACTOR (%)			8.54
PM - D (%)	55.47	44.53	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	113	97	210
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	113	115	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	372	693	1,065
AM 12-HR PERIOD (00:00-12:00)	408	789	1,197
PM 6-HR PERIOD (12:00-18:00)	732	574	1,306
PM 12-HR PERIOD (12:00-24:00)	1,162	745	1,907
24 HOUR PERIOD	1,570	1,534	3,104
D (%)	50.58	49.42	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/10/2015															
12:00-12:15	0	1	1	06:00-06:15	3	19	22	12:00-12:15	31	28	59	06:00-06:15	24	20	44
12:15-12:30	6	0	6	06:15-06:30	4	25	29	12:15-12:30	24	33	57	06:15-06:30	29	25	54
12:30-12:45	4	0	4	06:30-06:45	6	24	30	12:30-12:45	20	27	47	06:30-06:45	29	32	61
12:45-01:00	1	0	1	06:45-07:00	4	20	24	12:45-01:00	23	35	58	06:45-07:00	32	24	56
01:00-01:15	2	0	2	07:00-07:15	20	31	51	01:00-01:15	20	26	46	07:00-07:15	38	22	60
01:15-01:30	2	0	2	07:15-07:30	7	39	46	01:15-01:30	24	19	43	07:15-07:30	27	9	36
01:30-01:45	1	0	1	07:30-07:45	24	65	89	01:30-01:45	22	31	53	07:30-07:45	44	8	52
01:45-02:00	0	1	1	07:45-08:00	45	39	84	01:45-02:00	19	30	49	07:45-08:00	41	23	64
02:00-02:15	1	0	1	08:00-08:15	28	44	72	02:00-02:15	27	37	64	08:00-08:15	23	13	36
02:15-02:30	1	0	1	08:15-08:30	25	26	51	02:15-02:30	46	36	82	08:15-08:30	28	4	32
02:30-02:45	3	0	3	08:30-08:45	27	30	57	02:30-02:45	24	24	48	08:30-08:45	28	5	33
02:45-03:00	1	1	2	08:45-09:00	14	34	48	02:45-03:00	33	15	48	08:45-09:00	27	9	36
03:00-03:15	0	0	0	09:00-09:15	26	23	49	03:00-03:15	35	30	65	09:00-09:15	22	4	26
03:15-03:30	1	0	1	09:15-09:30	24	35	59	03:15-03:30	46	17	63	09:15-09:30	21	9	30
03:30-03:45	0	0	0	09:30-09:45	10	29	39	03:30-03:45	40	27	67	09:30-09:45	21	4	25
03:45-04:00	0	1	1	09:45-10:00	22	31	53	03:45-04:00	39	30	69	09:45-10:00	15	11	26
04:00-04:15	0	1	1	10:00-10:15	26	34	60	04:00-04:15	35	25	60	10:00-10:15	16	5	21
04:15-04:30	0	4	4	10:15-10:30	23	30	53	04:15-04:30	50	27	77	10:15-10:30	12	9	21
04:30-04:45	1	10	11	10:30-10:45	13	29	42	04:30-04:45	41	24	65	10:30-10:45	9	5	14
04:45-05:00	1	6	7	10:45-11:00	15	22	37	04:45-05:00	41	28	69	10:45-11:00	7	1	8
05:00-05:15	1	11	12	11:00-11:15	20	34	54	05:00-05:15	44	30	74	11:00-11:15	10	9	19
05:15-05:30	2	12	14	11:15-11:30	16	29	45	05:15-05:30	37	27	64	11:15-11:30	8	4	12
05:30-05:45	1	18	19	11:30-11:45	28	21	49	05:30-05:45	31	21	52	11:30-11:45	5	1	6
05:45-06:00	1	15	16	11:45-12:00	30	28	58	05:45-06:00	30	22	52	11:45-12:00	3	3	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	122	174	296
AM - K FACTOR (%)			8.41
AM - D (%)	41.22	58.78	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	125	187	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	176	109	285
PM - K FACTOR (%)			8.09
PM - D (%)	61.75	38.25	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM	03:30 PM to 04:30 PM	
PM - PEAK HR VOLUME	176	109	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	122	174	296
AM - K FACTOR (%)			8.41
AM - D (%)	41.22	58.78	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:15 PM to 05:15 PM		
PM - PEAK HR VOLUME	176	109	285
PM - K FACTOR (%)			8.09
PM - D (%)	61.75	38.25	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM		
PEAK HR VOLUME	114	134	248
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	01:30 PM to 02:30 PM	
PEAK HR VOLUME	130	134	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	460	741	1,201
AM 12-HR PERIOD (00:00-12:00)	490	822	1,312
PM 6-HR PERIOD (12:00-18:00)	782	649	1,431
PM 12-HR PERIOD (12:00-24:00)	1,301	908	2,209
24 HOUR PERIOD	1,791	1,730	3,521
D (%)	50.87	49.13	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/09/2015															
12:00-12:15	2	1	3	06:00-06:15	5	22	27	12:00-12:15	19	23	42	06:00-06:15	30	16	46
12:15-12:30	5	2	7	06:15-06:30	5	17	22	12:15-12:30	18	26	44	06:15-06:30	30	27	57
12:30-12:45	3	1	4	06:30-06:45	9	39	48	12:30-12:45	26	28	54	06:30-06:45	25	18	43
12:45-01:00	1	1	2	06:45-07:00	10	26	36	12:45-01:00	40	33	73	06:45-07:00	32	16	48
01:00-01:15	3	3	6	07:00-07:15	14	33	47	01:00-01:15	35	30	65	07:00-07:15	34	16	50
01:15-01:30	4	3	7	07:15-07:30	14	50	64	01:15-01:30	36	22	58	07:15-07:30	31	14	45
01:30-01:45	1	1	2	07:30-07:45	16	66	82	01:30-01:45	24	26	50	07:30-07:45	25	11	36
01:45-02:00	0	0	0	07:45-08:00	40	44	84	01:45-02:00	30	19	49	07:45-08:00	30	13	43
02:00-02:15	0	1	1	08:00-08:15	32	44	76	02:00-02:15	36	24	60	08:00-08:15	20	8	28
02:15-02:30	0	1	1	08:15-08:30	18	37	55	02:15-02:30	27	31	58	08:15-08:30	22	9	31
02:30-02:45	0	1	1	08:30-08:45	19	36	55	02:30-02:45	23	26	49	08:30-08:45	18	6	24
02:45-03:00	0	0	0	08:45-09:00	29	40	69	02:45-03:00	26	36	62	08:45-09:00	35	6	41
03:00-03:15	0	1	1	09:00-09:15	28	27	55	03:00-03:15	20	20	40	09:00-09:15	14	4	18
03:15-03:30	0	0	0	09:15-09:30	22	30	52	03:15-03:30	29	27	56	09:15-09:30	10	8	18
03:30-03:45	0	0	0	09:30-09:45	20	19	39	03:30-03:45	35	30	65	09:30-09:45	18	8	26
03:45-04:00	1	1	2	09:45-10:00	25	40	65	03:45-04:00	31	25	56	09:45-10:00	13	3	16
04:00-04:15	1	3	4	10:00-10:15	23	36	59	04:00-04:15	40	20	60	10:00-10:15	12	4	16
04:15-04:30	2	4	6	10:15-10:30	24	27	51	04:15-04:30	38	25	63	10:15-10:30	11	6	17
04:30-04:45	0	5	5	10:30-10:45	24	20	44	04:30-04:45	44	42	86	10:30-10:45	8	6	14
04:45-05:00	0	8	8	10:45-11:00	23	24	47	04:45-05:00	43	22	65	10:45-11:00	8	2	10
05:00-05:15	1	9	10	11:00-11:15	25	25	50	05:00-05:15	36	25	61	11:00-11:15	9	3	12
05:15-05:30	3	17	20	11:15-11:30	21	21	42	05:15-05:30	38	28	66	11:15-11:30	7	0	7
05:30-05:45	1	17	18	11:30-11:45	15	19	34	05:30-05:45	44	28	72	11:30-11:45	0	2	2
05:45-06:00	4	20	24	11:45-12:00	19	22	41	05:45-06:00	41	24	65	11:45-12:00	3	0	3

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	102	204	306
AM - K FACTOR (%)			8.88
AM - D (%)	33.33	66.67	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	109	204	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	161	117	278
PM - K FACTOR (%)			8.07
PM - D (%)	57.91	42.09	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:30 PM to 05:30 PM	
PM - PEAK HR VOLUME	165	117	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	102	204	306
AM - K FACTOR (%)			8.88
AM - D (%)	33.33	66.67	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	161	117	278
PM - K FACTOR (%)			8.07
PM - D (%)	57.91	42.09	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM		
PEAK HR VOLUME	137	113	250
DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	137	125	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	480	764	1,244
AM 12-HR PERIOD (00:00-12:00)	512	864	1,376
PM 6-HR PERIOD (12:00-18:00)	779	640	1,419
PM 12-HR PERIOD (12:00-24:00)	1,224	846	2,070
24 HOUR PERIOD	1,736	1,710	3,446
D (%)	50.38	49.62	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/12/2015															
12:00-12:15	7	0	7	06:00-06:15	5	9	14	12:00-12:15	20	25	45	06:00-06:15	23	20	43
12:15-12:30	4	3	7	06:15-06:30	5	13	18	12:15-12:30	28	34	62	06:15-06:30	16	22	38
12:30-12:45	5	1	6	06:30-06:45	4	19	23	12:30-12:45	16	26	42	06:30-06:45	20	23	43
12:45-01:00	3	0	3	06:45-07:00	4	17	21	12:45-01:00	24	24	48	06:45-07:00	15	9	24
01:00-01:15	2	2	4	07:00-07:15	11	20	31	01:00-01:15	39	28	67	07:00-07:15	19	16	35
01:15-01:30	4	1	5	07:15-07:30	9	20	29	01:15-01:30	34	28	62	07:15-07:30	21	16	37
01:30-01:45	3	2	5	07:30-07:45	11	31	42	01:30-01:45	22	31	53	07:30-07:45	30	22	52
01:45-02:00	6	0	6	07:45-08:00	20	35	55	01:45-02:00	31	17	48	07:45-08:00	32	16	48
02:00-02:15	4	1	5	08:00-08:15	20	23	43	02:00-02:15	27	17	44	08:00-08:15	23	8	31
02:15-02:30	3	2	5	08:15-08:30	15	31	46	02:15-02:30	17	22	39	08:15-08:30	25	13	38
02:30-02:45	1	0	1	08:30-08:45	26	41	67	02:30-02:45	24	25	49	08:30-08:45	20	15	35
02:45-03:00	0	1	1	08:45-09:00	25	32	57	02:45-03:00	41	32	73	08:45-09:00	18	22	40
03:00-03:15	2	0	2	09:00-09:15	21	38	59	03:00-03:15	28	26	54	09:00-09:15	16	14	30
03:15-03:30	1	1	2	09:15-09:30	21	36	57	03:15-03:30	28	23	51	09:15-09:30	21	21	42
03:30-03:45	2	0	2	09:30-09:45	26	38	64	03:30-03:45	33	20	53	09:30-09:45	22	19	41
03:45-04:00	2	1	3	09:45-10:00	29	29	58	03:45-04:00	21	24	45	09:45-10:00	17	16	33
04:00-04:15	0	0	0	10:00-10:15	29	29	58	04:00-04:15	34	24	58	10:00-10:15	26	13	39
04:15-04:30	0	5	5	10:15-10:30	28	36	64	04:15-04:30	31	23	54	10:15-10:30	10	13	23
04:30-04:45	0	1	1	10:30-10:45	32	37	69	04:30-04:45	37	36	73	10:30-10:45	13	2	15
04:45-05:00	0	4	4	10:45-11:00	26	28	54	04:45-05:00	29	35	64	10:45-11:00	13	5	18
05:00-05:15	1	8	9	11:00-11:15	24	26	50	05:00-05:15	36	34	70	11:00-11:15	12	8	20
05:15-05:30	0	2	2	11:15-11:30	19	25	44	05:15-05:30	42	34	76	11:15-11:30	6	2	8
05:30-05:45	2	2	4	11:30-11:45	24	29	53	05:30-05:45	36	15	51	11:30-11:45	16	0	16
05:45-06:00	1	8	9	11:45-12:00	32	26	58	05:45-06:00	34	16	50	11:45-12:00	6	2	8

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	86	127	213
AM - K FACTOR (%)			6.42
AM - D (%)	40.38	59.62	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:45 AM to 08:45 AM	
AM - PEAK HR VOLUME	86	130	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	144	139	283
PM - K FACTOR (%)			8.52
PM - D (%)	50.88	49.12	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM	04:30 PM to 05:30 PM	
PM - PEAK HR VOLUME	148	139	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:45 AM to 10:45 AM		
AM - PEAK HR VOLUME	118	131	249
AM - K FACTOR (%)			7.50
AM - D (%)	47.39	52.61	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	144	139	283
PM - K FACTOR (%)			8.52
PM - D (%)	50.88	49.12	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:45 AM to 10:45 AM		
PEAK HR VOLUME	118	131	249
DIRECTIONAL PEAK			
PEAK HR TIME	01:00 PM to 02:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	126	141	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	466	668	1,134
AM 12-HR PERIOD (00:00-12:00)	519	713	1,232
PM 6-HR PERIOD (12:00-18:00)	712	619	1,331
PM 12-HR PERIOD (12:00-24:00)	1,152	936	2,088
24 HOUR PERIOD	1,671	1,649	3,320
D (%)	50.33	49.67	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/11/2015															
12:00-12:15	6	1	7	06:00-06:15	4	20	24	12:00-12:15	17	33	50	06:00-06:15	32	27	59
12:15-12:30	3	7	10	06:15-06:30	6	17	23	12:15-12:30	20	37	57	06:15-06:30	37	28	65
12:30-12:45	5	1	6	06:30-06:45	7	28	35	12:30-12:45	16	33	49	06:30-06:45	30	20	50
12:45-01:00	2	1	3	06:45-07:00	9	30	39	12:45-01:00	27	26	53	06:45-07:00	33	26	59
01:00-01:15	1	0	1	07:00-07:15	12	39	51	01:00-01:15	23	17	40	07:00-07:15	27	16	43
01:15-01:30	3	1	4	07:15-07:30	13	60	73	01:15-01:30	25	16	41	07:15-07:30	34	15	49
01:30-01:45	2	0	2	07:30-07:45	19	65	84	01:30-01:45	23	22	45	07:30-07:45	24	19	43
01:45-02:00	3	1	4	07:45-08:00	38	37	75	01:45-02:00	26	27	53	07:45-08:00	35	22	57
02:00-02:15	2	1	3	08:00-08:15	34	26	60	02:00-02:15	22	36	58	08:00-08:15	20	8	28
02:15-02:30	1	1	2	08:15-08:30	18	28	46	02:15-02:30	28	18	46	08:15-08:30	24	11	35
02:30-02:45	2	0	2	08:30-08:45	21	28	49	02:30-02:45	40	31	71	08:30-08:45	31	8	39
02:45-03:00	0	0	0	08:45-09:00	23	41	64	02:45-03:00	47	27	74	08:45-09:00	18	16	34
03:00-03:15	0	0	0	09:00-09:15	20	31	51	03:00-03:15	29	27	56	09:00-09:15	19	10	29
03:15-03:30	2	2	4	09:15-09:30	21	32	53	03:15-03:30	41	26	67	09:15-09:30	22	4	26
03:30-03:45	2	1	3	09:30-09:45	16	35	51	03:30-03:45	32	24	56	09:30-09:45	14	4	18
03:45-04:00	0	1	1	09:45-10:00	22	24	46	03:45-04:00	40	23	63	09:45-10:00	17	10	27
04:00-04:15	0	3	3	10:00-10:15	15	33	48	04:00-04:15	44	34	78	10:00-10:15	20	12	32
04:15-04:30	0	5	5	10:15-10:30	28	26	54	04:15-04:30	33	26	59	10:15-10:30	21	7	28
04:30-04:45	0	6	6	10:30-10:45	21	26	47	04:30-04:45	37	21	58	10:30-10:45	25	7	32
04:45-05:00	0	8	8	10:45-11:00	13	28	41	04:45-05:00	35	21	56	10:45-11:00	9	5	14
05:00-05:15	0	7	7	11:00-11:15	27	23	50	05:00-05:15	30	35	65	11:00-11:15	14	4	18
05:15-05:30	3	13	16	11:15-11:30	26	20	46	05:15-05:30	39	24	63	11:15-11:30	9	1	10
05:30-05:45	1	19	20	11:30-11:45	32	18	50	05:30-05:45	36	17	53	11:30-11:45	9	0	9
05:45-06:00	4	21	25	11:45-12:00	31	42	73	05:45-06:00	40	31	71	11:45-12:00	3	1	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	104	188	292
AM - K FACTOR (%)			8.19
AM - D (%)	35.62	64.38	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	111	201	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM		
PM - PEAK HR VOLUME	157	107	264
PM - K FACTOR (%)			7.41
PM - D (%)	59.47	40.53	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 PM to 04:15 PM	03:15 PM to 04:15 PM	
PM - PEAK HR VOLUME	157	107	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	104	188	292
AM - K FACTOR (%)			8.19
AM - D (%)	35.62	64.38	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	02:30 PM to 03:30 PM		
PM - PEAK HR VOLUME	157	111	268
PM - K FACTOR (%)			7.52
PM - D (%)	58.58	41.42	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	137	112	249
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	11:45 AM to 12:45 PM	
PEAK HR VOLUME	137	145	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	476	757	1,233
AM 12-HR PERIOD (00:00-12:00)	518	857	1,375
PM 6-HR PERIOD (12:00-18:00)	750	632	1,382
PM 12-HR PERIOD (12:00-24:00)	1,277	913	2,190
24 HOUR PERIOD	1,795	1,770	3,565
D (%)	50.35	49.65	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/14/2015															
12:00-12:15	2	3	5	06:00-06:15	5	16	21	12:00-12:15	33	27	60	06:00-06:15	29	29	58
12:15-12:30	4	2	6	06:15-06:30	6	19	25	12:15-12:30	17	21	38	06:15-06:30	34	28	62
12:30-12:45	0	2	2	06:30-06:45	10	23	33	12:30-12:45	17	16	33	06:30-06:45	28	23	51
12:45-01:00	4	0	4	06:45-07:00	5	27	32	12:45-01:00	32	13	45	06:45-07:00	36	13	49
01:00-01:15	2	0	2	07:00-07:15	7	36	43	01:00-01:15	38	17	55	07:00-07:15	32	19	51
01:15-01:30	1	0	1	07:15-07:30	14	36	50	01:15-01:30	21	14	35	07:15-07:30	43	11	54
01:30-01:45	1	2	3	07:30-07:45	23	45	68	01:30-01:45	19	31	50	07:30-07:45	25	11	36
01:45-02:00	1	0	1	07:45-08:00	46	27	73	01:45-02:00	28	33	61	07:45-08:00	34	11	45
02:00-02:15	1	0	1	08:00-08:15	26	37	63	02:00-02:15	24	32	56	08:00-08:15	27	12	39
02:15-02:30	2	0	2	08:15-08:30	19	36	55	02:15-02:30	40	29	69	08:15-08:30	25	15	40
02:30-02:45	0	1	1	08:30-08:45	16	35	51	02:30-02:45	30	26	56	08:30-08:45	31	13	44
02:45-03:00	0	2	2	08:45-09:00	19	25	44	02:45-03:00	35	20	55	08:45-09:00	16	7	23
03:00-03:15	0	0	0	09:00-09:15	19	39	58	03:00-03:15	33	27	60	09:00-09:15	15	8	23
03:15-03:30	3	1	4	09:15-09:30	11	36	47	03:15-03:30	30	34	64	09:15-09:30	15	5	20
03:30-03:45	0	0	0	09:30-09:45	29	26	55	03:30-03:45	33	38	71	09:30-09:45	17	3	20
03:45-04:00	0	1	1	09:45-10:00	11	29	40	03:45-04:00	31	30	61	09:45-10:00	14	6	20
04:00-04:15	0	4	4	10:00-10:15	18	27	45	04:00-04:15	25	22	47	10:00-10:15	15	8	23
04:15-04:30	0	7	7	10:15-10:30	25	26	51	04:15-04:30	38	32	70	10:15-10:30	12	3	15
04:30-04:45	0	5	5	10:30-10:45	20	29	49	04:30-04:45	36	30	66	10:30-10:45	18	4	22
04:45-05:00	2	10	12	10:45-11:00	22	31	53	04:45-05:00	37	27	64	10:45-11:00	8	2	10
05:00-05:15	0	14	14	11:00-11:15	22	28	50	05:00-05:15	35	20	55	11:00-11:15	10	2	12
05:15-05:30	1	11	12	11:15-11:30	22	28	50	05:15-05:30	41	23	64	11:15-11:30	5	1	6
05:30-05:45	1	17	18	11:30-11:45	16	23	39	05:30-05:45	34	36	70	11:30-11:45	4	1	5
05:45-06:00	4	23	27	11:45-12:00	23	20	43	05:45-06:00	40	29	69	11:45-12:00	5	0	5

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	114	145	259
AM - K FACTOR (%)			7.66
AM - D (%)	44.02	55.98	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	114	145	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	144	117	261
PM - K FACTOR (%)			7.72
PM - D (%)	55.17	44.83	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM	03:00 PM to 04:00 PM	
PM - PEAK HR VOLUME	150	129	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	114	145	259
AM - K FACTOR (%)			7.66
AM - D (%)	44.02	55.98	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	144	117	261
PM - K FACTOR (%)			7.72
PM - D (%)	55.17	44.83	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	122	120	242
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	129	130	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	434	704	1,138
AM 12-HR PERIOD (00:00-12:00)	463	809	1,272
PM 6-HR PERIOD (12:00-18:00)	747	627	1,374
PM 12-HR PERIOD (12:00-24:00)	1,245	862	2,107
24 HOUR PERIOD	1,708	1,671	3,379
D (%)	50.55	49.45	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2015 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 3400
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 09/13/2015															
12:00-12:15	8	3	11	06:00-06:15	4	8	12	12:00-12:15	35	29	64	06:00-06:15	36	26	62
12:15-12:30	3	1	4	06:15-06:30	3	9	12	12:15-12:30	29	26	55	06:15-06:30	33	25	58
12:30-12:45	5	0	5	06:30-06:45	3	9	12	12:30-12:45	19	22	41	06:30-06:45	30	22	52
12:45-01:00	7	0	7	06:45-07:00	4	7	11	12:45-01:00	32	32	64	06:45-07:00	20	25	45
01:00-01:15	4	1	5	07:00-07:15	9	13	22	01:00-01:15	39	29	68	07:00-07:15	27	9	36
01:15-01:30	2	1	3	07:15-07:30	5	16	21	01:15-01:30	17	20	37	07:15-07:30	31	16	47
01:30-01:45	2	1	3	07:30-07:45	3	15	18	01:30-01:45	31	22	53	07:30-07:45	24	9	33
01:45-02:00	2	0	2	07:45-08:00	10	18	28	01:45-02:00	22	20	42	07:45-08:00	28	17	45
02:00-02:15	3	3	6	08:00-08:15	6	23	29	02:00-02:15	28	25	53	08:00-08:15	25	12	37
02:15-02:30	0	0	0	08:15-08:30	7	22	29	02:15-02:30	24	15	39	08:15-08:30	23	10	33
02:30-02:45	8	1	9	08:30-08:45	17	26	43	02:30-02:45	18	29	47	08:30-08:45	22	11	33
02:45-03:00	2	0	2	08:45-09:00	17	28	45	02:45-03:00	24	19	43	08:45-09:00	13	8	21
03:00-03:15	1	2	3	09:00-09:15	16	27	43	03:00-03:15	20	21	41	09:00-09:15	14	14	28
03:15-03:30	3	4	7	09:15-09:30	14	20	34	03:15-03:30	19	26	45	09:15-09:30	12	10	22
03:30-03:45	1	1	2	09:30-09:45	18	30	48	03:30-03:45	30	20	50	09:30-09:45	10	3	13
03:45-04:00	2	1	3	09:45-10:00	14	28	42	03:45-04:00	23	16	39	09:45-10:00	11	5	16
04:00-04:15	3	1	4	10:00-10:15	18	30	48	04:00-04:15	25	22	47	10:00-10:15	11	8	19
04:15-04:30	4	4	8	10:15-10:30	10	33	43	04:15-04:30	24	24	48	10:15-10:30	6	9	15
04:30-04:45	2	2	4	10:30-10:45	21	25	46	04:30-04:45	22	19	41	10:30-10:45	9	8	17
04:45-05:00	0	5	5	10:45-11:00	25	25	50	04:45-05:00	20	24	44	10:45-11:00	7	0	7
05:00-05:15	0	1	1	11:00-11:15	26	21	47	05:00-05:15	17	16	33	11:00-11:15	5	4	9
05:15-05:30	0	1	1	11:15-11:30	26	31	57	05:15-05:30	31	20	51	11:15-11:30	4	5	9
05:30-05:45	0	1	1	11:30-11:45	25	21	46	05:30-05:45	27	25	52	11:30-11:45	7	2	9
05:45-06:00	2	10	12	11:45-12:00	34	19	53	05:45-06:00	36	24	60	11:45-12:00	4	5	9

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	47	99	146
AM - K FACTOR (%)			5.25
AM - D (%)	32.19	67.81	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	47	99	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	132	100	232
PM - K FACTOR (%)			8.35
PM - D (%)	56.90	43.10	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	05:30 PM to 06:30 PM	
PM - PEAK HR VOLUME	135	100	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM		
AM - PEAK HR VOLUME	111	92	203
AM - K FACTOR (%)			7.30
AM - D (%)	54.68	45.32	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	132	100	232
PM - K FACTOR (%)			8.35
PM - D (%)	56.90	43.10	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:15 PM to 01:15 PM		
PEAK HR VOLUME	119	109	228
DIRECTIONAL PEAK			
PEAK HR TIME	11:30 AM to 12:30 PM	09:30 AM to 10:30 AM	
PEAK HR VOLUME	123	121	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	335	504	839
AM 12-HR PERIOD (00:00-12:00)	399	548	947
PM 6-HR PERIOD (12:00-18:00)	612	545	1,157
PM 12-HR PERIOD (12:00-24:00)	1,024	808	1,832
24 HOUR PERIOD	1,423	1,356	2,779
D (%)	51.21	48.79	100.00

Run Date: 2016/08/25

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2015

Site ID:	B72928000000	**Route No:**	9280	**Date From:**	2015/09/01 0:00
Town:	Oahu	**Direction:**	+MP	**Date To:**	2015/09/14 23:45
Location:	Pupukea Rd - Kamehameha Hwy to Alapio Rd				

Functional Classification: 18 TEST NEW URBAN: MINOR COLLECTOR
REPORT TOTALS - 336 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	587	1.28%	1174
PC	32108	70.04%	64216
2A-4T	12604	27.50%	25208
LIGHT VEHICLE TOTALS	45299	98.82%	90597
HEAVY VEHICLES			
Bus	131	0.29%	328
SINGLE UNIT TRUCK			
2A-6T	117	0.26%	234
3A-SU	211	0.46%	633
4A-SU	3	0.01%	12
SINGLE-TRAILER TRUCKS			
4A-ST	31	0.07%	124
5A-ST	28	0.06%	140
6A-ST	9	0.02%	54
MULTI-TRAILER TRUCKS			
5A-MT	7	0.02%	35
6A-MT	0	0.00%	0
7A-MT	3	0.01%	21
HEAVY VEHICLE TOTALS	540	1.18%	1581
CLASSIFIED VEHICLES TOTALS	45839 (A)	100.00%	92178 (B)
UNCLASSIFIED VEHICLES TOTALS	2	0.01%	

AXLE CORRECTION FACTOR (A/C) = 0.995

ROADTUBE EQUIVALENT(B/2) = 46089 (C)

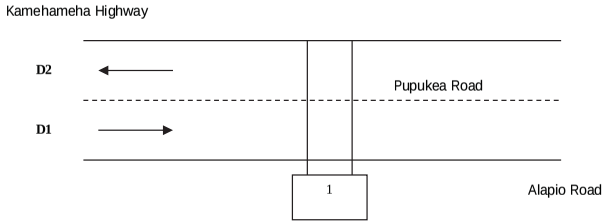
PEAK HOUR VOLUME : 283 2015/09/11 07:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	3	(65A-1) 1.06%	33	3400	(65A-2) 0.97%	8.32%
COMBINATION (TYPE 8-13)	0	(65B-1) 0.00%	5		(65B-2) 0.15%	8.32%

Traffic Data Service
Traffic Station Sketch

N

Island: Oahu
Area: Waimea

Section ID/Station #: B72928000000



Meter #	File Name	GPS
1. t161	D0109005_B72928000000	21.64597, -158.0592
2.	D0109006_B72928000000	

Station Description:
Pupukea Road: Kamehameha Highway to Alapio Road

Survey Beginning Date/Time: 1/9/2016 @ 0000		Survey Ending Date/Time: 1/23/2016 @ 2400

Survey Method:	Road Tube	Data Type:	Class
Survey Crew:	LM		C1B
Sketch Updated:		By:	SR
Remarks:	748		

FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	MILE
Pupukea Road		18		9280	

D1= Direction to End — D1: Alapio Road / Kanalani Place
D2= Direction to Begin — D2: Kamehameha Highway / Kamehameha Highway

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/10/2016															
12:00-12:15	4	0	4	06:00-06:15	1	15	16	12:00-12:15	40	43	83	06:00-06:15	38	32	70
12:15-12:30	4	0	4	06:15-06:30	3	12	15	12:15-12:30	32	30	62	06:15-06:30	32	17	49
12:30-12:45	10	2	12	06:30-06:45	4	15	19	12:30-12:45	30	24	54	06:30-06:45	41	27	68
12:45-01:00	6	2	8	06:45-07:00	13	16	29	12:45-01:00	38	29	67	06:45-07:00	51	19	70
01:00-01:15	3	3	6	07:00-07:15	4	17	21	01:00-01:15	35	27	62	07:00-07:15	40	14	54
01:15-01:30	3	0	3	07:15-07:30	7	26	33	01:15-01:30	31	32	63	07:15-07:30	31	17	48
01:30-01:45	2	2	4	07:30-07:45	5	26	31	01:30-01:45	30	27	57	07:30-07:45	23	21	44
01:45-02:00	2	2	4	07:45-08:00	11	28	39	01:45-02:00	22	33	55	07:45-08:00	18	10	28
02:00-02:15	4	1	5	08:00-08:15	12	18	30	02:00-02:15	23	24	47	08:00-08:15	34	13	47
02:15-02:30	0	1	1	08:15-08:30	18	25	43	02:15-02:30	33	22	55	08:15-08:30	22	7	29
02:30-02:45	1	1	2	08:30-08:45	13	23	36	02:30-02:45	36	25	61	08:30-08:45	27	10	37
02:45-03:00	2	0	2	08:45-09:00	20	21	41	02:45-03:00	26	21	47	08:45-09:00	17	6	23
03:00-03:15	1	0	1	09:00-09:15	17	44	61	03:00-03:15	25	29	54	09:00-09:15	14	5	19
03:15-03:30	3	1	4	09:15-09:30	36	40	76	03:15-03:30	32	33	65	09:15-09:30	12	10	22
03:30-03:45	1	2	3	09:30-09:45	15	41	56	03:30-03:45	40	29	69	09:30-09:45	15	9	24
03:45-04:00	0	1	1	09:45-10:00	39	46	85	03:45-04:00	24	30	54	09:45-10:00	17	8	25
04:00-04:15	1	1	2	10:00-10:15	35	44	79	04:00-04:15	33	26	59	10:00-10:15	15	4	19
04:15-04:30	0	1	1	10:15-10:30	44	42	86	04:15-04:30	38	24	62	10:15-10:30	6	3	9
04:30-04:45	1	2	3	10:30-10:45	25	43	68	04:30-04:45	40	28	68	10:30-10:45	10	7	17
04:45-05:00	0	1	1	10:45-11:00	38	27	65	04:45-05:00	30	32	62	10:45-11:00	12	3	15
05:00-05:15	1	1	2	11:00-11:15	30	36	66	05:00-05:15	42	31	73	11:00-11:15	10	2	12
05:15-05:30	4	4	8	11:15-11:30	20	46	66	05:15-05:30	33	40	73	11:15-11:30	2	2	4
05:30-05:45	1	5	6	11:30-11:45	19	36	55	05:30-05:45	38	30	68	11:30-11:45	2	1	3
05:45-06:00	4	4	8	11:45-12:00	39	59	98	05:45-06:00	35	32	67	11:45-12:00	2	2	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	63	87	150
AM - K FACTOR (%)			4.24
AM - D (%)	42.00	58.00	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	63	98	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	148	133	281
PM - K FACTOR (%)			7.95
PM - D (%)	52.67	47.33	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	05:15 PM to 06:15 PM	
PM - PEAK HR VOLUME	162	134	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:45 AM to 10:45 AM		
AM - PEAK HR VOLUME	143	175	318
AM - K FACTOR (%)			8.99
AM - D (%)	44.97	55.03	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	148	133	281
PM - K FACTOR (%)			7.95
PM - D (%)	52.67	47.33	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:45 AM to 10:45 AM		
PEAK HR VOLUME	143	175	318
DIRECTIONAL PEAK			
PEAK HR TIME	09:45 AM to 10:45 AM	11:15 AM to 12:15 PM	
PEAK HR VOLUME	143	184	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	468	746	1,214
AM 12-HR PERIOD (00:00-12:00)	526	783	1,309
PM 6-HR PERIOD (12:00-18:00)	786	701	1,487
PM 12-HR PERIOD (12:00-24:00)	1,277	950	2,227
24 HOUR PERIOD	1,803	1,733	3,536
D (%)	50.99	49.01	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/09/2016															
12:00-12:15	13	1	14	06:00-06:15	4	18	22	12:00-12:15	30	38	68	06:00-06:15	39	33	72
12:15-12:30	14	5	19	06:15-06:30	5	13	18	12:15-12:30	27	43	70	06:15-06:30	49	24	73
12:30-12:45	7	1	8	06:30-06:45	5	13	18	12:30-12:45	36	25	61	06:30-06:45	53	22	75
12:45-01:00	5	2	7	06:45-07:00	4	22	26	12:45-01:00	26	26	52	06:45-07:00	46	18	64
01:00-01:15	3	1	4	07:00-07:15	5	16	21	01:00-01:15	28	30	58	07:00-07:15	31	25	56
01:15-01:30	6	3	9	07:15-07:30	15	23	38	01:15-01:30	44	32	76	07:15-07:30	27	25	52
01:30-01:45	7	2	9	07:30-07:45	15	37	52	01:30-01:45	29	31	60	07:30-07:45	32	16	48
01:45-02:00	1	2	3	07:45-08:00	20	30	50	01:45-02:00	36	29	65	07:45-08:00	36	14	50
02:00-02:15	4	1	5	08:00-08:15	17	38	55	02:00-02:15	34	21	55	08:00-08:15	16	12	28
02:15-02:30	3	0	3	08:15-08:30	25	30	55	02:15-02:30	34	27	61	08:15-08:30	22	7	29
02:30-02:45	0	0	0	08:30-08:45	19	38	57	02:30-02:45	40	23	63	08:30-08:45	27	7	34
02:45-03:00	1	1	2	08:45-09:00	22	51	73	02:45-03:00	36	31	67	08:45-09:00	21	12	33
03:00-03:15	1	0	1	09:00-09:15	26	55	81	03:00-03:15	34	39	73	09:00-09:15	19	12	31
03:15-03:30	3	0	3	09:15-09:30	24	52	76	03:15-03:30	21	47	68	09:15-09:30	17	9	26
03:30-03:45	0	1	1	09:30-09:45	26	40	66	03:30-03:45	31	30	61	09:30-09:45	26	8	34
03:45-04:00	2	3	5	09:45-10:00	34	56	90	03:45-04:00	33	34	67	09:45-10:00	21	6	27
04:00-04:15	2	1	3	10:00-10:15	33	44	77	04:00-04:15	25	24	49	10:00-10:15	13	9	22
04:15-04:30	0	1	1	10:15-10:30	32	44	76	04:15-04:30	22	29	51	10:15-10:30	15	8	23
04:30-04:45	1	1	2	10:30-10:45	33	45	78	04:30-04:45	46	27	73	10:30-10:45	13	4	17
04:45-05:00	0	5	5	10:45-11:00	37	37	74	04:45-05:00	34	26	60	10:45-11:00	13	6	19
05:00-05:15	1	5	6	11:00-11:15	34	43	77	05:00-05:15	51	36	87	11:00-11:15	11	7	18
05:15-05:30	0	8	8	11:15-11:30	34	32	66	05:15-05:30	32	24	56	11:15-11:30	7	4	11
05:30-05:45	2	13	15	11:30-11:45	36	25	61	05:30-05:45	38	18	56	11:30-11:45	5	0	5
05:45-06:00	2	11	13	11:45-12:00	37	34	71	05:45-06:00	42	34	76	11:45-12:00	8	5	13

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	83	157	240
AM - K FACTOR (%)			6.13
AM - D (%)	34.58	65.42	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	83	157	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM		
PM - PEAK HR VOLUME	183	113	296
PM - K FACTOR (%)			7.56
PM - D (%)	61.82	38.18	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	03:00 PM to 04:00 PM	
PM - PEAK HR VOLUME	187	150	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:45 AM to 10:45 AM		
AM - PEAK HR VOLUME	132	189	321
AM - K FACTOR (%)			8.20
AM - D (%)	41.12	58.88	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM		
PM - PEAK HR VOLUME	183	113	296
PM - K FACTOR (%)			7.56
PM - D (%)	61.82	38.18	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:45 AM to 10:45 AM		
PEAK HR VOLUME	132	189	321
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	144	203	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	542	836	1,378
AM 12-HR PERIOD (00:00-12:00)	620	904	1,524
PM 6-HR PERIOD (12:00-18:00)	809	724	1,533
PM 12-HR PERIOD (12:00-24:00)	1,376	1,017	2,393
24 HOUR PERIOD	1,996	1,921	3,917
D (%)	50.96	49.04	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/12/2016															
12:00-12:15	3	1	4	06:00-06:15	6	26	32	12:00-12:15	23	27	50	06:00-06:15	57	21	78
12:15-12:30	9	1	10	06:15-06:30	2	21	23	12:15-12:30	35	31	66	06:15-06:30	42	24	66
12:30-12:45	2	4	6	06:30-06:45	4	25	29	12:30-12:45	32	19	51	06:30-06:45	58	25	83
12:45-01:00	2	1	3	06:45-07:00	7	43	50	12:45-01:00	38	24	62	06:45-07:00	51	17	68
01:00-01:15	1	0	1	07:00-07:15	8	39	47	01:00-01:15	39	20	59	07:00-07:15	42	12	54
01:15-01:30	1	2	3	07:15-07:30	9	53	62	01:15-01:30	33	46	79	07:15-07:30	32	12	44
01:30-01:45	0	2	2	07:30-07:45	19	96	115	01:30-01:45	41	36	77	07:30-07:45	27	13	40
01:45-02:00	0	0	0	07:45-08:00	47	68	115	01:45-02:00	24	44	68	07:45-08:00	45	11	56
02:00-02:15	0	0	0	08:00-08:15	45	54	99	02:00-02:15	38	38	76	08:00-08:15	30	6	36
02:15-02:30	0	0	0	08:15-08:30	31	51	82	02:15-02:30	60	32	92	08:15-08:30	24	8	32
02:30-02:45	0	0	0	08:30-08:45	19	47	66	02:30-02:45	49	23	72	08:30-08:45	27	10	37
02:45-03:00	0	2	2	08:45-09:00	29	49	78	02:45-03:00	32	30	62	08:45-09:00	17	12	29
03:00-03:15	1	0	1	09:00-09:15	27	34	61	03:00-03:15	29	28	57	09:00-09:15	21	4	25
03:15-03:30	0	0	0	09:15-09:30	14	36	50	03:15-03:30	31	45	76	09:15-09:30	19	5	24
03:30-03:45	0	1	1	09:30-09:45	30	40	70	03:30-03:45	48	31	79	09:30-09:45	20	5	25
03:45-04:00	1	0	1	09:45-10:00	24	45	69	03:45-04:00	38	39	77	09:45-10:00	14	5	19
04:00-04:15	1	5	6	10:00-10:15	18	38	56	04:00-04:15	50	25	75	10:00-10:15	13	2	15
04:15-04:30	0	3	3	10:15-10:30	28	41	69	04:15-04:30	52	31	83	10:15-10:30	11	4	15
04:30-04:45	1	10	11	10:30-10:45	23	33	56	04:30-04:45	53	54	107	10:30-10:45	9	5	14
04:45-05:00	3	11	14	10:45-11:00	18	38	56	04:45-05:00	41	43	84	10:45-11:00	9	1	10
05:00-05:15	0	17	17	11:00-11:15	35	28	63	05:00-05:15	46	26	72	11:00-11:15	8	3	11
05:15-05:30	1	13	14	11:15-11:30	33	37	70	05:15-05:30	49	32	81	11:15-11:30	3	0	3
05:30-05:45	4	19	23	11:30-11:45	20	43	63	05:30-05:45	49	39	88	11:30-11:45	8	1	9
05:45-06:00	0	18	18	11:45-12:00	27	28	55	05:45-06:00	67	35	102	11:45-12:00	3	0	3

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	142	269	411
AM - K FACTOR (%)			9.63
AM - D (%)	34.55	65.45	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	142	271	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	196	153	349
PM - K FACTOR (%)			8.18
PM - D (%)	56.16	43.84	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:30 PM to 05:30 PM	
PM - PEAK HR VOLUME	224	155	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	142	269	411
AM - K FACTOR (%)			9.63
AM - D (%)	34.55	65.45	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	196	153	349
PM - K FACTOR (%)			8.18
PM - D (%)	56.16	43.84	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM		
PEAK HR VOLUME	163	150	313
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:30 AM to 10:30 AM	
PEAK HR VOLUME	179	164	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	523	1,013	1,536
AM 12-HR PERIOD (00:00-12:00)	553	1,123	1,676
PM 6-HR PERIOD (12:00-18:00)	997	798	1,795
PM 12-HR PERIOD (12:00-24:00)	1,587	1,004	2,591
24 HOUR PERIOD	2,140	2,127	4,267
D (%)	50.15	49.85	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/11/2016															
12:00-12:15	6	1	7	06:00-06:15	4	24	28	12:00-12:15	31	32	63	06:00-06:15	46	35	81
12:15-12:30	2	1	3	06:15-06:30	2	21	23	12:15-12:30	14	31	45	06:15-06:30	51	20	71
12:30-12:45	5	0	5	06:30-06:45	4	21	25	12:30-12:45	40	28	68	06:30-06:45	54	18	72
12:45-01:00	3	0	3	06:45-07:00	8	41	49	12:45-01:00	32	33	65	06:45-07:00	39	20	59
01:00-01:15	1	0	1	07:00-07:15	10	27	37	01:00-01:15	24	34	58	07:00-07:15	42	10	52
01:15-01:30	4	0	4	07:15-07:30	10	39	49	01:15-01:30	30	32	62	07:15-07:30	45	14	59
01:30-01:45	1	0	1	07:30-07:45	20	57	77	01:30-01:45	25	27	52	07:30-07:45	30	21	51
01:45-02:00	0	0	0	07:45-08:00	25	39	64	01:45-02:00	38	18	56	07:45-08:00	26	19	45
02:00-02:15	0	0	0	08:00-08:15	19	25	44	02:00-02:15	27	24	51	08:00-08:15	18	13	31
02:15-02:30	0	0	0	08:15-08:30	17	65	82	02:15-02:30	27	28	55	08:15-08:30	23	6	29
02:30-02:45	1	1	2	08:30-08:45	21	44	65	02:30-02:45	38	34	72	08:30-08:45	20	10	30
02:45-03:00	0	4	4	08:45-09:00	30	53	83	02:45-03:00	37	36	73	08:45-09:00	25	3	28
03:00-03:15	1	1	2	09:00-09:15	32	45	77	03:00-03:15	48	26	74	09:00-09:15	17	4	21
03:15-03:30	0	2	2	09:15-09:30	31	31	62	03:15-03:30	28	29	57	09:15-09:30	14	7	21
03:30-03:45	0	3	3	09:30-09:45	17	42	59	03:30-03:45	38	23	61	09:30-09:45	19	6	25
03:45-04:00	0	0	0	09:45-10:00	28	32	60	03:45-04:00	43	19	62	09:45-10:00	21	2	23
04:00-04:15	2	5	7	10:00-10:15	20	45	65	04:00-04:15	57	25	82	10:00-10:15	12	6	18
04:15-04:30	1	3	4	10:15-10:30	22	36	58	04:15-04:30	52	22	74	10:15-10:30	5	5	10
04:30-04:45	2	10	12	10:30-10:45	34	40	74	04:30-04:45	51	47	98	10:30-10:45	11	3	14
04:45-05:00	0	12	12	10:45-11:00	11	34	45	04:45-05:00	48	26	74	10:45-11:00	14	1	15
05:00-05:15	0	21	21	11:00-11:15	27	37	64	05:00-05:15	39	22	61	11:00-11:15	8	2	10
05:15-05:30	0	19	19	11:15-11:30	16	19	35	05:15-05:30	41	18	59	11:15-11:30	4	1	5
05:30-05:45	2	19	21	11:30-11:45	34	22	56	05:30-05:45	48	20	68	11:30-11:45	3	1	4
05:45-06:00	2	19	21	11:45-12:00	35	33	68	05:45-06:00	35	26	61	11:45-12:00	7	0	7

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	87	187	274
AM - K FACTOR (%)			7.14
AM - D (%)	31.75	68.25	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	87	187	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	208	120	328
PM - K FACTOR (%)			8.55
PM - D (%)	63.41	36.59	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	208	120	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:15 AM to 09:15 AM		
AM - PEAK HR VOLUME	100	207	307
AM - K FACTOR (%)			8.01
AM - D (%)	32.57	67.43	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 PM to 05:00 PM		
PM - PEAK HR VOLUME	208	120	328
PM - K FACTOR (%)			8.55
PM - D (%)	63.41	36.59	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM		
PEAK HR VOLUME	108	150	258
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	09:30 AM to 10:30 AM	
PEAK HR VOLUME	130	155	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	477	872	1,349
AM 12-HR PERIOD (00:00-12:00)	510	993	1,503
PM 6-HR PERIOD (12:00-18:00)	891	660	1,551
PM 12-HR PERIOD (12:00-24:00)	1,445	887	2,332
24 HOUR PERIOD	1,955	1,880	3,835
D (%)	50.98	49.02	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/14/2016															
12:00-12:15	6	0	6	06:00-06:15	3	21	24	12:00-12:15	32	34	66	06:00-06:15	50	34	84
12:15-12:30	3	3	6	06:15-06:30	7	28	35	12:15-12:30	35	26	61	06:15-06:30	59	33	92
12:30-12:45	3	1	4	06:30-06:45	5	20	25	12:30-12:45	35	21	56	06:30-06:45	56	35	91
12:45-01:00	6	0	6	06:45-07:00	9	46	55	12:45-01:00	26	26	52	06:45-07:00	48	27	75
01:00-01:15	1	0	1	07:00-07:15	4	43	47	01:00-01:15	43	20	63	07:00-07:15	42	19	61
01:15-01:30	0	0	0	07:15-07:30	10	45	55	01:15-01:30	32	35	67	07:15-07:30	37	13	50
01:30-01:45	1	0	1	07:30-07:45	22	105	127	01:30-01:45	55	41	96	07:30-07:45	37	11	48
01:45-02:00	0	1	1	07:45-08:00	42	52	94	01:45-02:00	29	49	78	07:45-08:00	18	9	27
02:00-02:15	1	0	1	08:00-08:15	42	51	93	02:00-02:15	19	29	48	08:00-08:15	21	13	34
02:15-02:30	0	1	1	08:15-08:30	27	53	80	02:15-02:30	69	29	98	08:15-08:30	20	15	35
02:30-02:45	0	0	0	08:30-08:45	19	40	59	02:30-02:45	48	22	70	08:30-08:45	28	8	36
02:45-03:00	0	1	1	08:45-09:00	26	55	81	02:45-03:00	41	40	81	08:45-09:00	28	9	37
03:00-03:15	1	1	2	09:00-09:15	32	33	65	03:00-03:15	41	33	74	09:00-09:15	22	10	32
03:15-03:30	0	1	1	09:15-09:30	33	50	83	03:15-03:30	37	41	78	09:15-09:30	26	4	30
03:30-03:45	1	1	2	09:30-09:45	25	44	69	03:30-03:45	58	32	90	09:30-09:45	25	6	31
03:45-04:00	0	2	2	09:45-10:00	17	40	57	03:45-04:00	51	32	83	09:45-10:00	17	9	26
04:00-04:15	0	3	3	10:00-10:15	29	38	67	04:00-04:15	39	34	73	10:00-10:15	14	5	19
04:15-04:30	2	5	7	10:15-10:30	33	45	78	04:15-04:30	43	38	81	10:15-10:30	19	2	21
04:30-04:45	1	6	7	10:30-10:45	28	37	65	04:30-04:45	52	34	86	10:30-10:45	7	6	13
04:45-05:00	2	9	11	10:45-11:00	29	36	65	04:45-05:00	54	35	89	10:45-11:00	6	3	9
05:00-05:15	0	19	19	11:00-11:15	21	24	45	05:00-05:15	55	27	82	11:00-11:15	9	2	11
05:15-05:30	1	24	25	11:15-11:30	25	28	53	05:15-05:30	39	30	69	11:15-11:30	11	1	12
05:30-05:45	2	20	22	11:30-11:45	29	32	61	05:30-05:45	45	24	69	11:30-11:45	5	0	5
05:45-06:00	0	20	20	11:45-12:00	33	28	61	05:45-06:00	50	22	72	11:45-12:00	9	2	11

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	133	261	394
AM - K FACTOR (%)			9.03
AM - D (%)	33.76	66.24	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:30 AM to 08:30 AM	
AM - PEAK HR VOLUME	133	261	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM		
PM - PEAK HR VOLUME	213	129	342
PM - K FACTOR (%)			7.84
PM - D (%)	62.28	37.72	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	215	141	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	133	261	394
AM - K FACTOR (%)			9.03
AM - D (%)	33.76	66.24	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM		
PM - PEAK HR VOLUME	213	129	342
PM - K FACTOR (%)			7.84
PM - D (%)	62.28	37.72	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM		
PEAK HR VOLUME	172	148	320
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	177	172	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	550	994	1,544
AM 12-HR PERIOD (00:00-12:00)	581	1,112	1,693
PM 6-HR PERIOD (12:00-18:00)	1,028	754	1,782
PM 12-HR PERIOD (12:00-24:00)	1,642	1,030	2,672
24 HOUR PERIOD	2,223	2,142	4,365
D (%)	50.93	49.07	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/13/2016															
12:00-12:15	7	3	10	06:00-06:15	3	20	23	12:00-12:15	29	37	66	06:00-06:15	54	22	76
12:15-12:30	9	3	12	06:15-06:30	5	16	21	12:15-12:30	28	36	64	06:15-06:30	64	28	92
12:30-12:45	8	1	9	06:30-06:45	4	25	29	12:30-12:45	22	35	57	06:30-06:45	54	15	69
12:45-01:00	0	0	0	06:45-07:00	6	44	50	12:45-01:00	39	53	92	06:45-07:00	58	20	78
01:00-01:15	2	0	2	07:00-07:15	7	46	53	01:00-01:15	54	25	79	07:00-07:15	41	20	61
01:15-01:30	0	0	0	07:15-07:30	9	64	73	01:15-01:30	38	28	66	07:15-07:30	48	8	56
01:30-01:45	0	0	0	07:30-07:45	19	98	117	01:30-01:45	44	30	74	07:30-07:45	35	15	50
01:45-02:00	1	1	2	07:45-08:00	42	62	104	01:45-02:00	47	20	67	07:45-08:00	32	9	41
02:00-02:15	0	0	0	08:00-08:15	50	42	92	02:00-02:15	32	31	63	08:00-08:15	27	17	44
02:15-02:30	0	0	0	08:15-08:30	32	28	60	02:15-02:30	37	30	67	08:15-08:30	36	22	58
02:30-02:45	0	0	0	08:30-08:45	24	47	71	02:30-02:45	35	32	67	08:30-08:45	22	15	37
02:45-03:00	2	1	3	08:45-09:00	30	36	66	02:45-03:00	42	43	85	08:45-09:00	19	8	27
03:00-03:15	0	1	1	09:00-09:15	29	48	77	03:00-03:15	35	34	69	09:00-09:15	23	13	36
03:15-03:30	0	0	0	09:15-09:30	24	39	63	03:15-03:30	35	32	67	09:15-09:30	21	12	33
03:30-03:45	0	0	0	09:30-09:45	18	49	67	03:30-03:45	49	46	95	09:30-09:45	14	5	19
03:45-04:00	0	0	0	09:45-10:00	36	35	71	03:45-04:00	40	37	77	09:45-10:00	15	6	21
04:00-04:15	0	3	3	10:00-10:15	29	38	67	04:00-04:15	36	41	77	10:00-10:15	19	3	22
04:15-04:30	2	10	12	10:15-10:30	26	31	57	04:15-04:30	47	27	74	10:15-10:30	15	2	17
04:30-04:45	0	4	4	10:30-10:45	17	31	48	04:30-04:45	43	48	91	10:30-10:45	16	2	18
04:45-05:00	0	15	15	10:45-11:00	30	22	52	04:45-05:00	39	30	69	10:45-11:00	11	4	15
05:00-05:15	0	15	15	11:00-11:15	32	33	65	05:00-05:15	43	35	78	11:00-11:15	9	2	11
05:15-05:30	0	21	21	11:15-11:30	35	26	61	05:15-05:30	53	25	78	11:15-11:30	8	3	11
05:30-05:45	3	15	18	11:30-11:45	26	37	63	05:30-05:45	45	27	72	11:30-11:45	5	2	7
05:45-06:00	1	23	24	11:45-12:00	35	29	64	05:45-06:00	58	33	91	11:45-12:00	7	2	9

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	120	266	386
AM - K FACTOR (%)			8.86
AM - D (%)	31.09	68.91	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	148	270	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	221	110	331
PM - K FACTOR (%)			7.60
PM - D (%)	66.77	33.23	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	03:15 PM to 04:15 PM	
PM - PEAK HR VOLUME	230	156	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	120	266	386
AM - K FACTOR (%)			8.86
AM - D (%)	31.09	68.91	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM		
PM - PEAK HR VOLUME	221	110	331
PM - K FACTOR (%)			7.60
PM - D (%)	66.77	33.23	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:45 PM to 01:45 PM		
PEAK HR VOLUME	175	136	311
DIRECTIONAL PEAK			
PEAK HR TIME	01:00 PM to 02:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	183	171	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	568	946	1,514
AM 12-HR PERIOD (00:00-12:00)	603	1,062	1,665
PM 6-HR PERIOD (12:00-18:00)	970	815	1,785
PM 12-HR PERIOD (12:00-24:00)	1,623	1,070	2,693
24 HOUR PERIOD	2,226	2,132	4,358
D (%)	51.08	48.92	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/16/2016															
12:00-12:15	7	1	8	06:00-06:15	4	9	13	12:00-12:15	39	22	61	06:00-06:15	52	36	88
12:15-12:30	10	2	12	06:15-06:30	1	23	24	12:15-12:30	29	29	58	06:15-06:30	34	36	70
12:30-12:45	5	4	9	06:30-06:45	3	16	19	12:30-12:45	42	29	71	06:30-06:45	49	33	82
12:45-01:00	3	2	5	06:45-07:00	5	23	28	12:45-01:00	35	31	66	06:45-07:00	38	32	70
01:00-01:15	4	0	4	07:00-07:15	11	23	34	01:00-01:15	39	21	60	07:00-07:15	28	19	47
01:15-01:30	7	2	9	07:15-07:30	12	31	43	01:15-01:30	36	34	70	07:15-07:30	27	25	52
01:30-01:45	2	3	5	07:30-07:45	24	41	65	01:30-01:45	52	28	80	07:30-07:45	23	14	37
01:45-02:00	2	1	3	07:45-08:00	24	27	51	01:45-02:00	23	33	56	07:45-08:00	32	22	54
02:00-02:15	1	0	1	08:00-08:15	21	40	61	02:00-02:15	39	32	71	08:00-08:15	28	17	45
02:15-02:30	3	1	4	08:15-08:30	18	39	57	02:15-02:30	36	36	72	08:15-08:30	25	18	43
02:30-02:45	5	1	6	08:30-08:45	25	50	75	02:30-02:45	42	35	77	08:30-08:45	22	21	43
02:45-03:00	0	0	0	08:45-09:00	19	36	55	02:45-03:00	47	25	72	08:45-09:00	19	23	42
03:00-03:15	0	1	1	09:00-09:15	37	42	79	03:00-03:15	38	45	83	09:00-09:15	23	20	43
03:15-03:30	1	0	1	09:15-09:30	37	39	76	03:15-03:30	47	35	82	09:15-09:30	15	18	33
03:30-03:45	0	1	1	09:30-09:45	21	51	72	03:30-03:45	50	29	79	09:30-09:45	27	13	40
03:45-04:00	2	1	3	09:45-10:00	32	51	83	03:45-04:00	51	24	75	09:45-10:00	24	17	41
04:00-04:15	1	0	1	10:00-10:15	30	38	68	04:00-04:15	36	35	71	10:00-10:15	22	5	27
04:15-04:30	1	1	2	10:15-10:30	34	16	50	04:15-04:30	39	27	66	10:15-10:30	19	17	36
04:30-04:45	1	1	2	10:30-10:45	34	26	60	04:30-04:45	39	34	73	10:30-10:45	15	7	22
04:45-05:00	0	1	1	10:45-11:00	34	30	64	04:45-05:00	39	30	69	10:45-11:00	8	2	10
05:00-05:15	0	1	1	11:00-11:15	30	34	64	05:00-05:15	43	30	73	11:00-11:15	8	7	15
05:15-05:30	0	4	4	11:15-11:30	41	39	80	05:15-05:30	44	28	72	11:15-11:30	10	5	15
05:30-05:45	2	8	10	11:30-11:45	31	33	64	05:30-05:45	42	31	73	11:30-11:45	12	10	22
05:45-06:00	0	6	6	11:45-12:00	35	35	70	05:45-06:00	20	27	47	11:45-12:00	10	2	12

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	83	165	248
AM - K FACTOR (%)			6.02
AM - D (%)	33.47	66.53	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	88	165	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM		
PM - PEAK HR VOLUME	186	133	319
PM - K FACTOR (%)			7.74
PM - D (%)	58.31	41.69	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM	06:00 PM to 07:00 PM	
PM - PEAK HR VOLUME	186	137	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:00 AM to 10:00 AM		
AM - PEAK HR VOLUME	127	183	310
AM - K FACTOR (%)			7.52
AM - D (%)	40.97	59.03	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 PM to 04:00 PM		
PM - PEAK HR VOLUME	186	133	319
PM - K FACTOR (%)			7.74
PM - D (%)	58.31	41.69	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:00 AM to 10:00 AM		
PEAK HR VOLUME	127	183	310
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	164	183	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	563	792	1,355
AM 12-HR PERIOD (00:00-12:00)	620	834	1,454
PM 6-HR PERIOD (12:00-18:00)	947	730	1,677
PM 12-HR PERIOD (12:00-24:00)	1,517	1,149	2,666
24 HOUR PERIOD	2,137	1,983	4,120
D (%)	51.87	48.13	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/15/2016															
12:00-12:15	8	3	11	06:00-06:15	1	14	15	12:00-12:15	24	36	60	06:00-06:15	35	23	58
12:15-12:30	6	5	11	06:15-06:30	2	17	19	12:15-12:30	28	27	55	06:15-06:30	56	19	75
12:30-12:45	4	2	6	06:30-06:45	3	30	33	12:30-12:45	26	32	58	06:30-06:45	60	31	91
12:45-01:00	2	0	2	06:45-07:00	9	32	41	12:45-01:00	20	32	52	06:45-07:00	56	30	86
01:00-01:15	4	0	4	07:00-07:15	10	29	39	01:00-01:15	29	28	57	07:00-07:15	77	19	96
01:15-01:30	1	0	1	07:15-07:30	11	56	67	01:15-01:30	27	27	54	07:15-07:30	60	13	73
01:30-01:45	2	0	2	07:30-07:45	21	89	110	01:30-01:45	24	44	68	07:30-07:45	32	15	47
01:45-02:00	1	0	1	07:45-08:00	36	48	84	01:45-02:00	26	34	60	07:45-08:00	35	11	46
02:00-02:15	1	0	1	08:00-08:15	52	39	91	02:00-02:15	22	23	45	08:00-08:15	26	17	43
02:15-02:30	0	0	0	08:15-08:30	20	50	70	02:15-02:30	34	33	67	08:15-08:30	31	15	46
02:30-02:45	1	0	1	08:30-08:45	24	37	61	02:30-02:45	42	27	69	08:30-08:45	29	21	50
02:45-03:00	1	0	1	08:45-09:00	27	37	64	02:45-03:00	25	30	55	08:45-09:00	21	8	29
03:00-03:15	1	0	1	09:00-09:15	25	35	60	03:00-03:15	31	24	55	09:00-09:15	22	18	40
03:15-03:30	0	0	0	09:15-09:30	23	26	49	03:15-03:30	41	29	70	09:15-09:30	34	11	45
03:30-03:45	2	1	3	09:30-09:45	23	36	59	03:30-03:45	64	30	94	09:30-09:45	24	10	34
03:45-04:00	0	2	2	09:45-10:00	24	33	57	03:45-04:00	50	28	78	09:45-10:00	10	9	19
04:00-04:15	0	7	7	10:00-10:15	17	35	52	04:00-04:15	40	30	70	10:00-10:15	15	7	22
04:15-04:30	2	4	6	10:15-10:30	26	42	68	04:15-04:30	40	36	76	10:15-10:30	24	5	29
04:30-04:45	0	5	5	10:30-10:45	24	41	65	04:30-04:45	46	39	85	10:30-10:45	20	11	31
04:45-05:00	1	7	8	10:45-11:00	21	25	46	04:45-05:00	40	29	69	10:45-11:00	13	7	20
05:00-05:15	2	14	16	11:00-11:15	21	14	35	05:00-05:15	49	24	73	11:00-11:15	14	7	21
05:15-05:30	1	16	17	11:15-11:30	31	28	59	05:15-05:30	34	34	68	11:15-11:30	8	2	10
05:30-05:45	2	19	21	11:30-11:45	29	35	64	05:30-05:45	36	20	56	11:30-11:45	7	6	13
05:45-06:00	2	20	22	11:45-12:00	25	20	45	05:45-06:00	36	24	60	11:45-12:00	8	2	10

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	129	226	355
AM - K FACTOR (%)			8.68
AM - D (%)	36.34	63.66	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	132	232	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 PM to 04:30 PM		
PM - PEAK HR VOLUME	194	124	318
PM - K FACTOR (%)			7.78
PM - D (%)	61.01	38.99	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	207	134	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	129	226	355
AM - K FACTOR (%)			8.68
AM - D (%)	36.34	63.66	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:15 PM to 07:15 PM		
PM - PEAK HR VOLUME	249	99	348
PM - K FACTOR (%)			8.51
PM - D (%)	71.55	28.45	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	09:45 AM to 10:45 AM		
PEAK HR VOLUME	91	151	242
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	09:45 AM to 10:45 AM	
PEAK HR VOLUME	124	151	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	505	848	1,353
AM 12-HR PERIOD (00:00-12:00)	549	953	1,502
PM 6-HR PERIOD (12:00-18:00)	834	720	1,554
PM 12-HR PERIOD (12:00-24:00)	1,551	1,037	2,588
24 HOUR PERIOD	2,100	1,990	4,090
D (%)	51.34	48.66	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/18/2016															
12:00-12:15	9	2	11	06:00-06:15	3	16	19	12:00-12:15	37	34	71	06:00-06:15	57	24	81
12:15-12:30	1	2	3	06:15-06:30	3	12	15	12:15-12:30	36	26	62	06:15-06:30	52	18	70
12:30-12:45	7	1	8	06:30-06:45	6	19	25	12:30-12:45	30	28	58	06:30-06:45	41	27	68
12:45-01:00	1	0	1	06:45-07:00	3	10	13	12:45-01:00	35	41	76	06:45-07:00	55	29	84
01:00-01:15	3	1	4	07:00-07:15	6	20	26	01:00-01:15	29	34	63	07:00-07:15	41	20	61
01:15-01:30	1	0	1	07:15-07:30	8	29	37	01:15-01:30	33	38	71	07:15-07:30	32	13	45
01:30-01:45	3	0	3	07:30-07:45	19	35	54	01:30-01:45	32	34	66	07:30-07:45	19	13	32
01:45-02:00	1	1	2	07:45-08:00	21	40	61	01:45-02:00	36	29	65	07:45-08:00	20	16	36
02:00-02:15	2	1	3	08:00-08:15	25	43	68	02:00-02:15	31	37	68	08:00-08:15	22	16	38
02:15-02:30	0	0	0	08:15-08:30	25	50	75	02:15-02:30	40	34	74	08:15-08:30	26	20	46
02:30-02:45	1	2	3	08:30-08:45	20	48	68	02:30-02:45	29	37	66	08:30-08:45	16	5	21
02:45-03:00	1	2	3	08:45-09:00	43	50	93	02:45-03:00	39	23	62	08:45-09:00	20	11	31
03:00-03:15	0	2	2	09:00-09:15	31	37	68	03:00-03:15	29	29	58	09:00-09:15	25	6	31
03:15-03:30	1	0	1	09:15-09:30	15	66	81	03:15-03:30	37	40	77	09:15-09:30	19	4	23
03:30-03:45	0	0	0	09:30-09:45	20	41	61	03:30-03:45	41	29	70	09:30-09:45	26	3	29
03:45-04:00	0	1	1	09:45-10:00	39	35	74	03:45-04:00	31	39	70	09:45-10:00	9	6	15
04:00-04:15	0	2	2	10:00-10:15	25	36	61	04:00-04:15	46	28	74	10:00-10:15	14	8	22
04:15-04:30	1	0	1	10:15-10:30	31	43	74	04:15-04:30	33	35	68	10:15-10:30	11	5	16
04:30-04:45	0	9	9	10:30-10:45	27	28	55	04:30-04:45	34	30	64	10:30-10:45	10	4	14
04:45-05:00	1	2	3	10:45-11:00	30	38	68	04:45-05:00	39	34	73	10:45-11:00	17	1	18
05:00-05:15	0	5	5	11:00-11:15	29	37	66	05:00-05:15	48	24	72	11:00-11:15	6	3	9
05:15-05:30	1	8	9	11:15-11:30	41	42	83	05:15-05:30	47	28	75	11:15-11:30	9	3	12
05:30-05:45	0	7	7	11:30-11:45	33	43	76	05:30-05:45	49	42	91	11:30-11:45	4	3	7
05:45-06:00	1	15	16	11:45-12:00	17	51	68	05:45-06:00	49	31	80	11:45-12:00	5	2	7

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM		
AM - PEAK HR VOLUME	113	191	304
AM - K FACTOR (%)			7.64
AM - D (%)	37.17	62.83	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	113	191	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	202	125	327
PM - K FACTOR (%)			8.22
PM - D (%)	61.77	38.23	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	03:00 PM to 04:00 PM	
PM - PEAK HR VOLUME	207	137	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:30 AM to 09:30 AM		
AM - PEAK HR VOLUME	109	201	310
AM - K FACTOR (%)			7.79
AM - D (%)	35.16	64.84	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:15 PM to 06:15 PM		
PM - PEAK HR VOLUME	202	125	327
PM - K FACTOR (%)			8.22
PM - D (%)	61.77	38.23	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:15 AM to 12:15 PM		
PEAK HR VOLUME	128	170	298
DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	139	179	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	520	869	1,389
AM 12-HR PERIOD (00:00-12:00)	555	932	1,487
PM 6-HR PERIOD (12:00-18:00)	890	784	1,674
PM 12-HR PERIOD (12:00-24:00)	1,446	1,044	2,490
24 HOUR PERIOD	2,001	1,976	3,977
D (%)	50.31	49.69	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/17/2016															
12:00-12:15	6	1	7	06:00-06:15	2	11	13	12:00-12:15	32	37	69	06:00-06:15	28	28	56
12:15-12:30	6	1	7	06:15-06:30	3	16	19	12:15-12:30	27	26	53	06:15-06:30	34	21	55
12:30-12:45	5	1	6	06:30-06:45	5	20	25	12:30-12:45	28	33	61	06:30-06:45	50	28	78
12:45-01:00	10	0	10	06:45-07:00	3	18	21	12:45-01:00	24	21	45	06:45-07:00	44	20	64
01:00-01:15	6	0	6	07:00-07:15	10	14	24	01:00-01:15	37	33	70	07:00-07:15	54	19	73
01:15-01:30	6	1	7	07:15-07:30	5	27	32	01:15-01:30	21	35	56	07:15-07:30	30	18	48
01:30-01:45	2	0	2	07:30-07:45	12	42	54	01:30-01:45	30	28	58	07:30-07:45	21	18	39
01:45-02:00	4	0	4	07:45-08:00	12	43	55	01:45-02:00	33	30	63	07:45-08:00	17	18	35
02:00-02:15	2	0	2	08:00-08:15	23	30	53	02:00-02:15	39	32	71	08:00-08:15	30	22	52
02:15-02:30	1	1	2	08:15-08:30	22	27	49	02:15-02:30	20	34	54	08:15-08:30	22	11	33
02:30-02:45	4	1	5	08:30-08:45	22	22	44	02:30-02:45	32	26	58	08:30-08:45	30	11	41
02:45-03:00	6	0	6	08:45-09:00	25	37	62	02:45-03:00	30	26	56	08:45-09:00	17	10	27
03:00-03:15	2	0	2	09:00-09:15	17	31	48	03:00-03:15	31	35	66	09:00-09:15	19	6	25
03:15-03:30	3	0	3	09:15-09:30	16	44	60	03:15-03:30	44	36	80	09:15-09:30	22	9	31
03:30-03:45	1	3	4	09:30-09:45	32	55	87	03:30-03:45	28	33	61	09:30-09:45	22	5	27
03:45-04:00	1	1	2	09:45-10:00	33	46	79	03:45-04:00	27	30	57	09:45-10:00	7	4	11
04:00-04:15	0	0	0	10:00-10:15	37	33	70	04:00-04:15	41	24	65	10:00-10:15	12	8	20
04:15-04:30	1	2	3	10:15-10:30	36	32	68	04:15-04:30	34	32	66	10:15-10:30	16	8	24
04:30-04:45	1	1	2	10:30-10:45	22	46	68	04:30-04:45	45	20	65	10:30-10:45	9	2	11
04:45-05:00	3	0	3	10:45-11:00	33	39	72	04:45-05:00	29	32	61	10:45-11:00	11	1	12
05:00-05:15	1	0	1	11:00-11:15	36	43	79	05:00-05:15	34	28	62	11:00-11:15	14	2	16
05:15-05:30	1	6	7	11:15-11:30	24	42	66	05:15-05:30	36	46	82	11:15-11:30	6	3	9
05:30-05:45	0	7	7	11:30-11:45	39	45	84	05:30-05:45	42	33	75	11:30-11:45	3	3	6
05:45-06:00	0	7	7	11:45-12:00	37	40	77	05:45-06:00	40	28	68	11:45-12:00	4	0	4

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	69	142	211
AM - K FACTOR (%)			5.65
AM - D (%)	32.70	67.30	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	92	142	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	152	135	287
PM - K FACTOR (%)			7.69
PM - D (%)	52.96	47.04	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:45 PM to 05:45 PM	
PM - PEAK HR VOLUME	156	139	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM		
AM - PEAK HR VOLUME	136	170	306
AM - K FACTOR (%)			8.20
AM - D (%)	44.44	55.56	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	152	135	287
PM - K FACTOR (%)			7.69
PM - D (%)	52.96	47.04	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:00 AM to 12:00 PM		
PEAK HR VOLUME	136	170	306
DIRECTIONAL PEAK			
PEAK HR TIME	09:30 AM to 10:30 AM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	138	178	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	506	803	1,309
AM 12-HR PERIOD (00:00-12:00)	578	836	1,414
PM 6-HR PERIOD (12:00-18:00)	784	738	1,522
PM 12-HR PERIOD (12:00-24:00)	1,306	1,013	2,319
24 HOUR PERIOD	1,884	1,849	3,733
D (%)	50.47	49.53	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/20/2016															
12:00-12:15	4	2	6	06:00-06:15	4	31	35	12:00-12:15	27	37	64	06:00-06:15	49	24	73
12:15-12:30	6	2	8	06:15-06:30	6	30	36	12:15-12:30	26	35	61	06:15-06:30	53	25	78
12:30-12:45	4	1	5	06:30-06:45	5	29	34	12:30-12:45	30	41	71	06:30-06:45	40	22	62
12:45-01:00	3	0	3	06:45-07:00	6	31	37	12:45-01:00	39	41	80	06:45-07:00	49	29	78
01:00-01:15	0	0	0	07:00-07:15	9	44	53	01:00-01:15	49	36	85	07:00-07:15	39	17	56
01:15-01:30	0	1	1	07:15-07:30	11	56	67	01:15-01:30	45	25	70	07:15-07:30	48	15	63
01:30-01:45	3	1	4	07:30-07:45	26	109	135	01:30-01:45	34	36	70	07:30-07:45	39	10	49
01:45-02:00	0	0	0	07:45-08:00	47	46	93	01:45-02:00	35	24	59	07:45-08:00	35	7	42
02:00-02:15	0	0	0	08:00-08:15	39	46	85	02:00-02:15	23	21	44	08:00-08:15	28	7	35
02:15-02:30	0	0	0	08:15-08:30	25	50	75	02:15-02:30	31	37	68	08:15-08:30	18	9	27
02:30-02:45	0	0	0	08:30-08:45	26	40	66	02:30-02:45	35	42	77	08:30-08:45	24	11	35
02:45-03:00	0	2	2	08:45-09:00	30	33	63	02:45-03:00	39	31	70	08:45-09:00	24	12	36
03:00-03:15	0	0	0	09:00-09:15	27	42	69	03:00-03:15	41	45	86	09:00-09:15	29	7	36
03:15-03:30	2	1	3	09:15-09:30	14	52	66	03:15-03:30	30	30	60	09:15-09:30	16	14	30
03:30-03:45	0	4	4	09:30-09:45	27	30	57	03:30-03:45	48	27	75	09:30-09:45	26	2	28
03:45-04:00	0	1	1	09:45-10:00	30	38	68	03:45-04:00	49	30	79	09:45-10:00	11	2	13
04:00-04:15	0	2	2	10:00-10:15	22	43	65	04:00-04:15	35	36	71	10:00-10:15	8	5	13
04:15-04:30	1	5	6	10:15-10:30	20	36	56	04:15-04:30	47	33	80	10:15-10:30	17	6	23
04:30-04:45	0	5	5	10:30-10:45	25	38	63	04:30-04:45	53	35	88	10:30-10:45	16	2	18
04:45-05:00	0	11	11	10:45-11:00	28	34	62	04:45-05:00	46	27	73	10:45-11:00	11	5	16
05:00-05:15	1	17	18	11:00-11:15	25	19	44	05:00-05:15	41	35	76	11:00-11:15	15	2	17
05:15-05:30	1	26	27	11:15-11:30	38	29	67	05:15-05:30	43	30	73	11:15-11:30	4	2	6
05:30-05:45	1	21	22	11:30-11:45	23	23	46	05:30-05:45	58	31	89	11:30-11:45	8	2	10
05:45-06:00	4	14	18	11:45-12:00	24	36	60	05:45-06:00	47	30	77	11:45-12:00	4	2	6

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	137	251	388
AM - K FACTOR (%)			9.14
AM - D (%)	35.31	64.69	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	137	257	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	184	134	318
PM - K FACTOR (%)			7.49
PM - D (%)	57.86	42.14	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:30 PM to 06:30 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	207	134	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	137	251	388
AM - K FACTOR (%)			9.14
AM - D (%)	35.31	64.69	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	184	134	318
PM - K FACTOR (%)			7.49
PM - D (%)	57.86	42.14	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM		
PEAK HR VOLUME	163	143	306
DIRECTIONAL PEAK			
PEAK HR TIME	12:45 PM to 01:45 PM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	167	163	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	537	965	1,502
AM 12-HR PERIOD (00:00-12:00)	567	1,081	1,648
PM 6-HR PERIOD (12:00-18:00)	951	795	1,746
PM 12-HR PERIOD (12:00-24:00)	1,562	1,034	2,596
24 HOUR PERIOD	2,129	2,115	4,244
D (%)	50.16	49.84	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/19/2016															
12:00-12:15	4	0	4	06:00-06:15	4	19	23	12:00-12:15	36	34	70	06:00-06:15	55	31	86
12:15-12:30	5	2	7	06:15-06:30	5	23	28	12:15-12:30	30	28	58	06:15-06:30	54	23	77
12:30-12:45	1	0	1	06:30-06:45	6	23	29	12:30-12:45	32	21	53	06:30-06:45	53	23	76
12:45-01:00	3	0	3	06:45-07:00	5	38	43	12:45-01:00	35	33	68	06:45-07:00	55	16	71
01:00-01:15	2	4	6	07:00-07:15	5	39	44	01:00-01:15	42	33	75	07:00-07:15	33	20	53
01:15-01:30	1	0	1	07:15-07:30	15	60	75	01:15-01:30	39	36	75	07:15-07:30	38	12	50
01:30-01:45	1	0	1	07:30-07:45	23	84	107	01:30-01:45	26	37	63	07:30-07:45	32	13	45
01:45-02:00	0	0	0	07:45-08:00	47	62	109	01:45-02:00	27	32	59	07:45-08:00	30	12	42
02:00-02:15	0	0	0	08:00-08:15	55	44	99	02:00-02:15	32	42	74	08:00-08:15	18	11	29
02:15-02:30	0	1	1	08:15-08:30	30	56	86	02:15-02:30	56	37	93	08:15-08:30	26	10	36
02:30-02:45	0	2	2	08:30-08:45	25	59	84	02:30-02:45	44	36	80	08:30-08:45	19	10	29
02:45-03:00	0	1	1	08:45-09:00	23	42	65	02:45-03:00	44	33	77	08:45-09:00	19	8	27
03:00-03:15	1	2	3	09:00-09:15	30	46	76	03:00-03:15	41	30	71	09:00-09:15	21	3	24
03:15-03:30	0	0	0	09:15-09:30	22	49	71	03:15-03:30	31	35	66	09:15-09:30	24	4	28
03:30-03:45	0	0	0	09:30-09:45	23	48	71	03:30-03:45	49	26	75	09:30-09:45	13	5	18
03:45-04:00	1	0	1	09:45-10:00	22	39	61	03:45-04:00	67	34	101	09:45-10:00	10	1	11
04:00-04:15	1	4	5	10:00-10:15	27	37	64	04:00-04:15	46	35	81	10:00-10:15	14	2	16
04:15-04:30	1	9	10	10:15-10:30	23	46	69	04:15-04:30	42	39	81	10:15-10:30	15	2	17
04:30-04:45	1	3	4	10:30-10:45	21	36	57	04:30-04:45	50	47	97	10:30-10:45	8	6	14
04:45-05:00	3	15	18	10:45-11:00	18	28	46	04:45-05:00	62	25	87	10:45-11:00	13	1	14
05:00-05:15	2	22	24	11:00-11:15	16	32	48	05:00-05:15	72	31	103	11:00-11:15	7	4	11
05:15-05:30	1	27	28	11:15-11:30	26	32	58	05:15-05:30	58	33	91	11:15-11:30	8	3	11
05:30-05:45	1	16	17	11:30-11:45	32	25	57	05:30-05:45	62	30	92	11:30-11:45	7	1	8
05:45-06:00	2	27	29	11:45-12:00	31	31	62	05:45-06:00	62	32	94	11:45-12:00	1	1	2

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	155	246	401
AM - K FACTOR (%)			9.16
AM - D (%)	38.65	61.35	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM	
AM - PEAK HR VOLUME	157	250	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	254	126	380
PM - K FACTOR (%)			8.68
PM - D (%)	66.84	33.16	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 PM to 05:45 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	254	155	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	155	246	401
AM - K FACTOR (%)			9.16
AM - D (%)	38.65	61.35	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:00 PM to 06:00 PM		
PM - PEAK HR VOLUME	254	126	380
PM - K FACTOR (%)			8.68
PM - D (%)	66.84	33.16	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM		
PEAK HR VOLUME	176	148	324
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	176	182	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	534	998	1,532
AM 12-HR PERIOD (00:00-12:00)	565	1,133	1,698
PM 6-HR PERIOD (12:00-18:00)	1,085	799	1,884
PM 12-HR PERIOD (12:00-24:00)	1,658	1,021	2,679
24 HOUR PERIOD	2,223	2,154	4,377
D (%)	50.79	49.21	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/22/2016															
12:00-12:15	4	0	4	06:00-06:15	2	18	20	12:00-12:15	38	32	70	06:00-06:15	59	26	85
12:15-12:30	2	1	3	06:15-06:30	1	26	27	12:15-12:30	35	30	65	06:15-06:30	45	28	73
12:30-12:45	4	1	5	06:30-06:45	4	28	32	12:30-12:45	31	37	68	06:30-06:45	56	25	81
12:45-01:00	1	1	2	06:45-07:00	8	27	35	12:45-01:00	41	26	67	06:45-07:00	67	23	90
01:00-01:15	2	0	2	07:00-07:15	10	48	58	01:00-01:15	50	37	87	07:00-07:15	56	21	77
01:15-01:30	0	0	0	07:15-07:30	12	65	77	01:15-01:30	47	28	75	07:15-07:30	41	20	61
01:30-01:45	3	0	3	07:30-07:45	15	91	106	01:30-01:45	36	33	69	07:30-07:45	34	16	50
01:45-02:00	5	2	7	07:45-08:00	43	61	104	01:45-02:00	29	43	72	07:45-08:00	25	14	39
02:00-02:15	0	1	1	08:00-08:15	39	46	85	02:00-02:15	26	40	66	08:00-08:15	27	22	49
02:15-02:30	3	0	3	08:15-08:30	25	59	84	02:15-02:30	48	27	75	08:15-08:30	30	9	39
02:30-02:45	1	1	2	08:30-08:45	17	51	68	02:30-02:45	46	20	66	08:30-08:45	28	14	42
02:45-03:00	1	2	3	08:45-09:00	26	53	79	02:45-03:00	39	23	62	08:45-09:00	31	14	45
03:00-03:15	0	2	2	09:00-09:15	32	32	64	03:00-03:15	27	36	63	09:00-09:15	27	9	36
03:15-03:30	0	1	1	09:15-09:30	28	37	65	03:15-03:30	53	37	90	09:15-09:30	16	12	28
03:30-03:45	0	2	2	09:30-09:45	26	47	73	03:30-03:45	40	41	81	09:30-09:45	17	6	23
03:45-04:00	2	3	5	09:45-10:00	25	44	69	03:45-04:00	50	37	87	09:45-10:00	18	7	25
04:00-04:15	1	6	7	10:00-10:15	26	43	69	04:00-04:15	35	44	79	10:00-10:15	21	7	28
04:15-04:30	0	5	5	10:15-10:30	26	37	63	04:15-04:30	64	37	101	10:15-10:30	18	8	26
04:30-04:45	1	3	4	10:30-10:45	34	31	65	04:30-04:45	48	45	93	10:30-10:45	11	2	13
04:45-05:00	0	12	12	10:45-11:00	22	33	55	04:45-05:00	43	20	63	10:45-11:00	14	4	18
05:00-05:15	0	10	10	11:00-11:15	27	34	61	05:00-05:15	39	38	77	11:00-11:15	13	5	18
05:15-05:30	1	24	25	11:15-11:30	27	23	50	05:15-05:30	56	35	91	11:15-11:30	17	9	26
05:30-05:45	2	22	24	11:30-11:45	35	36	71	05:30-05:45	54	33	87	11:30-11:45	20	2	22
05:45-06:00	1	20	21	11:45-12:00	23	32	55	05:45-06:00	48	26	74	11:45-12:00	9	4	13

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	122	257	379
AM - K FACTOR (%)			8.38
AM - D (%)	32.19	67.81	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	124	265	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	197	163	360
PM - K FACTOR (%)			7.96
PM - D (%)	54.72	45.28	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	227	163	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	122	257	379
AM - K FACTOR (%)			8.38
AM - D (%)	32.19	67.81	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 PM to 04:45 PM		
PM - PEAK HR VOLUME	197	163	360
PM - K FACTOR (%)			7.96
PM - D (%)	54.72	45.28	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:00 PM to 02:00 PM		
PEAK HR VOLUME	162	141	303
DIRECTIONAL PEAK			
PEAK HR TIME	12:45 PM to 01:45 PM	09:15 AM to 10:15 AM	
PEAK HR VOLUME	174	171	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	533	1,002	1,535
AM 12-HR PERIOD (00:00-12:00)	567	1,121	1,688
PM 6-HR PERIOD (12:00-18:00)	1,023	805	1,828
PM 12-HR PERIOD (12:00-24:00)	1,723	1,112	2,835
24 HOUR PERIOD	2,290	2,233	4,523
D (%)	50.63	49.37	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 4100
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 01/21/2016															
12:00-12:15	8	4	12	06:00-06:15	4	24	28	12:00-12:15	26	21	47	06:00-06:15	37	34	71
12:15-12:30	4	0	4	06:15-06:30	2	27	29	12:15-12:30	27	42	69	06:15-06:30	53	34	87
12:30-12:45	5	0	5	06:30-06:45	5	19	24	12:30-12:45	26	25	51	06:30-06:45	73	26	99
12:45-01:00	2	0	2	06:45-07:00	8	32	40	12:45-01:00	35	33	68	06:45-07:00	53	37	90
01:00-01:15	1	0	1	07:00-07:15	5	44	49	01:00-01:15	32	23	55	07:00-07:15	54	16	70
01:15-01:30	1	0	1	07:15-07:30	10	44	54	01:15-01:30	31	23	54	07:15-07:30	30	19	49
01:30-01:45	0	0	0	07:30-07:45	13	92	105	01:30-01:45	37	46	83	07:30-07:45	34	16	50
01:45-02:00	0	0	0	07:45-08:00	52	55	107	01:45-02:00	30	44	74	07:45-08:00	27	15	42
02:00-02:15	3	0	3	08:00-08:15	43	35	78	02:00-02:15	27	35	62	08:00-08:15	25	7	32
02:15-02:30	0	0	0	08:15-08:30	11	41	52	02:15-02:30	59	29	88	08:15-08:30	33	14	47
02:30-02:45	1	0	1	08:30-08:45	21	45	66	02:30-02:45	56	25	81	08:30-08:45	35	3	38
02:45-03:00	0	3	3	08:45-09:00	23	39	62	02:45-03:00	38	31	69	08:45-09:00	31	10	41
03:00-03:15	0	1	1	09:00-09:15	38	46	84	03:00-03:15	48	35	83	09:00-09:15	27	9	36
03:15-03:30	0	3	3	09:15-09:30	22	49	71	03:15-03:30	35	46	81	09:15-09:30	31	10	41
03:30-03:45	0	3	3	09:30-09:45	35	43	78	03:30-03:45	35	35	70	09:30-09:45	22	13	35
03:45-04:00	1	0	1	09:45-10:00	23	44	67	03:45-04:00	42	29	71	09:45-10:00	20	6	26
04:00-04:15	0	3	3	10:00-10:15	24	40	64	04:00-04:15	43	33	76	10:00-10:15	11	3	14
04:15-04:30	2	10	12	10:15-10:30	19	41	60	04:15-04:30	42	41	83	10:15-10:30	12	5	17
04:30-04:45	0	9	9	10:30-10:45	14	39	53	04:30-04:45	56	45	101	10:30-10:45	13	2	15
04:45-05:00	3	12	15	10:45-11:00	20	26	46	04:45-05:00	51	36	87	10:45-11:00	13	5	18
05:00-05:15	2	23	25	11:00-11:15	28	25	53	05:00-05:15	59	32	91	11:00-11:15	13	0	13
05:15-05:30	0	21	21	11:15-11:30	44	30	74	05:15-05:30	54	38	92	11:15-11:30	11	3	14
05:30-05:45	2	19	21	11:30-11:45	32	23	55	05:30-05:45	45	37	82	11:30-11:45	4	1	5
05:45-06:00	1	14	15	11:45-12:00	29	38	67	05:45-06:00	53	30	83	11:45-12:00	10	5	15

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	118	226	344
AM - K FACTOR (%)			7.83
AM - D (%)	34.30	65.70	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	127	235	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	220	151	371
PM - K FACTOR (%)			8.45
PM - D (%)	59.30	40.70	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM	04:00 PM to 05:00 PM	
PM - PEAK HR VOLUME	220	155	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	118	226	344
AM - K FACTOR (%)			7.83
AM - D (%)	34.30	65.70	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 PM to 05:30 PM		
PM - PEAK HR VOLUME	220	151	371
PM - K FACTOR (%)			8.45
PM - D (%)	59.30	40.70	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:30 PM to 02:30 PM		
PEAK HR VOLUME	153	154	307
DIRECTIONAL PEAK			
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	180	182	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	525	941	1,466
AM 12-HR PERIOD (00:00-12:00)	561	1,066	1,627
PM 6-HR PERIOD (12:00-18:00)	987	814	1,801
PM 12-HR PERIOD (12:00-24:00)	1,659	1,107	2,766
24 HOUR PERIOD	2,220	2,173	4,393
D (%)	50.53	49.47	100.00

Run Date: 2017/08/08

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section

Vehicle Classification Data Summary
2016

Site ID:	**B72928000000**	**Route No:**	**9280**	**Date From:**	2016/01/09 0:00
Town:	**Oahu**	**Direction:**	+MP	**Date To:**	2016/01/22 23:45
Location:	**Pupukea Rd - Kamehameha Hwy to Alapio Rd**				

Functional Classification: 18 TEST NEW URBAN: MINOR COLLECTOR

REPORT TOTALS - 336 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	727	1.26%	1455
PC	36841	63.81%	73682
2A-4T	19682	34.09%	39364
LIGHT VEHICLE TOTALS	57250	99.16%	114501
	HEAVY VEHICLES		
Bus	160	0.28%	400
SINGLE UNIT TRUCK			
2A-6T	156	0.27%	312
3A-SU	99	0.17%	297
4A-SU	6	0.01%	24
SINGLE-TRAILER TRUCKS			
4A-ST	34	0.06%	136
5A-ST	18	0.03%	90
6A-ST	2	0.00%	12
MULTI-TRAILER TRUCKS			
5A-MT	10	0.02%	50
6A-MT	0	0.00%	0
7A-MT	0	0.00%	0
HEAVY VEHICLE TOTALS	485	0.84%	1321
CLASSIFIED VEHICLES TOTALS	57735 (A)	100.00%	115822 (B)
UNCLASSIFIED VEHICLES TOTALS	-0	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.997

ROADTUBE EQUIVALENT(B/2) = 57911 (C)

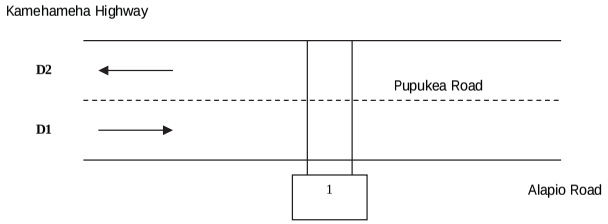
PEAK HOUR VOLUME : 380 **2016/01/19 17:00**	**PEAK HOUR TRUCK VOLUME**	**% TOTAL PEAK HOUR VOLUME**	**24 HOUR TRUCK VOLUME**	**AADT**	**% OF AADT**	**HPMS K-FACTOR (PEAK/AADT) (ITEM 66)**
SINGLE UNIT TRUCKS (TYPE 4-7)	**2**	**(65A-1) 0.53%**	**30**	**4100**	**(65A-2) 0.73%**	**9.27%**
COMBINATION (TYPE 8-13)	**1**	**(65B-1) 0.26%**	**4**		**(65B-2) 0.10%**	**9.27%**

Traffic Data Service
Traffic Station Sketch

N

Island: Oahu
Area: Waimea

Section ID/Station #: B72928000000



Meter #	**File Name**	**GPS**
1. t161	D1202003_B72928000000	21.64597, -158.0592
2.	D1202004_B72928000000	

Station Description:
Pupukea Road: Kamehameha Highway to Alapio Road

Survey Beginning Date/Time: 12/2/2016 @ 0000		Survey Ending Date/Time: 12/16/2016 @ 2400

Survey Method:	Road Tube	Data Type:	Class
Survey Crew:	LM		C1B
Sketch Updated:		By:	SR
Remarks:	748		

FACILITY NAME	JURI	FUNC CLASS	AREA TYPE	ROUTE NO.	ROUTE MILE
Pupukea Road		18		9280	

D1= Direction to End	D1: Alapio Road / Kanalani Place
D2= Direction to Begin	D2: Kamehameha Highway / Kamehameha Highway

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/03/2016															
05:30-05:45	10	14	24	12:00-12:15	3	0	3	11:45-12:00	13	27	40	05:45-06:00	29	28	57
05:45-06:00	19	11	30	12:15-12:30	2	1	3	12:00-12:15	9	30	39	06:00-06:15	19	28	47
12:00-12:15	5	4	9	06:45-07:00	22	18	40	06:30-06:45	9	25	34	12:30-12:45	20	30	50
12:15-12:30	11	6	17	07:00-07:15	24	35	59	06:45-07:00	6	22	28	12:45-01:00	25	25	50
12:30-12:45	7	6	13	07:15-07:30	24	32	56	07:00-07:15	7	24	31	01:00-01:15	14	31	45
12:45-01:00	3	0	3	07:30-07:45	28	19	47	07:15-07:30	11	43	54	01:15-01:30	24	30	54
01:00-01:15	4	4	8	07:45-08:00	22	18	40	07:30-07:45	18	37	55	01:30-01:45	18	34	52
01:15-01:30	8	4	12	08:00-08:15	17	20	37	07:45-08:00	17	48	65	01:45-02:00	17	39	56
01:30-01:45	5	3	8	08:15-08:30	13	10	23	08:00-08:15	12	42	54	02:00-02:15	17	32	49
01:45-02:00	2	5	7	08:30-08:45	13	14	27	08:15-08:30	14	49	63	02:15-02:30	20	32	52
02:00-02:15	3	0	3	08:45-09:00	15	4	19	08:30-08:45	16	45	61	02:30-02:45	18	43	61
02:15-02:30	4	3	7	09:00-09:15	12	9	21	08:45-09:00	13	39	52	02:45-03:00	22	29	51
02:30-02:45	5	1	6	09:15-09:30	15	7	22	09:00-09:15	15	43	58	03:00-03:15	15	34	49
02:45-03:00	1	0	1	09:30-09:45	13	10	23	09:15-09:30	14	56	70	03:15-03:30	22	17	39
03:00-03:15	2	3	5	09:45-10:00	15	12	27	09:30-09:45	17	36	53	03:30-03:45	17	19	36
03:15-03:30	3	2	5	10:00-10:15	13	9	22	09:45-10:00	14	51	65	03:45-04:00	13	24	37
03:30-03:45	1	0	1	10:15-10:30	4	6	10	10:00-10:15	19	32	51	04:00-04:15	24	31	55
03:45-04:00	3	3	6	10:30-10:45	12	7	19	10:15-10:30	18	44	62	04:15-04:30	18	23	41
04:00-04:15	5	2	7	10:45-11:00	13	8	21	10:30-10:45	22	39	61	04:30-04:45	21	30	51
04:15-04:30	2	2	4	11:00-11:15	9	4	13	10:45-11:00	13	31	44	04:45-05:00	20	25	45
04:30-04:45	6	4	10	11:15-11:30	6	6	12	11:00-11:15	15	37	52	05:00-05:15	19	29	48
04:45-05:00	4	4	8	11:30-11:45	4	2	6	11:15-11:30	19	34	53	05:15-05:30	23	30	53
05:00-05:15	3	2	5	11:45-12:00	2	1	3	11:30-11:45	18	18	36	05:30-05:45	25	30	55

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/02/2016															
12:00-12:15	2	3	5	06:30-06:45	15	28	43	06:15-06:30	3	26	29	12:15-12:30	22	30	52
12:15-12:30	3	6	9	06:45-07:00	18	20	38	06:30-06:45	10	32	42	12:30-12:45	15	20	35
12:30-12:45	7	4	11	07:00-07:15	17	23	40	06:45-07:00	7	34	41	12:45-01:00	10	26	36
12:45-01:00	1	1	2	07:15-07:30	11	17	28	07:00-07:15	3	38	41	01:00-01:15	15	32	47
01:00-01:15	3	4	7	07:30-07:45	12	19	31	07:15-07:30	12	63	75	01:15-01:30	15	28	43
01:15-01:30	2	2	4	07:45-08:00	11	10	21	07:30-07:45	7	90	97	01:30-01:45	13	37	50
01:30-01:45	2	2	4	08:00-08:15	11	13	24	07:45-08:00	25	52	77	01:45-02:00	14	43	57
01:45-02:00	0	0	0	08:15-08:30	16	10	26	08:00-08:15	20	43	63	02:00-02:15	8	42	50
02:00-02:15	0	1	1	08:30-08:45	15	15	30	08:15-08:30	11	47	58	02:15-02:30	18	25	43
02:15-02:30	0	1	1	08:45-09:00	9	6	15	08:30-08:45	13	55	68	02:30-02:45	18	33	51
02:30-02:45	0	2	2	09:00-09:15	13	11	24	08:45-09:00	15	28	43	02:45-03:00	13	31	44
02:45-03:00	2	0	2	09:15-09:30	12	12	24	09:00-09:15	10	43	53	03:00-03:15	13	31	44
03:00-03:15	2	3	5	09:30-09:45	11	12	23	09:15-09:30	18	49	67	03:15-03:30	8	36	44
03:15-03:30	1	0	1	09:45-10:00	10	8	18	09:30-09:45	12	39	51	03:30-03:45	14	43	57
03:30-03:45	1	2	3	10:00-10:15	3	4	7	09:45-10:00	5	36	41	03:45-04:00	17	21	38
03:45-04:00	0	1	1	10:15-10:30	6	6	12	10:00-10:15	12	36	48	04:00-04:15	8	44	52
04:00-04:15	4	0	4	10:30-10:45	12	8	20	10:15-10:30	13	35	48	04:15-04:30	17	20	37
04:15-04:30	1	1	2	10:45-11:00	8	13	21	10:30-10:45	13	28	41	04:30-04:45	14	42	56
04:30-04:45	2	3	5	11:00-11:15	4	4	8	10:45-11:00	11	35	46	04:45-05:00	20	36	56
04:45-05:00	4	10	14	11:15-11:30	8	4	12	11:00-11:15	4	32	36	05:00-05:15	14	35	49
05:00-05:15	11	3	14	11:30-11:45	4	4	8	11:15-11:30	5	29	34	05:15-05:30	25	39	64
05:15-05:30	4	12	16	11:45-12:00	1	4	5	11:30-11:45	9	30	39	05:30-05:45	25	26	51

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/05/2016															
05:00-05:15	5	8	13	12:00-12:15	1	0	1	11:45-12:00	33	51	84	05:45-06:00	39	40	79
05:15-05:30	8	12	20	12:15-12:30	1	2	3	12:00-12:15	32	28	60	06:00-06:15	34	39	73
05:30-05:45	7	5	12	12:30-12:45	4	0	4	12:15-12:30	21	32	53	06:15-06:30	36	35	71
05:45-06:00	9	7	16	12:45-01:00	0	0	0	12:30-12:45	32	26	58	06:30-06:45	37	17	54
12:00-12:15	3	7	10	07:15-07:30	42	7	49	07:00-07:15	4	36	40	01:00-01:15	34	27	61
12:15-12:30	2	2	4	07:30-07:45	35	14	49	07:15-07:30	21	58	79	01:15-01:30	30	28	58
12:30-12:45	4	2	6	07:45-08:00	22	13	35	07:30-07:45	24	86	110	01:30-01:45	19	24	43
12:45-01:00	2	1	3	08:00-08:15	23	11	34	07:45-08:00	37	49	86	01:45-02:00	27	32	59
01:00-01:15	2	1	3	08:15-08:30	28	7	35	08:00-08:15	41	50	91	02:00-02:15	26	30	56
01:15-01:30	1	1	2	08:30-08:45	22	10	32	08:15-08:30	32	33	65	02:15-02:30	29	25	54
01:30-01:45	1	3	4	08:45-09:00	21	8	29	08:30-08:45	27	39	66	02:30-02:45	31	28	59
01:45-02:00	2	1	3	09:00-09:15	28	9	37	08:45-09:00	33	41	74	02:45-03:00	27	27	54
02:00-02:15	1	1	2	09:15-09:30	15	6	21	09:00-09:15	27	53	80	03:00-03:15	22	24	46
02:15-02:30	1	0	1	09:30-09:45	14	6	20	09:15-09:30	22	41	63	03:15-03:30	26	31	57
02:30-02:45	2	0	2	09:45-10:00	17	4	21	09:30-09:45	19	29	48	03:30-03:45	23	38	61
02:45-03:00	3	2	5	10:00-10:15	16	2	18	09:45-10:00	17	45	62	03:45-04:00	1	20	21
03:00-03:15	2	1	3	10:15-10:30	15	1	16	10:00-10:15	16	26	42	04:00-04:15	6	35	41
03:15-03:30	2	0	2	10:30-10:45	11	2	13	10:15-10:30	20	26	46	04:15-04:30	6	31	37
03:30-03:45	3	1	4	10:45-11:00	5	4	9	10:30-10:45	17	18	35	04:30-04:45	14	24	38
03:45-04:00	1	1	2	11:00-11:15	6	1	7	10:45-11:00	20	32	52	04:45-05:00	30	32	62
04:00-04:15	1	2	3	11:15-11:30	4	2	6	11:00-11:15	32	26	58	05:00-05:15	37	36	73
04:15-04:30	2	1	3	11:30-11:45	8	1	9	11:15-11:30	20	34	54	05:15-05:30	38	36	74
04:30-04:45	5	4	9	11:45-12:00	5	2	7	11:30-11:45	35	26	61	05:30-05:45	57	33	90

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/04/2016															
05:15-05:30	7	8	15	12:00-12:15	5	2	7	11:45-12:00	15	25	40	05:45-06:00	20	23	43
05:30-05:45	5	15	20	12:15-12:30	6	2	8	12:00-12:15	18	34	52	06:00-06:15	32	28	60
05:45-06:00	6	11	17	12:30-12:45	5	3	8	12:15-12:30	15	33	48	06:15-06:30	28	23	51
12:00-12:15	8	11	19	07:00-07:15	30	23	53	06:45-07:00	6	22	28	12:45-01:00	34	32	66
12:15-12:30	3	9	12	07:15-07:30	27	11	38	07:00-07:15	12	25	37	01:00-01:15	24	24	48
12:30-12:45	8	5	13	07:30-07:45	17	16	33	07:15-07:30	14	22	36	01:15-01:30	23	21	44
12:45-01:00	8	13	21	07:45-08:00	25	19	44	07:30-07:45	9	20	29	01:30-01:45	35	26	61
01:00-01:15	5	0	5	08:00-08:15	21	17	38	07:45-08:00	9	29	38	01:45-02:00	26	35	61
01:15-01:30	5	6	11	08:15-08:30	15	9	24	08:00-08:15	9	39	48	02:00-02:15	26	28	54
01:30-01:45	3	3	6	08:30-08:45	17	11	28	08:15-08:30	18	23	41	02:15-02:30	27	38	65
01:45-02:00	7	1	8	08:45-09:00	13	9	22	08:30-08:45	21	32	53	02:30-02:45	26	36	62
02:00-02:15	3	2	5	09:00-09:15	13	12	25	08:45-09:00	23	30	53	02:45-03:00	24	31	55
02:15-02:30	5	1	6	09:15-09:30	16	8	24	09:00-09:15	13	32	45	03:00-03:15	19	20	39
02:30-02:45	4	2	6	09:30-09:45	16	8	24	09:15-09:30	22	32	54	03:15-03:30	26	32	58
02:45-03:00	6	4	10	09:45-10:00	8	3	11	09:30-09:45	22	34	56	03:30-03:45	17	23	40
03:00-03:15	2	4	6	10:00-10:15	11	4	15	09:45-10:00	19	36	55	03:45-04:00	13	26	39
03:15-03:30	1	0	1	10:15-10:30	9	0	9	10:00-10:15	26	37	63	04:00-04:15	32	34	66
03:30-03:45	5	4	9	10:30-10:45	6	4	10	10:15-10:30	26	33	59	04:15-04:30	25	33	58
03:45-04:00	3	0	3	10:45-11:00	8	1	9	10:30-10:45	27	33	60	04:30-04:45	22	30	52
04:00-04:15	1	3	4	11:00-11:15	8	3	11	10:45-11:00	24	34	58	04:45-05:00	35	33	68
04:15-04:30	3	2	5	11:15-11:30	5	0	5	11:00-11:15	16	22	38	05:00-05:15	34	28	62
04:30-04:45	2	4	6	11:30-11:45	1	2	3	11:15-11:30	23	28	51	05:15-05:30	31	33	64
04:45-05:00	3	8	11	11:45-12:00	5	0	5	11:30-11:45	29	23	52	05:30-05:45	41	38	79

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/07/2016															
04:30-04:45	1	3	4	12:00-12:15	2	1	3	11:45-12:00	32	24	56	05:45-06:00	35	26	61
04:45-05:00	6	4	10	12:15-12:30	3	3	6	12:00-12:15	28	36	64	06:00-06:15	59	26	85
05:00-05:15	12	6	18	12:30-12:45	2	2	4	12:15-12:30	20	27	47	06:15-06:30	62	28	90
05:15-05:30	10	7	17	12:45-01:00	4	0	4	12:30-12:45	31	45	76	06:30-06:45	79	24	103
05:30-05:45	9	10	19	01:00-01:15	1	0	1	12:45-01:00	27	22	49	06:45-07:00	65	20	85
05:45-06:00	12	18	30	01:15-01:30	2	2	4	01:00-01:15	29	21	50	07:00-07:15	55	19	74
12:00-12:15	3	5	8	07:45-08:00	25	11	36	07:30-07:45	25	96	121	01:30-01:45	33	22	55
12:15-12:30	7	5	12	08:00-08:15	41	12	53	07:45-08:00	37	53	90	01:45-02:00	39	32	71
12:30-12:45	4	5	9	08:15-08:30	23	9	32	08:00-08:15	50	27	77	02:00-02:15	24	28	52
12:45-01:00	5	1	6	08:30-08:45	50	7	57	08:15-08:30	29	40	69	02:15-02:30	35	24	59
01:00-01:15	2	2	4	08:45-09:00	21	5	26	08:30-08:45	18	38	56	02:30-02:45	35	27	62
01:15-01:30	1	1	2	09:00-09:15	27	10	37	08:45-09:00	44	42	86	02:45-03:00	33	22	55
01:30-01:45	2	1	3	09:15-09:30	23	9	32	09:00-09:15	37	38	75	03:00-03:15	30	28	58
01:45-02:00	1	3	4	09:30-09:45	26	8	34	09:15-09:30	27	45	72	03:15-03:30	32	33	65
02:00-02:15	3	0	3	09:45-10:00	15	3	18	09:30-09:45	25	47	72	03:30-03:45	45	35	80
02:15-02:30	10	2	12	10:00-10:15	20	5	25	09:45-10:00	27	35	62	03:45-04:00	73	26	99
02:30-02:45	1	0	1	10:15-10:30	12	7	19	10:00-10:15	21	34	55	04:00-04:15	39	39	78
02:45-03:00	4	3	7	10:30-10:45	12	4	16	10:15-10:30	27	38	65	04:15-04:30	39	23	62
03:00-03:15	2	0	2	10:45-11:00	18	6	24	10:30-10:45	22	35	57	04:30-04:45	48	41	89
03:15-03:30	1	0	1	11:00-11:15	11	1	12	10:45-11:00	36	29	65	04:45-05:00	52	39	91
03:30-03:45	0	0	0	11:15-11:30	4	1	5	11:00-11:15	24	32	56	05:00-05:15	45	37	82
03:45-04:00	0	6	6	11:30-11:45	6	0	6	11:15-11:30	25	31	56	05:15-05:30	37	33	70
04:00-04:15	1	1	2	11:45-12:00	5	2	7	11:30-11:45	41	36	77	05:30-05:45	44	29	73

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)			PM PERIOD (12:00-24:00)		
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/06/2016															
04:45-05:00	3	2	5	12:00-12:15	1	1	2	11:45-12:00	21	31	52	05:45-06:00	37	21	58
05:00-05:15	4	3	7	12:15-12:30	1	2	3	12:00-12:15	18	24	42	06:00-06:15	52	25	77
05:15-05:30	7	7	14	12:30-12:45	0	4	4	12:15-12:30	21	30	51	06:15-06:30	49	26	75
05:30-05:45	14	10	24	12:45-01:00	2	0	2	12:30-12:45	29	30	59	06:30-06:45	43	14	57
05:45-06:00	13	10	23	01:00-01:15	1	2	3	12:45-01:00	26	32	58	06:45-07:00	74	12	86
12:00-12:15	1	2	3	07:30-07:45	27	15	42	07:15-07:30	21	62	83	01:15-01:30	42	31	73
12:15-12:30	0	3	3	07:45-08:00	37	11	48	07:30-07:45	24	93	117	01:30-01:45	17	30	47
12:30-12:45	5	7	12	08:00-08:15	27	10	37	07:45-08:00	59	50	109	01:45-02:00	20	33	53
12:45-01:00	0	1	1	08:15-08:30	28	16	44	08:00-08:15	42	39	81	02:00-02:15	31	42	73
01:00-01:15	1	2	3	08:30-08:45	29	8	37	08:15-08:30	21	41	62	02:15-02:30	57	23	80
01:15-01:30	3	1	4	08:45-09:00	15	8	23	08:30-08:45	30	39	69	02:30-02:45	54	34	88
01:30-01:45	3	0	3	09:00-09:15	24	4	28	08:45-09:00	30	43	73	02:45-03:00	48	24	72
01:45-02:00	3	3	6	09:15-09:30	15	7	22	09:00-09:15	27	41	68	03:00-03:15	38	28	66
02:00-02:15	1	2	3	09:30-09:45	26	12	38	09:15-09:30	29	45	74	03:15-03:30	38	34	72
02:15-02:30	1	1	2	09:45-10:00	10	2	12	09:30-09:45	31	39	70	03:30-03:45	39	36	75
02:30-02:45	0	1	1	10:00-10:15	13	2	15	09:45-10:00	22	43	65	03:45-04:00	40	28	68
02:45-03:00	2	1	3	10:15-10:30	21	4	25	10:00-10:15	23	27	50	04:00-04:15	50	28	78
03:00-03:15	2	3	5	10:30-10:45	12	7	19	10:15-10:30	24	39	63	04:15-04:30	40	37	77
03:15-03:30	2	1	3	10:45-11:00	9	1	10	10:30-10:45	19	26	45	04:30-04:45	34	35	69
03:30-03:45	2	0	2	11:00-11:15	3	1	4	10:45-11:00	16	31	47	04:45-05:00	47	31	78
03:45-04:00	1	0	1	11:15-11:30	2	2	4	11:00-11:15	28	26	54	05:00-05:15	57	25	82
04:00-04:15	1	0	1	11:30-11:45	15	0	15	11:15-11:30	33	22	55	05:15-05:30	52	28	80
04:15-04:30	2	1	3	11:45-12:00	12	4	16	11:30-11:45	30	30	60	05:30-05:45	48	35	83

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)			PM PERIOD (12:00-24:00)		
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/09/2016															
04:00-04:15	2	0	2	12:00-12:15	6	1	7	11:45-12:00	29	40	69	05:45-06:00	54	32	86
04:15-04:30	1	2	3	12:15-12:30	5	4	9	12:00-12:15	28	27	55	06:00-06:15	62	30	92
04:30-04:45	2	0	2	12:30-12:45	2	0	2	12:15-12:30	31	36	67	06:15-06:30	45	22	67
04:45-05:00	2	2	4	12:45-01:00	4	0	4	12:30-12:45	32	26	58	06:30-06:45	74	32	106
05:00-05:15	3	7	10	01:00-01:15	4	0	4	12:45-01:00	42	29	71	06:45-07:00	42	19	61
05:15-05:30	10	5	15	01:15-01:30	5	0	5	01:00-01:15	39	21	60	07:00-07:15	43	18	61
05:30-05:45	10	4	14	01:30-01:45	1	0	1	01:15-01:30	27	14	41	07:15-07:30	66	12	78
05:45-06:00	20	4	24	01:45-02:00	4	1	5	01:30-01:45	25	20	45	07:30-07:45	34	11	45
12:00-12:15	5	1	6	08:15-08:30	35	24	59	08:00-08:15	52	32	84	02:00-02:15	39	28	67
12:15-12:30	4	4	8	08:30-08:45	17	12	29	08:15-08:30	31	45	76	02:15-02:30	60	27	87
12:30-12:45	3	5	8	08:45-09:00	34	11	45	08:30-08:45	37	49	86	02:30-02:45	57	30	87
12:45-01:00	2	2	4	09:00-09:15	31	16	47	08:45-09:00	39	34	73	02:45-03:00	54	36	90
01:00-01:15	3	2	5	09:15-09:30	30	10	40	09:00-09:15	37	52	89	03:00-03:15	40	23	63
01:15-01:30	3	1	4	09:30-09:45	33	15	48	09:15-09:30	27	48	75	03:15-03:30	47	34	81
01:30-01:45	5	4	9	09:45-10:00	26	6	32	09:30-09:45	32	46	78	03:30-03:45	37	31	68
01:45-02:00	2	4	6	10:00-10:15	25	8	33	09:45-10:00	25	34	59	03:45-04:00	53	32	85
02:00-02:15	1	3	4	10:15-10:30	23	4	27	10:00-10:15	25	36	61	04:00-04:15	38	26	64
02:15-02:30	2	2	4	10:30-10:45	18	7	25	10:15-10:30	30	31	61	04:15-04:30	59	39	98
02:30-02:45	1	0	1	10:45-11:00	16	6	22	10:30-10:45	24	32	56	04:30-04:45	56	36	92
02:45-03:00	3	2	5	11:00-11:15	21	6	27	10:45-11:00	34	37	71	04:45-05:00	42	37	79
03:00-03:15	2	1	3	11:15-11:30	14	4	18	11:00-11:15	22	43	65	05:00-05:15	58	34	92
03:15-03:30	2	2	4	11:30-11:45	13	3	16	11:15-11:30	22	39	61	05:15-05:30	54	28	82
03:30-03:45	1	1	2	11:45-12:00	8	2	10	11:30-11:45	19	37	56	05:30-05:45	66	27	93

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/08/2016															
04:15-04:30	1	1	2	12:00-12:15	1	2	3	11:45-12:00	29	30	59	05:45-06:00	49	32	81
04:30-04:45	2	2	4	12:15-12:30	10	1	11	12:00-12:15	37	28	65	06:00-06:15	45	30	75
04:45-05:00	4	4	8	12:30-12:45	2	1	3	12:15-12:30	35	39	74	06:15-06:30	58	22	80
05:00-05:15	11	8	19	12:45-01:00	6	2	8	12:30-12:45	36	49	85	06:30-06:45	73	24	97
05:15-05:30	7	8	15	01:00-01:15	4	0	4	12:45-01:00	47	33	80	06:45-07:00	65	20	85
05:30-05:45	13	11	24	01:15-01:30	4	1	5	01:00-01:15	49	37	86	07:00-07:15	47	25	72
05:45-06:00	11	12	23	01:30-01:45	5	1	6	01:15-01:30	40	30	70	07:15-07:30	40	20	60
12:00-12:15	1	4	5	08:00-08:15	39	9	48	07:45-08:00	54	46	100	01:45-02:00	37	40	77
12:15-12:30	2	2	4	08:15-08:30	26	7	33	08:00-08:15	38	39	77	02:00-02:15	29	39	68
12:30-12:45	2	1	3	08:30-08:45	38	7	45	08:15-08:30	33	32	65	02:15-02:30	70	28	98
12:45-01:00	5	1	6	08:45-09:00	21	7	28	08:30-08:45	31	40	71	02:30-02:45	35	39	74
01:00-01:15	4	0	4	09:00-09:15	33	13	46	08:45-09:00	21	33	54	02:45-03:00	30	37	67
01:15-01:30	2	3	5	09:15-09:30	30	4	34	09:00-09:15	29	48	77	03:00-03:15	48	21	69
01:30-01:45	3	0	3	09:30-09:45	22	3	25	09:15-09:30	28	36	64	03:15-03:30	48	39	87
01:45-02:00	2	1	3	09:45-10:00	22	5	27	09:30-09:45	28	38	66	03:30-03:45	47	30	77
02:00-02:15	3	1	4	10:00-10:15	20	6	26	09:45-10:00	16	34	50	03:45-04:00	48	38	86
02:15-02:30	1	1	2	10:15-10:30	14	3	17	10:00-10:15	15	28	43	04:00-04:15	60	31	91
02:30-02:45	1	1	2	10:30-10:45	11	3	14	10:15-10:30	33	33	66	04:15-04:30	44	45	89
02:45-03:00	2	1	3	10:45-11:00	14	4	18	10:30-10:45	25	27	52	04:30-04:45	34	45	79
03:00-03:15	1	0	1	11:00-11:15	11	5	16	10:45-11:00	31	28	59	04:45-05:00	51	34	85
03:15-03:30	3	0	3	11:15-11:30	2	2	4	11:00-11:15	31	35	66	05:00-05:15	55	35	90
03:30-03:45	1	1	2	11:30-11:45	6	3	9	11:15-11:30	27	32	59	05:15-05:30	53	28	81
03:45-04:00	0	0	0	11:45-12:00	4	1	5	11:30-11:45	23	35	58	05:30-05:45	50	37	87

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/11/2016															
03:30-03:45	2	3	5	12:00-12:15	7	1	8	11:45-12:00	40	45	85	05:45-06:00	39	25	64
03:45-04:00	4	1	5	12:15-12:30	15	0	15	12:00-12:15	34	33	67	06:00-06:15	40	29	69
04:00-04:15	0	2	2	12:30-12:45	3	1	4	12:15-12:30	27	31	58	06:15-06:30	40	26	66
04:15-04:30	2	0	2	12:45-01:00	6	1	7	12:30-12:45	29	26	55	06:30-06:45	41	20	61
04:30-04:45	1	2	3	01:00-01:15	2	0	2	12:45-01:00	42	25	67	06:45-07:00	43	19	62
04:45-05:00	6	3	9	01:15-01:30	4	1	5	01:00-01:15	49	41	90	07:00-07:15	41	16	57
05:00-05:15	5	1	6	01:30-01:45	1	3	4	01:15-01:30	27	25	52	07:15-07:30	30	13	43
05:15-05:30	1	4	5	01:45-02:00	5	0	5	01:30-01:45	26	38	64	07:30-07:45	18	18	36
05:30-05:45	8	7	15	02:00-02:15	5	0	5	01:45-02:00	27	26	53	07:45-08:00	36	16	52
05:45-06:00	8	11	19	02:15-02:30	2	1	3	02:00-02:15	23	30	53	08:00-08:15	29	10	39
12:00-12:15	5	1	6	08:45-09:00	22	6	28	08:30-08:45	24	39	63	02:30-02:45	29	20	49
12:15-12:30	12	2	14	09:00-09:15	20	8	28	08:45-09:00	40	38	78	02:45-03:00	29	29	58
12:30-12:45	5	0	5	09:15-09:30	22	5	27	09:00-09:15	20	41	61	03:00-03:15	39	32	71
12:45-01:00	5	2	7	09:30-09:45	18	4	22	09:15-09:30	20	38	58	03:15-03:30	37	26	63
01:00-01:15	10	1	11	09:45-10:00	11	5	16	09:30-09:45	19	46	65	03:30-03:45	30	27	57
01:15-01:30	6	2	8	10:00-10:15	7	7	14	09:45-10:00	40	37	77	03:45-04:00	33	29	62
01:30-01:45	6	0	6	10:15-10:30	12	4	16	10:00-10:15	40	39	79	04:00-04:15	23	24	47
01:45-02:00	2	2	4	10:30-10:45	12	3	15	10:15-10:30	33	31	64	04:15-04:30	41	25	66
02:00-02:15	7	1	8	10:45-11:00	6	0	6	10:30-10:45	33	33	66	04:30-04:45	42	25	67
02:15-02:30	2	1	3	11:00-11:15	8	3	11	10:45-11:00	35	35	70	04:45-05:00	42	34	76
02:30-02:45	5	2	7	11:15-11:30	7	2	9	11:00-11:15	37	35	72	05:00-05:15	40	33	73
02:45-03:00	5	5	10	11:30-11:45	6	2	8	11:15-11:30	47	31	78	05:15-05:30	27	35	62
03:00-03:15	1	1	2	11:45-12:00	2	0	2	11:30-11:45	17	39	56	05:30-05:45	49	34	83

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/10/2016															
03:45-04:00	0	0	0	12:00-12:15	5	0	5	11:45-12:00	37	23	60	05:45-06:00	61	35	96
04:00-04:15	3	2	5	12:15-12:30	6	6	12	12:00-12:15	46	44	90	06:00-06:15	50	27	77
04:15-04:30	1	2	3	12:30-12:45	16	2	18	12:15-12:30	49	33	82	06:15-06:30	43	28	71
04:30-04:45	3	4	7	12:45-01:00	14	2	16	12:30-12:45	30	27	57	06:30-06:45	54	32	86
04:45-05:00	5	5	10	01:00-01:15	1	2	3	12:45-01:00	48	30	78	06:45-07:00	73	25	98
05:00-05:15	9	7	16	01:15-01:30	5	3	8	01:00-01:15	46	36	82	07:00-07:15	35	16	51
05:15-05:30	5	16	21	01:30-01:45	1	3	4	01:15-01:30	29	31	60	07:15-07:30	48	18	66
05:30-05:45	9	13	22	01:45-02:00	1	2	3	01:30-01:45	25	43	68	07:30-07:45	36	26	62
05:45-06:00	14	20	34	02:00-02:15	7	0	7	01:45-02:00	41	46	87	07:45-08:00	39	16	55
12:00-12:15	8	14	22	08:30-08:45	25	12	37	08:15-08:30	20	37	57	02:15-02:30	33	26	59
12:15-12:30	13	4	17	08:45-09:00	19	12	31	08:30-08:45	13	41	54	02:30-02:45	38	34	72
12:30-12:45	5	5	10	09:00-09:15	29	14	43	08:45-09:00	18	43	61	02:45-03:00	26	33	59
12:45-01:00	8	9	17	09:15-09:30	24	5	29	09:00-09:15	28	32	60	03:00-03:15	33	18	51
01:00-01:15	4	5	9	09:30-09:45	24	3	27	09:15-09:30	22	57	79	03:15-03:30	45	29	74
01:15-01:30	4	3	7	09:45-10:00	19	8	27	09:30-09:45	33	37	70	03:30-03:45	35	19	54
01:30-01:45	2	2	4	10:00-10:15	12	4	16	09:45-10:00	32	44	76	03:45-04:00	31	27	58
01:45-02:00	2	3	5	10:15-10:30	16	5	21	10:00-10:15	26	26	52	04:00-04:15	41	27	68
02:00-02:15	5	2	7	10:30-10:45	16	11	27	10:15-10:30	31	42	73	04:15-04:30	35	29	64
02:15-02:30	8	2	10	10:45-11:00	25	7	32	10:30-10:45	36	36	72	04:30-04:45	35	29	64
02:30-02:45	3	1	4	11:00-11:15	9	0	9	10:45-11:00	32	38	70	04:45-05:00	39	23	62
02:45-03:00	2	3	5	11:15-11:30	6	2	8	11:00-11:15	34	38	72	05:00-05:15	35	25	60
03:00-03:15	4	0	4	11:30-11:45	7	5	12	11:15-11:30	43	38	81	05:15-05:30	50	23	73
03:15-03:30	1	0	1	11:45-12:00	11	5	16	11:30-11:45	35	26	61	05:30-05:45	50	34	84

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/13/2016															
03:00-03:15	2	0	2	12:00-12:15	5	3	8	11:45-12:00	27	28	55	05:45-06:00	60	35	95
03:15-03:30	2	0	2	12:15-12:30	2	1	3	12:00-12:15	39	29	68	06:00-06:15	39	41	80
03:30-03:45	2	0	2	12:30-12:45	4	0	4	12:15-12:30	39	38	77	06:15-06:30	57	23	80
03:45-04:00	3	0	3	12:45-01:00	0	0	0	12:30-12:45	37	26	63	06:30-06:45	73	19	92
04:00-04:15	1	1	2	01:00-01:15	4	1	5	12:45-01:00	32	38	70	06:45-07:00	80	21	101
04:15-04:30	2	1	3	01:15-01:30	0	0	0	01:00-01:15	34	32	66	07:00-07:15	64	15	79
04:30-04:45	2	1	3	01:30-01:45	0	4	4	01:15-01:30	30	24	54	07:15-07:30	44	8	52
04:45-05:00	7	3	10	01:45-02:00	4	0	4	01:30-01:45	26	30	56	07:30-07:45	20	14	34
05:00-05:15	6	5	11	02:00-02:15	0	2	2	01:45-02:00	35	37	72	07:45-08:00	45	14	59
05:15-05:30	4	5	9	02:15-02:30	5	1	6	02:00-02:15	21	39	60	08:00-08:15	33	7	40
05:30-05:45	9	8	17	02:30-02:45	1	0	1	02:15-02:30	61	24	85	08:15-08:30	23	11	34
05:45-06:00	13	7	20	02:45-03:00	1	0	1	02:30-02:45	50	39	89	08:30-08:45	21	11	32
12:00-12:15	4	0	4	09:15-09:30	29	6	35	09:00-09:15	28	62	90	03:00-03:15	48	40	88
12:15-12:30	1	0	1	09:30-09:45	16	5	21	09:15-09:30	29	48	77	03:15-03:30	37	32	69
12:30-12:45	3	1	4	09:45-10:00	16	6	22	09:30-09:45	27	35	62	03:30-03:45	51	24	75
12:45-01:00	4	0	4	10:00-10:15	12	3	15	09:45-10:00	26	40	66	03:45-04:00	66	30	96
01:00-01:15	2	0	2	10:15-10:30	9	5	14	10:00-10:15	31	34	65	04:00-04:15	55	28	83
01:15-01:30	1	0	1	10:30-10:45	7	7	14	10:15-10:30	30	39	69	04:15-04:30	64	39	103
01:30-01:45	3	1	4	10:45-11:00	13	2	15	10:30-10:45	22	28	50	04:30-04:45	54	47	101
01:45-02:00	2	0	2	11:00-11:15	8	3	11	10:45-11:00	28	35	63	04:45-05:00	55	39	94
02:00-02:15	0	1	1	11:15-11:30	8	6	14	11:00-11:15	33	24	57	05:00-05:15	44	28	72
02:15-02:30	3	0	3	11:30-11:45	8	3	11	11:15-11:30	22	42	64	05:15-05:30	49	31	80
02:30-02:45	1	0	1	11:45-12:00	5	1	6	11:30-11:45	34	24	58	05:30-05:45	63	31	94

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/12/2016															
03:15-03:30	4	1	5	12:00-12:15	0	0	0	11:45-12:00	40	35	75	05:45-06:00	45	19	64
03:30-03:45	1	2	3	12:15-12:30	4	0	4	12:00-12:15	37	32	69	06:00-06:15	40	14	54
03:45-04:00	3	0	3	12:30-12:45	1	0	1	12:15-12:30	22	31	53	06:15-06:30	58	30	88
04:00-04:15	2	0	2	12:45-01:00	2	0	2	12:30-12:45	38	33	71	06:30-06:45	25	16	41
04:15-04:30	3	0	3	01:00-01:15	1	1	2	12:45-01:00	38	23	61	06:45-07:00	35	18	53
04:30-04:45	2	1	3	01:15-01:30	2	1	3	01:00-01:15	22	31	53	07:00-07:15	29	19	48
04:45-05:00	5	1	6	01:30-01:45	2	1	3	01:15-01:30	24	21	45	07:15-07:30	40	16	56
05:00-05:15	6	0	6	01:45-02:00	0	1	1	01:30-01:45	22	26	48	07:30-07:45	23	8	31
05:15-05:30	9	2	11	02:00-02:15	1	0	1	01:45-02:00	32	21	53	07:45-08:00	26	11	37
05:30-05:45	5	4	9	02:15-02:30	0	0	0	02:00-02:15	34	23	57	08:00-08:15	23	11	34
05:45-06:00	11	1	12	02:30-02:45	1	1	2	02:15-02:30	27	32	59	08:15-08:30	30	8	38
12:00-12:15	2	0	2	09:00-09:15	15	9	24	08:45-09:00	43	45	88	02:45-03:00	34	19	53
12:15-12:30	2	0	2	09:15-09:30	19	3	22	09:00-09:15	28	41	69	03:00-03:15	44	37	81
12:30-12:45	2	1	3	09:30-09:45	25	6	31	09:15-09:30	22	59	81	03:15-03:30	37	34	71
12:45-01:00	2	0	2	09:45-10:00	30	5	35	09:30-09:45	17	36	53	03:30-03:45	55	31	86
01:00-01:15	1	0	1	10:00-10:15	11	6	17	09:45-10:00	30	38	68	03:45-04:00	49	35	84
01:15-01:30	0	2	2	10:15-10:30	13	3	16	10:00-10:15	36	26	62	04:00-04:15	75	33	108
01:30-01:45	0	0	0	10:30-10:45	12	2	14	10:15-10:30	28	32	60	04:15-04:30	61	40	101
01:45-02:00	4	0	4	10:45-11:00	9	1	10	10:30-10:45	28	41	69	04:30-04:45	50	42	92
02:00-02:15	1	1	2	11:00-11:15	5	1	6	10:45-11:00	41	40	81	04:45-05:00	39	30	69
02:15-02:30	1	0	1	11:15-11:30	4	2	6	11:00-11:15	30	28	58	05:00-05:15	52	27	79
02:30-02:45	2	0	2	11:30-11:45	5	2	7	11:15-11:30	34	29	63	05:15-05:30	46	31	77
02:45-03:00	3	0	3	11:45-12:00	1	1	2	11:30-11:45	28	36	64	05:30-05:45	54	33	87

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/15/2016															
02:30-02:45	2	0	2	12:00-12:15	9	2	11	11:45-12:00	39	42	81	05:45-06:00	58	34	92
02:45-03:00	1	0	1	12:15-12:30	0	1	1	12:00-12:15	38	37	75	06:00-06:15	43	34	77
03:00-03:15	2	0	2	12:30-12:45	8	5	13	12:15-12:30	42	26	68	06:15-06:30	65	20	85
03:15-03:30	3	0	3	12:45-01:00	4	1	5	12:30-12:45	37	35	72	06:30-06:45	61	26	87
03:30-03:45	1	0	1	01:00-01:15	0	0	0	12:45-01:00	53	39	92	06:45-07:00	82	21	103
03:45-04:00	1	0	1	01:15-01:30	4	0	4	01:00-01:15	53	28	81	07:00-07:15	61	18	79
04:00-04:15	4	0	4	01:30-01:45	1	1	2	01:15-01:30	33	34	67	07:15-07:30	33	15	48
04:15-04:30	0	0	0	01:45-02:00	4	1	5	01:30-01:45	35	34	69	07:30-07:45	43	11	54
04:30-04:45	1	0	1	02:00-02:15	1	1	2	01:45-02:00	25	39	64	07:45-08:00	42	15	57
04:45-05:00	3	0	3	02:15-02:30	0	1	1	02:00-02:15	37	42	79	08:00-08:15	46	8	54
05:00-05:15	4	1	5	02:30-02:45	2	2	4	02:15-02:30	46	27	73	08:15-08:30	31	11	42
05:15-05:30	12	3	15	02:45-03:00	2	1	3	02:30-02:45	43	28	71	08:30-08:45	26	10	36
05:30-05:45	8	5	13	03:00-03:15	2	1	3	02:45-03:00	46	34	80	08:45-09:00	26	6	32
05:45-06:00	16	0	16	03:15-03:30	0	0	0	03:00-03:15	39	35	74	09:00-09:15	24	10	34
12:00-12:15	0	4	4	09:45-10:00	9	7	16	09:30-09:45	15	49	64	03:30-03:45	13	30	43
12:15-12:30	1	7	8	10:00-10:15	10	5	15	09:45-10:00	38	31	69	03:45-04:00	23	23	46
12:30-12:45	0	7	7	10:15-10:30	10	6	16	10:00-10:15	26	37	63	04:00-04:15	16	30	46
12:45-01:00	0	5	5	10:30-10:45	5	2	7	10:15-10:30	29	44	73	04:15-04:30	16	41	57
01:00-01:15	1	6	7	10:45-11:00	6	5	11	10:30-10:45	22	45	67	04:30-04:45	19	40	59
01:15-01:30	1	4	5	11:00-11:15	1	1	2	10:45-11:00	17	33	50	04:45-05:00	17	32	49
01:30-01:45	0	5	5	11:15-11:30	3	1	4	11:00-11:15	34	39	73	05:00-05:15	16	21	37
01:45-02:00	1	1	2	11:30-11:45	1	0	1	11:15-11:30	35	27	62	05:15-05:30	18	24	42
02:00-02:15	0	2	2	11:45-12:00	6	0	6	11:30-11:45	35	31	66	05:30-05:45	15	23	38
02:15-02:30	1	5	6	05:45-06:00	1	19	20	11:45-12:00	29	27	56	05:45-06:00	19	31	50
02:30-02:45	1	1	2	06:00-06:15	3	25	28	12:00-12:15	32	33	65	06:00-06:15	21	24	45
02:45-03:00	0	2	2	06:15-06:30	6	39	45	12:15-12:30	36	32	68	06:15-06:30	25	29	54
03:00-03:15	2	2	4	06:30-06:45	12	38	50	12:30-12:45	39	25	64	06:30-06:45	19	31	50
03:15-03:30	1	1	2	06:45-07:00	16	40	56	12:45-01:00	29	24	53	06:45-07:00	13	26	39
03:30-03:45	0	3	3	07:00-07:15	4	42	46	01:00-01:15	41	20	61	07:00-07:15	14	23	37
03:45-04:00	0	0	0	07:15-07:30	16	61	77	01:15-01:30	13	23	36	07:15-07:30	14	15	29
04:00-04:15	3	3	6	07:30-07:45	32	80	112	01:30-01:45	24	32	56	07:30-07:45	14	12	26
04:15-04:30	2	5	7	07:45-08:00	40	60	100	01:45-02:00	18	38	56	07:45-08:00	12	10	22
04:30-04:45	0	3	3	08:00-08:15	44	39	83	02:00-02:15	18	43	61	08:00-08:15	11	11	22
04:45-05:00	2	3	5	08:15-08:30	35	52	87	02:15-02:30	17	38	55	08:15-08:30	16	9	25
05:00-05:15	3	6	9	08:30-08:45	22	45	67	02:30-02:45	5	27	32	08:30-08:45	7	10	17
05:15-05:30	4	8	12	08:45-09:00	41	41	82	02:45-03:00	16	28	44	08:45-09:00	13	12	25
05:30-05:45	7	8	15	09:00-09:15	29	61	90	03:00-03:15	18	27	45	09:00-09:15	5	8	13

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/14/2016															
02:45-03:00	1	0	1	12:00-12:15	1	0	1	11:45-12:00	32	39	71	05:45-06:00	52	34	86
03:00-03:15	2	0	2	12:15-12:30	9	6	15	12:00-12:15	29	33	62	06:00-06:15	54	32	86
03:15-03:30	1	0	1	12:30-12:45	5	1	6	12:15-12:30	23	29	52	06:15-06:30	71	30	101
03:30-03:45	0	0	0	12:45-01:00	0	0	0	12:30-12:45	32	21	53	06:30-06:45	75	23	98
03:45-04:00	3	0	3	01:00-01:15	1	3	4	12:45-01:00	28	18	46	06:45-07:00	57	24	81
04:00-04:15	2	0	2	01:15-01:30	5	0	5	01:00-01:15	44	28	72	07:00-07:15	64	16	80
04:15-04:30	1	1	2	01:30-01:45	1	0	1	01:15-01:30	36	34	70	07:15-07:30	43	10	53
04:30-04:45	4	0	4	01:45-02:00	1	0	1	01:30-01:45	46	32	78	07:30-07:45	45	15	60
04:45-05:00	4	0	4	02:00-02:15	0	1	1	01:45-02:00	22	47	69	07:45-08:00	35	11	46
05:00-05:15	5	0	5	02:15-02:30	2	1	3	02:00-02:15	33	40	73	08:00-08:15	27	15	42
05:15-05:30	8	0	8	02:30-02:45	1	0	1	02:15-02:30	61	32	93	08:15-08:30	29	11	40
05:30-05:45	10	5	15	02:45-03:00	0	0	0	02:30-02:45	52	29	81	08:30-08:45	33	9	42
05:45-06:00	10	1	11	03:00-03:15	1	1	2	02:45-03:00	50	28	78	08:45-09:00	33	10	43
12:00-12:15	6	0	6	09:30-09:45	23	8	31	09:15-09:30	30	51	81	03:15-03:30	36	39	75
12:15-12:30	4	0	4	09:45-10:00	10	3	13	09:30-09:45	27	45	72	03:30-03:45	39	28	67
12:30-12:45	1	1	2	10:00-10:15	9	9	18	09:45-10:00	24	33	57	03:45-04:00	56	45	101
12:45-01:00	4	0	4	10:15-10:30	15	6	21	10:00-10:15	36	36	72	04:00-04:15	32	41	73
01:00-01:15	2	0	2	10:30-10:45	15	4	19	10:15-10:30	26	32	58	04:15-04:30	50	52	102
01:15-01:30	0	0	0	10:45-11:00	7	2	9	10:30-10:45	36	34	70	04:30-04:45	49	39	88
01:30-01:45	0	0	0	11:00-11:15	13	3	16	10:45-11:00	24	36	60	04:45-05:00	47	38	85
01:45-02:00	1	0	1	11:15-11:30	8	6	14	11:00-11:15	18	32	50	05:00-05:15	51	30	81
02:00-02:15	0	1	1	11:30-11:45	5	2	7	11:15-11:30	27	21	48	05:15-05:30	38	38	76
02:15-02:30	0	0	0	11:45-12:00	2	1	3	11:30-11:45	38	36	74	05:30-05:45	43	31	74

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2
TWO DIRECTIONAL PEAK			TWO DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		
AM - K FACTOR (%)			PM - K FACTOR (%)		-
AM - D (%)			PM - D (%)		
DIRECTIONAL PEAK			DIRECTIONAL PEAK		
AM - PEAK HR TIME			PM - PEAK HR TIME		
AM - PEAK HR VOLUME			PM - PEAK HR VOLUME		

AM PERIOD (00:00-12:00)	PM PERIOD (12:00-24:00)	
TWO DIRECTIONAL PEAK	TWO DIRECTIONAL PEAK	
AM - PEAK HR TIME	PM - PEAK HR TIME	
AM - PEAK HR VOLUME	PM - PEAK HR VOLUME	
AM - K FACTOR (%)	PM - K FACTOR (%)	-
AM - D (%)	PM - D (%)	

NON-COMMUTER PERIOD (09:00-15:00)	6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK	AM 6-HR PERIOD (06:00-12:00)			
PEAK HR TIME	AM 12-HR PERIOD (00:00-12:00)			
PEAK HR VOLUME	PM 6-HR PERIOD (12:00-18:00)			
DIRECTIONAL PEAK	PM 12-HR PERIOD (12:00-24:00)			
PEAK HR TIME	24 HOUR PERIOD			
PEAK HR VOLUME	D (%)			

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/02/2016															
12:00-12:15	2	1	3												
06:15-06:30	24	29	53												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:30 PM to 05:30 PM		
AM - PEAK HR VOLUME	64	248	312	PM - PEAK HR VOLUME	73	152	225
AM - K FACTOR (%)			10.16	PM - K FACTOR (%)			7.33
AM - D (%)	20.51	79.49	100.00	PM - D (%)	32.44	67.56	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM		PM - PEAK HR TIME	05:15 PM to 06:15 PM	04:30 PM to 05:30 PM	
AM - PEAK HR VOLUME	69	248		PM - PEAK HR VOLUME	98	152	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	04:30 PM to 05:30 PM		
AM - PEAK HR VOLUME	64	248	312	PM - PEAK HR VOLUME	73	152	225
AM - K FACTOR (%)			10.16	PM - K FACTOR (%)			7.33
AM - D (%)	20.51	79.49	100.00	PM - D (%)	32.44	67.56	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	256	955	1,211
PEAK HR TIME	09:00 AM to 10:00 AM			AM 12-HR PERIOD (00:00-12:00)	269	1,072	1,341
PEAK HR VOLUME	45	167	212	PM 6-HR PERIOD (12:00-18:00)	374	778	1,152
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	644	1,086	1,730
PEAK HR TIME	12:15 PM to 01:15 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	913	2,158	3,071
PEAK HR VOLUME	62	167		D (%)	29.73	70.27	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/15/2016															
05:45-06:00	12	20	32	09:15-09:30	30	41	71	03:15-03:30	10	25	35	09:15-09:30	15	5	20

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM			PM - PEAK HR TIME	03:15 PM to 04:15 PM		
AM - PEAK HR VOLUME	118	159	277	PM - PEAK HR VOLUME	374	382	756
AM - K FACTOR (%)			3.65	PM - K FACTOR (%)			9.95
AM - D (%)	42.60	57.40	100.00	PM - D (%)	49.47	50.53	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	03:15 PM to 04:15 PM	03:00 PM to 04:00 PM	
AM - PEAK HR VOLUME	120	159		PM - PEAK HR VOLUME	374	391	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM			PM - PEAK HR TIME	01:00 PM to 02:00 PM		
AM - PEAK HR VOLUME	294	262	556	PM - PEAK HR VOLUME	429	372	801
AM - K FACTOR (%)			7.32	PM - K FACTOR (%)			10.55
AM - D (%)	52.88	47.12	100.00	PM - D (%)	53.56	46.44	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	949	992	1,941
PEAK HR TIME	01:00 PM to 02:00 PM			AM 12-HR PERIOD (00:00-12:00)	991	1,103	2,094
PEAK HR VOLUME	429	372	801	PM 6-HR PERIOD (12:00-18:00)	2,082	2,073	4,155
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	2,819	2,683	5,502
PEAK HR TIME	01:00 PM to 02:00 PM	01:00 PM to 02:00 PM		24 HOUR PERIOD	3,810	3,786	7,596
PEAK HR VOLUME	429	372		D (%)	50.16	49.84	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/04/2016															
06:45-07:00	20	32	52												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM			PM - PEAK HR TIME	05:30 PM to 06:30 PM		
AM - PEAK HR VOLUME	71	124	195	PM - PEAK HR VOLUME	150	152	302
AM - K FACTOR (%)			5.98	PM - K FACTOR (%)			9.26
AM - D (%)	36.41	63.59	100.00	PM - D (%)	49.67	50.33	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	05:30 PM to 06:30 PM	05:30 PM to 06:30 PM	
AM - PEAK HR VOLUME	71	124		PM - PEAK HR VOLUME	150	152	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	10:00 AM to 11:00 AM			PM - PEAK HR TIME	05:30 PM to 06:30 PM		
AM - PEAK HR VOLUME	103	137	240	PM - PEAK HR VOLUME	150	152	302
AM - K FACTOR (%)			7.36	PM - K FACTOR (%)			9.26
AM - D (%)	42.92	57.08	100.00	PM - D (%)	49.67	50.33	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	405	672	1,077
PEAK HR TIME	11:45 AM to 12:45 PM			AM 12-HR PERIOD (00:00-12:00)	447	744	1,191
PEAK HR VOLUME	118	137	255	PM 6-HR PERIOD (12:00-18:00)	664	727	1,391
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,062	1,010	2,072
PEAK HR TIME	12:00 PM to 01:00 PM	09:30 AM to 10:30 AM		24 HOUR PERIOD	1,509	1,754	3,263
PEAK HR VOLUME	119	140		D (%)	46.25	53.75	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/03/2016															
06:30-06:45	32	35	67												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM			PM - PEAK HR TIME	05:45 PM to 06:45 PM		
AM - PEAK HR VOLUME	59	184	243	PM - PEAK HR VOLUME	112	109	221
AM - K FACTOR (%)			7.65	PM - K FACTOR (%)			6.95
AM - D (%)	24.28	75.72	100.00	PM - D (%)	50.68	49.32	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:45 AM to 08:45 AM		PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:30 PM to 05:30 PM	
AM - PEAK HR VOLUME	61	184		PM - PEAK HR VOLUME	114	114	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:00 AM to 10:00 AM			PM - PEAK HR TIME	06:30 PM to 07:30 PM		
AM - PEAK HR VOLUME	60	186	246	PM - PEAK HR VOLUME	102	120	222
AM - K FACTOR (%)			7.74	PM - K FACTOR (%)			6.99
AM - D (%)	24.39	75.61	100.00	PM - D (%)	45.95	54.05	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	325	854	1,179
PEAK HR TIME	09:00 AM to 10:00 AM			AM 12-HR PERIOD (00:00-12:00)	355	926	1,281
PEAK HR VOLUME	60	186	246	PM 6-HR PERIOD (12:00-18:00)	465	707	1,172
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	853	1,044	1,897
PEAK HR TIME	12:30 PM to 01:30 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,208	1,970	3,178
PEAK HR VOLUME	83	186		D (%)	38.01	61.99	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/06/2016															
07:15-07:30	45	12	57												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	06:00 PM to 07:00 PM		
AM - PEAK HR VOLUME	146	244	390	PM - PEAK HR VOLUME	265	98	363
AM - K FACTOR (%)			9.20	PM - K FACTOR (%)			8.56
AM - D (%)	37.44	62.56	100.00	PM - D (%)	73.00	27.00	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:00 PM to 05:00 PM	
AM - PEAK HR VOLUME	152	253		PM - PEAK HR VOLUME	265	131	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	06:00 PM to 07:00 PM		
AM - PEAK HR VOLUME	146	244	390	PM - PEAK HR VOLUME	265	98	363
AM - K FACTOR (%)			9.20	PM - K FACTOR (%)			8.56
AM - D (%)	37.44	62.56	100.00	PM - D (%)	73.00	27.00	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	574	934	1,508
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	593	1,054	1,647
PEAK HR VOLUME	190	123	313	PM 6-HR PERIOD (12:00-18:00)	922	739	1,661
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,612	982	2,594
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	2,205	2,036	4,241
PEAK HR VOLUME	190	168		D (%)	51.99	48.01	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/05/2016															
07:00-07:15	47	23	70												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	05:30 PM to 06:30 PM		
AM - PEAK HR VOLUME	123	243	366	PM - PEAK HR VOLUME	195	105	300
AM - K FACTOR (%)			10.03	PM - K FACTOR (%)			8.22
AM - D (%)	33.61	66.39	100.00	PM - D (%)	65.00	35.00	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:15 AM to 08:15 AM		PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:45 PM to 05:45 PM	
AM - PEAK HR VOLUME	137	243		PM - PEAK HR VOLUME	218	137	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	05:30 PM to 06:30 PM		
AM - PEAK HR VOLUME	123	243	366	PM - PEAK HR VOLUME	195	105	300
AM - K FACTOR (%)			10.03	PM - K FACTOR (%)			8.22
AM - D (%)	33.61	66.39	100.00	PM - D (%)	65.00	35.00	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	507	896	1,403
PEAK HR TIME	09:00 AM to 10:00 AM			AM 12-HR PERIOD (00:00-12:00)	522	1,003	1,525
PEAK HR VOLUME	85	168	253	PM 6-HR PERIOD (12:00-18:00)	614	698	1,312
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,216	908	2,124
PEAK HR TIME	12:30 PM to 01:30 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,738	1,911	3,649
PEAK HR VOLUME	119	168		D (%)	47.63	52.37	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/08/2016															
07:45-08:00	27	14	41												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	143	236	379
AM - K FACTOR (%)			8.61
AM - D (%)	37.73	62.27	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	156	243	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM		
PM - PEAK HR VOLUME	235	116	351
PM - K FACTOR (%)			7.98
PM - D (%)	66.95	33.05	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM	03:45 PM to 04:45 PM	
PM - PEAK HR VOLUME	235	159	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	143	236	379
AM - K FACTOR (%)			8.61
AM - D (%)	37.73	62.27	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	05:45 PM to 06:45 PM		
PM - PEAK HR VOLUME	235	116	351
PM - K FACTOR (%)			7.98
PM - D (%)	66.95	33.05	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM		
PEAK HR VOLUME	171	146	317
DIRECTIONAL PEAK			
PEAK HR TIME	01:45 PM to 02:45 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	171	156	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	580	930	1,510
AM 12-HR PERIOD (00:00-12:00)	622	1,044	1,666
PM 6-HR PERIOD (12:00-18:00)	1,017	771	1,788
PM 12-HR PERIOD (12:00-24:00)	1,723	1,011	2,734
24 HOUR PERIOD	2,345	2,055	4,400
D (%)	53.30	46.70	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/07/2016															
07:30-07:45	41	10	51												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	133	239	372
AM - K FACTOR (%)			8.46
AM - D (%)	35.75	64.25	100.00
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	141	258	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM		
PM - PEAK HR VOLUME	241	96	337
PM - K FACTOR (%)			7.66
PM - D (%)	71.51	28.49	100.00
DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:30 PM to 05:30 PM	
PM - PEAK HR VOLUME	241	150	

AM PERIOD (00:00-12:00)			
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	133	239	372
AM - K FACTOR (%)			8.46
AM - D (%)	35.75	64.25	100.00

PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	06:00 PM to 07:00 PM		
PM - PEAK HR VOLUME	241	96	337
PM - K FACTOR (%)			7.66
PM - D (%)	71.51	28.49	100.00

NON-COMMUTER PERIOD (09:00-15:00)			
TWO DIRECTIONAL PEAK			
PEAK HR TIME	12:15 PM to 01:15 PM		
PEAK HR VOLUME	167	158	325
DIRECTIONAL PEAK			
PEAK HR TIME	12:30 PM to 01:30 PM	09:00 AM to 10:00 AM	
PEAK HR VOLUME	172	165	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
AM 6-HR PERIOD (06:00-12:00)	598	950	1,548
AM 12-HR PERIOD (00:00-12:00)	634	1,062	1,696
PM 6-HR PERIOD (12:00-18:00)	976	766	1,742
PM 12-HR PERIOD (12:00-24:00)	1,684	1,017	2,701
24 HOUR PERIOD	2,318	2,079	4,397
D (%)	52.72	47.28	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/10/2016															
08:15-08:30	22	8	30												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	05:15 PM to 06:15 PM		
AM - PEAK HR VOLUME	93	138	231	PM - PEAK HR VOLUME	179	111	290
AM - K FACTOR (%)			5.98	PM - K FACTOR (%)			7.51
AM - D (%)	40.26	59.74	100.00	PM - D (%)	61.72	38.28	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	05:15 PM to 06:15 PM	05:30 PM to 06:30 PM	
AM - PEAK HR VOLUME	93	148		PM - PEAK HR VOLUME	179	114	
AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM			PM - PEAK HR TIME	05:15 PM to 06:15 PM		
AM - PEAK HR VOLUME	152	147	299	PM - PEAK HR VOLUME	179	111	290
AM - K FACTOR (%)			7.75	PM - K FACTOR (%)			7.51
AM - D (%)	50.84	49.16	100.00	PM - D (%)	61.72	38.28	100.00
NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	549	799	1,348
PEAK HR TIME	11:00 AM to 12:00 PM			AM 12-HR PERIOD (00:00-12:00)	625	860	1,485
PEAK HR VOLUME	152	147	299	PM 6-HR PERIOD (12:00-18:00)	849	676	1,525
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,431	944	2,375
PEAK HR TIME	11:00 AM to 12:00 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	2,056	1,804	3,860
PEAK HR VOLUME	152	170		D (%)	53.26	46.74	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/09/2016															
08:00-08:15	28	15	43												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	05:00 PM to 06:00 PM		
AM - PEAK HR VOLUME	142	234	376	PM - PEAK HR VOLUME	239	124	363
AM - K FACTOR (%)			7.85	PM - K FACTOR (%)			7.58
AM - D (%)	37.77	62.23	100.00	PM - D (%)	65.84	34.16	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 AM to 08:45 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	05:00 PM to 06:00 PM	04:15 PM to 05:15 PM	
AM - PEAK HR VOLUME	177	238		PM - PEAK HR VOLUME	239	146	
AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	05:00 PM to 06:00 PM		
AM - PEAK HR VOLUME	142	234	376	PM - PEAK HR VOLUME	239	124	363
AM - K FACTOR (%)			7.85	PM - K FACTOR (%)			7.58
AM - D (%)	37.77	62.23	100.00	PM - D (%)	65.84	34.16	100.00
NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	626	989	1,615
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	672	1,100	1,772
PEAK HR VOLUME	210	121	331	PM 6-HR PERIOD (12:00-18:00)	1,135	793	1,928
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,885	1,130	3,015
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	2,557	2,230	4,787
PEAK HR VOLUME	210	180		D (%)	53.42	46.58	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/12/2016															
08:45-09:00	21	9	30												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	03:45 PM to 04:45 PM		
AM - PEAK HR VOLUME	130	242	372	PM - PEAK HR VOLUME	235	150	385
AM - K FACTOR (%)			8.38	PM - K FACTOR (%)			8.68
AM - D (%)	34.95	65.05	100.00	PM - D (%)	61.04	38.96	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	06:00 PM to 07:00 PM	03:45 PM to 04:45 PM	
AM - PEAK HR VOLUME	148	254		PM - PEAK HR VOLUME	249	150	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	03:45 PM to 04:45 PM		
AM - PEAK HR VOLUME	130	242	372	PM - PEAK HR VOLUME	235	150	385
AM - K FACTOR (%)			8.38	PM - K FACTOR (%)			8.68
AM - D (%)	34.95	65.05	100.00	PM - D (%)	61.04	38.96	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	609	947	1,556
PEAK HR TIME	01:45 PM to 02:45 PM			AM 12-HR PERIOD (00:00-12:00)	638	1,054	1,692
PEAK HR VOLUME	167	139	306	PM 6-HR PERIOD (12:00-18:00)	1,060	783	1,843
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,729	1,017	2,746
PEAK HR TIME	01:45 PM to 02:45 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	2,367	2,071	4,438
PEAK HR VOLUME	167	174		D (%)	53.33	46.67	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/11/2016															
08:30-08:45	21	9	30												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM			PM - PEAK HR TIME	04:45 PM to 05:45 PM		
AM - PEAK HR VOLUME	93	149	242	PM - PEAK HR VOLUME	158	136	294
AM - K FACTOR (%)			6.75	PM - K FACTOR (%)			8.20
AM - D (%)	38.43	61.57	100.00	PM - D (%)	53.74	46.26	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:00 AM to 09:00 AM	08:00 AM to 09:00 AM		PM - PEAK HR TIME	05:30 PM to 06:30 PM	04:45 PM to 05:45 PM	
AM - PEAK HR VOLUME	93	149		PM - PEAK HR VOLUME	192	136	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:45 AM to 10:45 AM			PM - PEAK HR TIME	04:45 PM to 05:45 PM		
AM - PEAK HR VOLUME	146	140	286	PM - PEAK HR VOLUME	158	136	294
AM - K FACTOR (%)			7.98	PM - K FACTOR (%)			8.20
AM - D (%)	51.05	48.95	100.00	PM - D (%)	53.74	46.26	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	539	747	1,286
PEAK HR TIME	09:45 AM to 10:45 AM			AM 12-HR PERIOD (00:00-12:00)	609	796	1,405
PEAK HR VOLUME	146	140	286	PM 6-HR PERIOD (12:00-18:00)	802	665	1,467
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,305	874	2,179
PEAK HR TIME	10:30 AM to 11:30 AM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,914	1,670	3,584
PEAK HR VOLUME	152	162		D (%)	53.40	46.60	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/14/2016															
09:15-09:30	32	8	40												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	03:45 PM to 04:45 PM		
AM - PEAK HR VOLUME	142	245	387	PM - PEAK HR VOLUME	187	177	364
AM - K FACTOR (%)			8.33	PM - K FACTOR (%)			7.84
AM - D (%)	36.69	63.31	100.00	PM - D (%)	51.37	48.63	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	06:00 PM to 07:00 PM	03:45 PM to 04:45 PM	
AM - PEAK HR VOLUME	151	264		PM - PEAK HR VOLUME	251	177	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	03:45 PM to 04:45 PM		
AM - PEAK HR VOLUME	142	245	387	PM - PEAK HR VOLUME	187	177	364
AM - K FACTOR (%)			8.33	PM - K FACTOR (%)			7.84
AM - D (%)	36.69	63.31	100.00	PM - D (%)	51.37	48.63	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	627	1,009	1,636
PEAK HR TIME	12:15 PM to 01:15 PM			AM 12-HR PERIOD (00:00-12:00)	665	1,122	1,787
PEAK HR VOLUME	185	128	313	PM 6-HR PERIOD (12:00-18:00)	1,026	853	1,879
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,748	1,110	2,858
PEAK HR TIME	12:15 PM to 01:15 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	2,413	2,232	4,645
PEAK HR VOLUME	185	173		D (%)	51.95	48.05	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/13/2016															
09:00-09:15	29	9	38												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	03:45 PM to 04:45 PM		
AM - PEAK HR VOLUME	166	248	414	PM - PEAK HR VOLUME	239	144	383
AM - K FACTOR (%)			8.93	PM - K FACTOR (%)			8.26
AM - D (%)	40.10	59.90	100.00	PM - D (%)	62.40	37.60	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	06:45 AM to 07:45 AM		PM - PEAK HR TIME	06:00 PM to 07:00 PM	04:00 PM to 05:00 PM	
AM - PEAK HR VOLUME	168	259		PM - PEAK HR VOLUME	257	153	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM			PM - PEAK HR TIME	03:45 PM to 04:45 PM		
AM - PEAK HR VOLUME	166	248	414	PM - PEAK HR VOLUME	239	144	383
AM - K FACTOR (%)			8.93	PM - K FACTOR (%)			8.26
AM - D (%)	40.10	59.90	100.00	PM - D (%)	62.40	37.60	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	622	996	1,618
PEAK HR TIME	02:00 PM to 03:00 PM			AM 12-HR PERIOD (00:00-12:00)	662	1,120	1,782
PEAK HR VOLUME	196	129	325	PM 6-HR PERIOD (12:00-18:00)	1,094	774	1,868
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	1,820	1,036	2,856
PEAK HR TIME	02:00 PM to 03:00 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	2,482	2,156	4,638
PEAK HR VOLUME	196	185		D (%)	53.51	46.49	100.00

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division
Highways Planning Survey Section
Vehicle Classification Data Summary
2016

Site ID: B72928000000 **Route No:** 9280 **Date From:** 2016/12/02 0:00
Town: Oahu **Direction:** +MP **Date To:** 2016/12/15 23:45
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

Functional Classification: 18 TEST NEW URBAN: MINOR COLLECTOR
REPORT TOTALS - 336 HOURS RECORDED

	VOLUME	%	NUMBER OF AXLES
Cycles	1771	3.18%	3541
PC	43733	78.54%	87466
2A-4T	8820	15.84%	17640
LIGHT VEHICLE TOTALS	54324	97.56%	108647
HEAVY VEHICLES			
Bus	86	0.15%	215
SINGLE UNIT TRUCK			
2A-6T	634	1.14%	1268
3A-SU	278	0.50%	834
4A-SU	283	0.51%	1132
SINGLE-TRAILER TRUCKS			
4A-ST	36	0.06%	144
5A-ST	16	0.03%	80
6A-ST	3	0.01%	18
MULTI-TRAILER TRUCKS			
5A-MT	1	0.00%	5
6A-MT	22	0.04%	132
7A-MT	2	0.00%	14
HEAVY VEHICLE TOTALS	1361	2.44%	3842
CLASSIFIED VEHICLES TOTALS	55685 (A)	100.00%	112489 (B)
UNCLASSIFIED VEHICLES TOTALS	-2	-0.00%	

AXLE CORRECTION FACTOR (A/C) = 0.990

ROADTUBE EQUIVALENT(B/2) = 56245 (C)

PEAK HOUR VOLUME : 381 2016/12/13 16:00	PEAK HOUR TRUCK VOLUME	% TOTAL PEAK HOUR VOLUME	24 HOUR TRUCK VOLUME	AADT	% OF AADT	HPMS K-FACTOR (PEAK/AADT) (ITEM 66)
SINGLE UNIT TRUCKS (TYPE 4-7)	13	(65A-1) 3.41%	91	4100	(65A-2) 2.22%	9.29%
COMBINATION (TYPE 8-13)	1	(65B-1) 0.26%	5		(65B-2) 0.12%	9.29%

Run Date: 2017/08/11

Hawaii Department of Transportation
Highways Division **Highways Planning Survey Section**
2016 Program Count - Summary

Site ID: B72928000000 **Town:** Oahu **DIR 1:** +MP **DIR 2:**-MP **Final AADT:** 0
Functional Class: TEST NEW URBAN: MINOR COLLECTOR **Count Type:** CLASS **Counter Type:** Tube **Route No:** 9280
Location: Pupukea Rd - Kamehameha Hwy to Alapio Rd

TIME-AM	DIR 1	DIR 2	TOTAL	TIME-AM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL	TIME-PM	DIR 1	DIR 2	TOTAL
DATE : 12/15/2016															
09:30-09:45	15	6	21												

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2		PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	04:00 PM to 05:00 PM		
AM - PEAK HR VOLUME	151	231	382	PM - PEAK HR VOLUME	68	143	211
AM - K FACTOR (%)			10.82	PM - K FACTOR (%)			5.97
AM - D (%)	39.53	60.47	100.00	PM - D (%)	32.23	67.77	100.00
DIRECTIONAL PEAK				DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM		PM - PEAK HR TIME	05:45 PM to 06:45 PM	04:00 PM to 05:00 PM	
AM - PEAK HR VOLUME	151	243		PM - PEAK HR VOLUME	84	143	

AM PERIOD (00:00-12:00)				PM PERIOD (12:00-24:00)			
TWO DIRECTIONAL PEAK				TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM			PM - PEAK HR TIME	12:00 PM to 01:00 PM		
AM - PEAK HR VOLUME	151	231	382	PM - PEAK HR VOLUME	136	114	250
AM - K FACTOR (%)			10.82	PM - K FACTOR (%)			7.08
AM - D (%)	39.53	60.47	100.00	PM - D (%)	54.40	45.60	100.00

NON-COMMUTER PERIOD (09:00-15:00)				6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	Total
TWO DIRECTIONAL PEAK				AM 6-HR PERIOD (06:00-12:00)	610	1,027	1,637
PEAK HR TIME	09:00 AM to 10:00 AM			AM 12-HR PERIOD (00:00-12:00)	657	1,154	1,811
PEAK HR VOLUME	112	182	294	PM 6-HR PERIOD (12:00-18:00)	488	710	1,198
DIRECTIONAL PEAK				PM 12-HR PERIOD (12:00-24:00)	753	968	1,721
PEAK HR TIME	12:15 PM to 01:15 PM	09:00 AM to 10:00 AM		24 HOUR PERIOD	1,410	2,122	3,532
PEAK HR VOLUME	145	182		D (%)	39.92	60.08	100.00

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Denise Antolini
President, Mālama Pūpūkea-Waimea
P.O. Box 188
Haleʻiwa, HI 96712

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Antolini:

Thank you for your comment letter dated January 8, 2017 with the attached January 7, 2018 letter from Tom Brohard and Associates, regarding the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project.

Mālama Pūpūkea-Waimea (MPW) provided Mr. Brohard's conclusion that states the DEIS does not provide an adequate assessment of traffic impacts on the adjacent roadway segments and intersections due to errors in methodology and outdated information. The comments forwarded by MPW are in addition to a comment letter also dated January 8, 2017 from MPW, which are addressed in a separate response from G70 on behalf of its client, Hanapohaku LLC.

According to his letter, Mr. Brohard reviewed Chapters 1, 2, and 3.13, as well as Appendix F (Transportation Impact Analysis Report) of the November 2017 Pūpūkea Rural Community Commercial Center Draft Environmental Impacts Statement (DEIS) prepared by G70. The following responses are offered to Mr. Brohard's detailed comments:

Education and Experience

We acknowledge receiving Mr. Brohard's statement of professional experience and note that in addition to his experience in California, he reviewed Traffic Impact Analysis Reports, Updates and Addendums prepared between 1985 and 2009 on behalf of "Keep the North Shore Country."

Traffic and Transportation Issues/Concerns

1. TIAR . . . signed and stamped by a civil engineer licensed in Hawaii:

Comment: *Fehr & Peers, the firm that performed the TIAR for the DEIS, is a transportation engineering firm with offices throughout the Western United States. On their website at http://www.fehrandpeers. com/contactus/, the firm also shows an office at 500 Ala Moana Boulevard, Suite 7-400 in Honolulu. According to Maxx Phillips, Managing Director of Pupukea-Waimea who visited the Honolulu location on December 20, 2017, the "office" is*

merely mail drop location and no Fehr & Peers staff work there. The receptionist did not have a contact name or phone number.

Response: The office is an executive suite used by Fehr & Peers staff when they are working in Honolulu. No Fehr & Peers staff permanently work at that location.

Comment: *Hawaii Administrative Rules Title 16, Chapter 115 regarding Professional Engineers, Architects, Surveyors, and Landscape Architects published by the Department of Commerce and Consumer Affairs, requires that civil engineering works be directly controlled and personally supervised by an engineer licensed in Hawaii (see Enclosure 2). As a reviewer of civil engineering works prepared by others, I too am required to be licensed as a civil engineer in Hawaii.*

The Professional and Vocational Licensing Division (PVL) of the Department of Commerce and Consumer Affairs licenses individuals but is not able to identify members of firms who are licensed in Hawaii. As a result, I cannot determine if this TIAR was prepared under the direction of a civil engineer licensed in Hawaii. The Rules put forth in Chapter 115 requiring that the TIAR be signed and stamped were not followed by Fehr & Peers. The purpose of requiring a locally licensed engineer is to ensure the integrity of the information gathered and analyzed. As further indicated below, the TIAR indicates a surprising lack of familiarity with the local conditions along Kamehameha Highway on the North Shore and specifically at Pupukea, which appears to have led to several faulty assumptions and weak analysis in the TIAR and DEIS.

Response: The TIAR has been updated to include the stamp of the licensed civil engineer reviewing the work. Fehr & Peers started working on projects in Hawaiʻi in 1990 and has regularly worked on the projects in the islands since the mid-2000s. Having worked on hundreds of projects on Oʻahu, Fehr & Peers is very knowledgeable regarding the local conditions. Furthermore, Fehr & Peers always conducts field observations of the study area to ensure it has a comprehensive understanding of the transportation system.

2. *Traffic counts used in the TIAR may not be properly factored or adjusted:*

Comment: *The only traffic counts provided in the TIAR Appendix were conducted from Thursday through Saturday, November 17 through 19, 2016. Your email to Jeff Overton at G70 in August 2017 requesting additional traffic counts and documentation and expressing concerns about the validity of the data gathered were not addressed by G70 before the release of the DEIS, in the document itself, or in the TIAR (dated July 25, 2017 but not released until November 23, 2017), which did not include any additional traffic counts.*

Page 21 of the TIAR indicates that traffic counts on the two-lane Kamehameha Highway in the area of the Proposed Project vary up and down but the TIAR reaches no conclusion regarding traffic volume trends. Page 24 of the TIAR indicates that it considered historic DOT traffic data "in the study area from 2013, 2014, 2015, and 2016" but does not reference 2017 and does explain or attach any of the reviewed data. Page 24 of the TIAR concludes "the review of these volumes did not reveal a clear trend in the roadway system's groMh...[sic]*" This detailed information, including the definition of "the study area," the precise location of the counts, and the "consideration" or analysis of this data by Fehr & Peers must be included in the DEIS to properly inform the agency and the public on this critical traffic issue.*

In response to my recent emails to the Department of Transportation (DOT), I was provided with a number of traffic counts that have been conducted over the last few years (see Enclosure 3). At minimum, these traffic counts should have been used by Fehr & Peers to establish proper seasonal adjustment factors as well as ambient annual growth factors. Best practice would have been for Fehr & Peers to (1) provide historic data from the same location as the TIAR traffic counts, and (2) to take a second traffic count during the high season of July-August 2017, before Labor Day Weekend, as requested by Malama Pupukea-Waimea (MPW). Lacking this kind of depth and understanding of local conditions, the data and information presented are an inadequate basis on which to draw sound conclusions.

The 1% annual ambient traffic growth factor used in the TIAR is not supported by count data. Page 23 of the TIAR attempts to support this assumption stating it is "reasonable given the built-out nature of the Pupukea neighborhood and the limited planned development in the greater North Shore area." Neither of these factors is a valid basis for the 1% assumption.

Response: The selection of the study days and periods were made in consultation with the project team, which has substantial knowledge of the North Shore area. The days selected for counts and the use of those counts in the study were intended to provide operations on a typical day during the high-traffic surf season. It was not the intent of the analysis to provide worst-case conditions.

Regardless, a comparison of the annual data on Joseph P. Leong Bypass west of the project site from HDOT provided by the commenter shows that the variation over the course of the year is not substantial. The November 2016 monthly average daily traffic (ADT) volume (11,318) from the summary is only 1.5% less than (and is essentially the same as) the total monthly average of 11,431 vehicles. In addition, November is 6% less than the peak month of July (12,061), and the next highest month is June with 11,660 vehicles (and only higher than November by 3%). Lastly, it is important to note that traffic counts can vary from day-to-day by five (5)% or more depending on the location. Thus, November data is representative of typical conditions in this corridor over 10 to 11 months of the year. Even if a worst-case evaluation was completed based on this information (which is not typical), a 3% to 6% change in the traffic volumes used in the analysis would not result in any significant change to the identified impacts or proposed mitigation.

Regarding the 1% annual growth rate, as stated in Section 4.1 of the TIAR, the historic DOT count data did not show a clear trend in traffic patterns between 2014 and 2016. A more reliable indication is the use of a travel demand model that examines the interrelationship of land use and transportation over a sustained period of time (typically 20 years or more). According the Oahu Metropolitan Planning Organization (OahuMPO) Travel Demand Model, the annual growth rate in Pūpūkea between the base year (2012) and the horizon year (2040) is 1.0%, which is the rate used in the traffic study. Therefore, the annual growth rate of 1% is supported by the forecasts from the OMPO Travel Demand Model and the TIAR text has been revised to reflect this.

Comment: *Data from DOT traffic counts provided to MPW for Pupukea Road from 2014, 2015, and 2016 (Enclosures 4, 5, 6) indicate that peak am traffic is steadily increasing in these recent three years. For example, for the comparable January data in each of these years, the highest three numbers in the 7:30 am and 7:45 am commute periods went from 87—89—90 vehicles*

(2014) (average 89), to 92-93-93 vehicles (2015) (average 92), to 117-127-135 vehicles (2016) (average 126), roughly a 30% increase in three years.

According to the DOT counts in Enclosure 3 taken in October 2013 at Sunset Chevron and six months later in April 2014 at Chun's (both of which are during the "low" traffic season, Enclosure 3), a monthly count along the Joseph Leong Bypass indicates April was the second lowest traffic month in 2016 and October was the 6th lowest month. Even so, the growth rate in just that six—month period was 15% as indicated below. [Find table in original comment letter published alongside this response.]

Although this does not represent the annual growth rate, because the DOT data are not from the same days and months, it does demonstrate that the 1% assumption is likely erroneous and that data collection must be more robust, transparent, and comprehensive to be meaningful for the review of this DEIS.

To establish accurate future baseline conditions at occupancy of the Proposed Project in 2021, five years after the 2016 counts were made, adjustment factors must be properly disclosed and calculated and then added to the baseline traffic volumes to create a proper baseline upon which the Proposed Project traffic volumes can then be added and evaluated.

Response: A comparison of individual traffic counts over several years to establish a growth factor is not necessarily an indication of a long-term growth trend. Traffic counts can vary day-to-day by five (5) % or more. Using information from the comment, over a six-year period the highway would experience a 60% increase in traffic, and over 12 years, traffic would be projected to more than double in the corridor, and so on. This is not realistic and has not occurred previously along the highway.

As noted in the previous response, a more reliable indication is the use of a travel demand model that examines the interrelationship of land use and transportation over a sustained period of time (typically 20 years or more). According the Oahu Metropolitan Planning Organization (OahuMPO) Travel Demand Model, the annual growth rate in Pūpūkea between the base year (2012) and the horizon year (2040) is 1.0%, which is the rate used in the traffic study. Therefore, the annual growth rate of 1% is supported by the forecasts from the OahuMPO Travel Demand Model and the report text has been revised to reflect the source for the growth rate.

Project Trip Generation Was Not Properly Calculated

Comment: *Trip generation for the Proposed Project was developed using Trip Generation, 9°° Edition published in 2012 by the Institute of Transportation Engineers, ITE. In Summer 2017, ITE published Trip Generation, 10t Edition, which contains a number of changes and supersedes the 2012 edition. The TIAR must be updated to reflect the following changes and the latest information as follows:*

*a) Specialty Retail (Old Land Use Code 826 from 2012.gth Edition) — The TIAR used the trip generation data from this land use code which had lower peak hour and daily trip rates than those for other commercial and retail land uses. The 10!** [sic] *Edition no longer includes trip rates for the "specialty retail" land use. The studies upon which these rates were based have been moved to other land use codes.*

Using Shopping Center (New Land Use Code 820 from 2017, 10th Edition) to calculate revised trip generation forecasts for the Proposed Project will result in higher traffic volumes than were assumed in the TIAR using Specialty Retail. Weekday daily trips for a 30,000-square foot shopping center would be about 2,650 rather than 1,122, with PM peak hour trips of about 220 rather than 90. Similar increases can be expected on Saturdays for daily and mid-day peak hour trips.

Thus, by using outdated guidelines and the incorrect code, the TIAR underestimated trip generation of the project by 57%. This serious error must be addressed and corrected in a Recirculated DEIS.

Response: The Specialty Retail rate description more accurately describes the proposed project size and composition of the proposed development. The use of a shopping center rate is expected to provide a conservative estimate of traffic given the rural context and higher than expected level of pass-by traffic. That said, the study has been revised to include a sensitivity analysis to determine if the use of higher trip rates would potentially change the study findings.

Using the new Shopping Center rates from the 10th Edition of the ITE Trip Generation Manual would increase the total weekday midday and PM peak hour vehicle trips by 129 vehicles and the Saturday midday peak hour by 99 vehicle trips as compared to the 9th Edition Specialty Retail rates. However, these totals include pass-by trips which reduces the number of net new trips to the site to 90 and 69 trips, for the weekday and Saturday peak hours, respectively. This results in an average of an additional 1.2 to 1.5 cars per minute as compared to the Specialty Rate analysis.

More importantly, using the shopping center rates in the operations analysis does not change the conclusions of this study: the proposed improvement of a center two-way left-turn lane on Kamehameha Highway will serve the project trips and provide additional capacity, minimize delays, and not impede traffic flow on the highway. The additional traffic using the shopping center rate could be adequately served by the new lane and this sensitivity analysis was included in the revised TIAR.

b) Food Cart Pod (New Land Use Code 926 in 2017, 10th Edition) — The 10fh Edition includes new Land Use Code 926, which has not appeared in prior editions of Trip Generation. This land use is described as " ... a group of food carts or food trucks congregated in an established location such as a parking lot on a semi-permanent or regular basis. Food pods typically serve lunch and dinner with lunchtime typically generating the highest volumes of the day. Food cart pods often include limited covered seating or dining area and may include the sale of alcoholic beverages."

The number of food trucks in the Proposed Project is higher than the five currently using the site. The site plans shown in the documents illustrate as many as seven food trucks whereas Page 6 of the TIAR indicates between four and six food trucks; in a community presentation, as noted by Malama Pupukea-Waimea, I understand G70 projected up to eight food trucks, twice as many as the lower number stated in the TIAR.

The Fehr & Peers traffic counts taken in November 2016 need to identify the number of food trucks present on the count days as well as all changes in the square footage of the shops that will remain (e.g., real estate, ocean sports, beachwear) to properly support the trip generation

estimates and forecasts that were previously used. The TIAR incorrectly dismisses the potential differences in trip generation. Significant trip generation errors could be introduced by merely assuming that the number of food trucks and the square footage of the shops that remain will be the same in the "before" and "after" conditions. More detailed and specific calculations are required, not generalities.

Response: As noted above, the ITE 10th Edition was not available at the time the technical analysis was completed. A review of the trip rate data for food cart pods is limited to the weekday PM peak hour of the adjacent street and weekday PM peak hour of the generator. Up to eight (8) food trucks were operating on the site in November 2016 when the field observations were conducted. Using the ITE rates, eight food trucks would generate a maximum of 42 vehicle trips during the weekday PM peak hour of the generator, which is higher than the 24 trips estimated for the peak hour of the adjacent street.

During the November 2016 field observations, the estimate of vehicle trips generated by *all existing uses on the site* including the food trucks was 85 trips during the weekday PM peak hour and 140 trips each during the weekday and Saturday midday peak hours. As noted in the TIAR, no credit was applied for existing traffic on the site. It should be noted that these volumes are already included in the operations analysis of both study intersections and far exceed the addition of trips for food trucks using the ITE rates. A comparison the of the Year 2021 traffic volumes on Figure 6 of the TIAR, plus the project-generated traffic illustrated on Figures 7, 8 and 9 in the TIAR to the final volumes on Figure 10, show that each left- and right-turn volume at the project driveway is 20 to 35 vehicles higher. This difference represents the traffic that would be generated by the food trucks and is more than triple the ITE food Cart Pod rate. The TIAR has been updated to include the existing site trip generation and the use of existing traffic to conservatively represent any additional traffic generated by food trucks after project implementation.

Comment: *c) Project Could Create Significant Traffic Impacts. Correcting the trip generation estimates and forecasts as described above could certainly result in significant traffic impacts on Kamehameha Highway at intersections along the frontage of the Proposed Project and at midblock segments. This will require further analysis together with the development of feasible mitigation measures that must be implemented in a timely manner.*

Response: Please see response to comment 3a.

3. Land Geometries at Project Driveway are Incorrectly Illustrated

Comment: *Figures 7, 8, 9, and 10 of the TIAR incorrectly illustrate the number of traffic lanes on Kamehameha Highway at the Proposed Project driveway by showing two southbound through lanes and two northbound through lanes . . . At this location, Kamehameha Highway has only two lanes. Even under the proposed (but not approved) improvements, only one additional traffic lane would be created. Calculations in the TIAR Appendix do not show the additional lanes for through traffic at the proposed driveway. The figures must be explained and corrected to match the calculations.*

Response: The incorrect number of lanes on Kamehameha Highway on Figures 7 through 10 was a graphical error, but the correct lane configuration with one through-lane in each direction was used in the technical analysis. The figures have been updated in a revised TIAR to depict the correct lane configurations at all study intersections.

4. Vehicle Level of Service Calculations Do Not Match "Real Life"

Comment: *Table 1 and Table 2 on Page 11 of the TIAR relate the various Level of Service (LOS) descriptions and delays for vehicles at signalized and non-signalized intersections. Table 4 on Page 22 of the TIAR provides the result of calculations using the November 2016 traffic counts, indicating LOS "A" during mid weekday, PM weekday, and Saturday mid-day peak hours.*

Field observations summarized on Page 21 certainly do not support the calculated LOS 'A" findings. Statements of "Real Life' indicate such observations as "... slow moving queues... , extending approximately 900 feet south of Pupukea Road during all peak hours..." and ".. . during the highest peak times of the peak hour, vehicle queues on Kamehameha Highway in Pupukea have been observed to extend past the roadway curve on Kamehameha Highway (near Saints Peter and Paul Mission) and vehicles experience an increase in delay by a couple of minutes along the highway.' This observation is certainly not representative of Level of Service "A" and the observed queuing does not support the conclusion that "... during the majority of the peak hour, traffic flowed freely on Kamehameha Highway and minimal vehicle delay was experienced along the corridor."

Response: The TIAR acknowledges that congestion does occur in the corridor on select days of the year and can be worse than observed and calculated at the Pūpūkea Road intersection and adjacent to the project site. However, during most of the year, but certainly not at all times, traffic congestion is limited in this area. To further support this statement, a review of Google Maps Typical Traffic data shows some delays during select hours on typical weekdays (Tues through Thurs), but at no time is stop-and-go traffic illustrated by the data (i.e, by a red or dark red indication). On Saturdays, a red indication is shown at up to four different times of the day (but for consecutive periods of 5 to 25 minutes or less), and no red indication is shown on Sunday. Experience has also shown that indications of yellow on Google Maps does not necessarily mean regular vehicle queuing or substantive delays. On multiple occasions, drivers experience minimal or brief delays at a signal or close free-flow conditions even when yellow is indicated on Google Maps.

Comment 5 Continued: *To more completely relate "Real Life" to the calculated intersection Level of Service, the TIAR must calculate mid-block Level of Service in addition to the intersection Level of Service. While unusual, it appears here that the mid- block Level of Service*

may be significantly worse than what occurs once vehicles finally reach the traffic signal on Kamehameha Highway at Pupukea Road.

The TIAR, with its flawed LOS calculations, indicates Kamehameha Highway operates at LOS "A" at Pupukea Road. The calculation results simply do not match up with various real-time traffic data sources such as Google Maps, WAZE, and other sources, all of which colorfully show significant congestion in "red" and slow traffic in 'yellow" during many hours of most days. Congestion now occurs regularly throughout the year. Traffic conditions are now being reported as "stand still - traffic jammed' at 3:50 PM on December 27, 2017 just to the south. Corrected midblock LOS calculations revised as discussed above will likely result in worse LOS for existing conditions as well as for future conditions in Year 2021 without and with the Proposed Project.

Response: A mid-block operations analysis is appropriate when no traffic control (e.g., a traffic signal or stop sign) exists on a conventional highway. In the vicinity of the project site, the traffic signal at Pūpūkea Road governs operations and represents the local constraint point of the roadway system. Accordingly, the intersection analysis is considered appropriate. In addition, the proposed re-striping of the section of highway immediately in front of the project site and the consolidation of the Foodland driveways will help to minimize delays by moving turning traffic out of the through lanes and enhancing vehicle throughput. This will facilitate travel in advance of and after the existing signal and result in an overall area benefit on the highway especially during peak periods.

As noted in the previous response, Google Maps Typical Traffic data does not show any red indication on typical midweek days and limited red indications for short periods during each of four separate hours on a Saturday. The TIAR acknowledges that congestion occurs in this corridor at selected times, but it is not a regular occurrence for the majority of the year and the study analyzes typical conditions based on observations and available traffic data.

Comment 5 Continued: *Page 41 of the TIAR does not, for example, analyze the impact of moving the bus stop, and the possible inclusion of a bus turnout lane as currently exists on the inland side of the Highway nearer to the Pupukea intersection. These measures may not be allowed by Foodland or DOT, and may, in fact, still increase congestion at the traffic signal regardless of a turnout by the mere pulling over and stopping of a bus at this location so near the intersection. Mitigation measures such as these already indicated must be more developed, disclosed, analyzed, and implemented by the Proposed Project.*

Response: The proposed consolidation of the Foodland site driveways with the proposed project driveway has been discussed and concurred with by with the property owner. The proposed location of the northbound bus stop just north of the Pūpūkea Road intersection is a standard transit configuration (i.e., a far side stop) and allows northbound right turning vehicles to Pūpūkea Road to proceed without being impeded by a stopped bus. The stop will be located and designed per State of Hawaii DOT Highways Division and TheBus standards. As noted in the TIAR locating the bus closer to the traffic signal at Pūpūkea Road benefits transit patrons desiring to cross the highway at a controlled location, which enhances safety for all roadway users. The provision of a bus turnout will be determined in consultation with DOT Highways and City & County of Honolulu Public Transit division staff.

In some cases, use of a turnout is not preferred on the highway as it causes schedule delays if vehicles in the travel lane do not allow the bus to re-enter traffic in a timely manner.

5. Pedestrian Level of Service is "F"

Comment: *Page 18 of the TIAR indicates that the existing Level of Service for pedestrians crossing Kamehameha Highway — at the intersection -- is LOS "F" during the mid-day and PM peak hours. The Proposed Project will certainly generate additional pedestrian crossings of Kamehameha Highway. The TIAR should note that this count does not appear to be taken at mid-block, where the project already generates substantial random midblock pedestrian crossings of the Highway.*

The TIAR and the DEIS do not address either the LOS "F" at the existing signalized intersection or the midblock pedestrian crossings.

Response: The undesirable LOS F for pedestrians is caused by the volume of traffic on the highway and the limited number of gaps in traffic. Accordingly, pedestrians can be substantially delayed while waiting to cross. The TIAR acknowledges that some pedestrians cross the highway at midblock locations between Pāhoe and Pūpūkea Roads, and this would also be considered LOS F. The TIAR text has been edited accordingly and to clarify that a formal count was not conducted but was based on field observations. The pedestrian LOS at the signalized intersection of Pūpūkea Road was not calculated since all of the crossings at this intersection are controlled and traffic is legally required to stop for the traffic lights.

Comment 6 Continued: *While the proposed rectangular rapid flashing beacons at the new proposed crosswalk across Kamehameha Highway at Pahoe Road seem to be the better of several options, Page 43 of the TIAR forecasts the projected LOS for pedestrians will still be an unacceptable "F" under this scenario. The TIAR also does not analyze the resulting congestion that can be created by the RRFB system, which can be activated at any time by pedestrians, along both directions of the Highway for drivers at this location.*

Also, the Proposed Project must also address the increased crossings at the two other locations and include continuous dense landscaped pedestrian barriers along the Proposed Project frontage to deter, discourage, and eliminate pedestrian crossings at numerous random midblock locations.

Response: With implementation of enhancements at the Pāhoe Road pedestrian crossing of the highway, conditions will be substantially improved for people crossing the highway. The TIAR incorrectly stated that LOS F conditions for pedestrians will continue after the enhancements are installed, and the text has been edited accordingly. The proposed rectangular rapid flashing beacon (RRFB) will require vehicles to stop temporarily to allow pedestrians to cross the street. However, this activity occurs today as vehicles stop to allow pedestrians to cross at multiple locations along the project frontage.

To focus pedestrians at one location, landscaping and other methods along the project frontage will be used to deter midblock crossings. In addition, the overall number of crossings is expected to decrease because formal and convenient parking will be provided within the site, which will reduce the demand for illegal parking on the highway. Overall, the flow of the highway is expected to improve as drivers will only have to stop at one location (Pāhoe Road) instead of yielding to pedestrians illegally crossing at several points.

7) Parking Spaces Do Not Match Up within the DEIS or with the TIAR

Comment: *Figure 2- 3 on Page 2-7 in the DEIS, the Conceptual Site Plan, illustrates 104 parking spaces for the Proposed Project. Parking spaces are poorly illustrated between the new buildings proposed in the middle of the site and the highway and cannot be accurately counted. Figure 2-6 on Page 2-13 of the DEIS shows 99 parking spaces and 7 spaces as potential food truck locations. Table 2-1 on Page 2-9 of the DEIS indicates that 126 parking spaces will be provided. Figure 2 on Page 8 of the TIAR illustrates 117 parking spaces on the site plus another 17 parking spaces in the rear designated as an Overflow Lot, totaling 134 parking spaces.*

The number of parking spaces proposed varies wildly from figure to figure and in the supporting tables. All of these inconsistencies must be removed so members of the public can understand exactly what is being proposed and where it will be located. In addition, if spaces are designated for the food trucks, ADA, trucks, or tour buses, those should be clearly delineated, counted, or marked, even if conceptual.

The parking space count must be accurate and should be assessed in terms of its impact on the inbound traffic flow and traffic outflow from the Project site. For example, one space set aside for a typical four-passenger car might turnover ten times in one day (at least once per operating hour, assuming operating hours of 8:00 am — 9:00 pm). Comparatively, a mini-van with 24 passengers, parked in a designated stall might turn over only five times a day. (The stall usage and count also will impact other data in the DEIS.) The precise nature of the project parking spaces and the estimated stall turnover should all be disclosed and analyzed properly in a Recirculated DEIS.

Response: Vehicle trip generation is estimated using ITE rates, and parking requirements for commercial uses are established under the Land Use Ordinance. Aside from satisfying the LUO requirements for each property, the commercial operations will provide and manage parking effectively. No separate study or estimate of turnover is needed.

8) Proposed New Two—Way Turn Lane

Comment: *Pages 4 and 6 of the TIAR state that the Project "includes the installation of a new center two-way left-turn lane to provide a refuge area to traffic turning left into and out of the site." The Highway modification portion of the Project is later described as: ". ..the section of Kamehameha Highway between Pupukea Road and Pahoe Road will be widened and re-striped to add a center two-way left-turn lane," which "will be approximately 270 feet long." Page 34 of the TIAR also observes that, with the new lane, vehicles "will have to wait for a gap in traffic to allow them to cross or merge into traffic", and that "this will enhance safety."*

The TIAR does not reconcile this overly optimistic statement with observations elsewhere that traffic in the new driveway area is projected to be at only LOS C or D (page 35) and pedestrian safety in the area is LOS F or worse (page 43). In addition, the TIAR acknowledges that the on-site traffic flow and back up conditions may create additional problems at the new driveway. Page 38 states "The potential concern is that this blockage would cause an inbound queue in the driveway and impeded turns from the Highway." The proposed internal No Left Turn signage will not be enforceable as it is located on private property. This blockage problem requires further analysis and improved mitigation such as a longer entry/exit throat where vehicle turns are physically prohibited into the parking lotcross-aisles.

Response: LOS C and D are desirable operating levels according to both HDOT and the City & County of Honolulu. Pedestrian safety will be enhanced with the provision of crossing improvements at the Pāhoe Road intersection, as well as the installation of landscaping along the project frontage to discourage midblock crossings. The report text is being modified to remove the incorrect statement that pedestrian conditions will be LOS F after the improvements are installed.

The purpose of the recommended "No Left Turn" sign at the first on-site driveway intersection is to deter drivers from potentially blocking inbound traffic and to provide wayfinding for drivers looking for available parking spaces. This is a common practice within many commercial centers and is effective in minimizing congestion; the intent is not to be able to cite drivers based on the vehicle code. If needed, additional treatments could include, but are not limited to, cones or delineators, and/or striping the angled parking spaces in the outbound direction. No additional study is needed to justify the sign.

Comment 8 Continued: *Neither the TIAR nor the DEIS indicate (a) the feasibility of such an additional third lane including use of the inland and seaside Highway shoulders (Page 21 provides observations on seaside parking along Highway for pedestrian or bike lanes), or (b) if the DOT has approved, even preliminarily, or is likely to approve these modifications to public land and the budget. Furthermore, no timeline has been indicated for approval or implementation of these key modifications to traffic flow.*

In addition, the TIAR and DEIS need to analyze the impacts of the Project assuming that the additional turning lane is not approved by DOT or Foodland. Because the Project owners do not own the public land for the proposed modifications and do not have approvals in hand, the assumption cannot be made that the modifications will occur or will occur in a timely manner. This is a critical flaw in the traffic and pedestrian analysis. Therefore, a "no modification" scenario for the Highway must be analyzed in a Recirculated DEIS.

Response: To accommodate the two-way center left-turn lane, the highway can be re-striped with additional pavement being provided as part of the site frontage improvements. Preliminary plans have been presented to HDOT staff and the proposed layout is considered feasible based on HDOT design standards. As noted in a previous response, the Foodland property owner concurs with the proposed roadway layout. A narrowly paved shoulder will be maintained on the makai side of the highway, and no new paving or widening is proposed in this area. Parking on the shoulders of the highway is not legally permitted but has occurred informally over time. The grass shoulder area is supposed to be reserved for pedestrians or for a disabled vehicle to be moved out of the highway travel lanes.

9) <u>Impact on Pupukea Road and Internal Traffic in the Foodland Parking Lot</u>

Comment: *Impact on Pupukea Road and Internal Traffic in the Foodland Parking Lot — Pages 4 and 6 of the TIAR states the Project proposes to close the two existing driveways for Foodland along Kamehameha Highway to reduce access points. Neither the TIAR nor the DEIS indicate if Foodland has approved, even preliminarily, or is likely to approve these modifications to private land and the right-of-way for the Highway. Nor is a timeline indicated for approval or implementation of this key modifications to traffic flow.*

The TIAR also does not analyze the impact of these modifications to the internal circulation patterns of the Foodland parking lot. Page 29 indicates the Pupukea Road ingress/egress will

be much more heavily used, stating 'some of the Foodland trips". .. "would shift to the Pupukea Road driveway". Page 34 fails to disclose the adequacy of this narrow driveway aisle inside the parking lot for current and future traffic.

Response: The project team has coordinated with Foodland, which concurs with the recommended driveway consolidation and re-striping of the highway. Timing will be in conjunction with the Kamehameha Highway frontage improvements, and the internal connections between the project site and Foodland will serve two-way traffic and be designed accordingly. The existing Foodland driveway on Pūpūkea Road experiences little or no delay caused by turning movement operations. The projected increase in any one turning movement is an average of less than one vehicle per minute during any peak hour, which is not expected to result in any substantial traffic operations issues. To further ensure that the added traffic on Pūpūkea Road does not cause any new delays, it is recommended that a KEEP CLEAR designation be installed on makai-bound Pūpūkea Road at the existing Foodland driveway. This will minimize the potential for makai-bound traffic waiting for the traffic signal from blocking the driveway and impeding eastbound left-turns into the site.

Comment 9 Continued: *In addition, as the TIAR acknowledges on Page 39, the problem of congestion from Foodland truck deliveries is a major concern. The TIAR then makes the unrealistic suggestion of moving the truck deliveries to the early morning or mid- afternoon, even though Page 40 notes that "time period is usually outside of the truck delivery operations." This information on the Foodland parking lot and sole remaining driveway, and the interaction with delivery trucks to Foodland, should be disclosed and analyzed in a Recirculated DEIS.*

Response: The statement recommending truck delivery schedules on page 40 has been clarified to state that the truck deliveries be done in the midday peak period.

Comment 9 Continued: *The TIAR and DEIS need to analyze the impacts of the Project assuming that the modified driveways for Foodland are not approved. Because the Project owners do not own the private land for the proposed modifications and do not have approvals in hand, the assumption cannot be made that the modifications will occur in a timely manner. This is a critical flaw in the traffic and pedestrian analysis. Therefore, the "no modification" scenario for the Foodland driveways must be analyzed in a Recirculated DEIS.*

Response: As noted in the prior response, the driveway modifications have been approved by Foodland. No re-analysis or "recirculated DEIS" is needed.

10) <u>Other Errors in the Data and Analysis —</u>

The level of error in the design and analysis of the TIAR indicates that insufficient time and care, or local knowledge, was provided to accurately reflect the current traffic and pedestrian conditions at the Project site. Examples provided below should be considered indicative of how the TIAR and the DEIS need to be corrected:

a) <u>Peak Conditions</u> — Page 9 of the TIAR states that "a study of AM peak period conditions (i.e. 6 AM to 9 AM) was not conducted because the number of project-generated vehicle trips was expected to be negligible given the potential uses on the site." This period of time should have been studied. As indicated by DOT data in Enclosure 3, the early commute along Kamehameha Highway shows a significant peak at 8 AM, which is the

expected opening time of the project retail and restaurant operations. The AM peak hours must also be studied.

Response: The proposed project would generate negligible vehicle trips during the AM peak period; therefore, the midday, PM, and weekday scenarios were analyzed when the project trip generation is the highest. Most of the anticipated retail uses within the site are not expected to be open prior to 9:00 AM, and most of the food establishments are not expected to be open for breakfast or would have limited morning trip generation. This is a common technical approach for commercial center TIARs.

Comment 10 Continued:

b) *Bicycle Lanes and Usage — The TIAR does not accurately portray the existing Ke Ala Pupukea Bike Path locations or usage, or the bike traffic in this area where the bike path is not contiguous. Page 18 of the TIAR does indicate that bicyclists "use the parking lane on located on the inland side of the Highway located north of the Sunset Beach Fire Station...as a de facto extension of the Ke Ala Pupukea Bike Path.' However, the TIAR does not explain how this will be impacted by the Proposed Project or the lack of safety for bicyclists crossing the highway to the inland side in this area. In addition, it appears that the Project will eliminate all current parking on the inland side of the Highway fronting the project, as well as add a third refuge lane within the Highway in this area. The impact of these two changes on the bicycle traffic should be disclosed and analyzed.*

Response: The project would not have a direct impact on the existing bike path. Cyclists destined for the site would be able to cross the highway at the enhanced crossing at Pāhoe Road or at the signal at Pūpūkea Road. The elimination of parking on the mauka shoulder of the highway would actually enhance bicycle travel for those in the northbound highway lane by removing the potential for getting "doored" as people enter and exit parked vehicles. The addition of the two-way left-turn lane would also provide a refuge area for southbound cyclists on the highway waiting to turn into the site (versus waiting in the existing through lane where cars may pass closely on the right).

Comment 10 Continued:

c) *Pedestrian Safety and Crosswalks — The pedestrian counts for the peak periods in the TIAR appear to be based on field observations only at the signalized crosswalk. Even at this controlled intersection, the TIAR discloses an LOS F during midday and PM peak hours. This is unacceptable and the cumulative impacts of the Project will only degrade the LOS further.*

Response: Please see response to comments 5 and 6.

Comment 10 Continued: *Furthermore, the field observations should have included the high level of random midblock crossings that occur in front of the Project site, across the Highway, back and forth to the Pupukea Beach Park, rather than 215 feet away at the signalized crosswalk. Pages 18 and 21 of the TIAR admit that such crossings occur and indicate "this pattern is not desirable from a safety perspective." Page 19 admits that "While formal counts were not conducted at the Pahoe Road intersection or along the segment south of this street, the number of pedestrians crossing the highway during the Saturday peak hour was* estimated to be in excess of 60." *(Emphasis added.) This number is substantially higher than the numbers observed of pedestrians crossing at the signalized crosswalk, indicating both that the*

current project is adversely affecting pedestrian safety and that the problem will only worsen with the Proposed Project.

Page 18 of the TIAR indicates that a crosswalk near Pahoe Road will be part of the mitigation to manage pedestrian safety but does not analyze the likelihood of actual usage of the crosswalk, nor if DOT has approved, or ever would approve, the design, budget, or construction.

Response: As described in Responses 5 and 6, the crossing at Pāhoe Road is expected to see higher usage than today because of the proposed enhanced crosswalk features that will direct pedestrians to this location, and the landscaping along the site frontage that will deter mid-block crossings.

d) *Surf Contests — Pages 19 and 21 of the TIAR indicate that the traffic counts taken in 2016 were, in part, during the "Haleiwa Surf Competition." The Haleiwa surf competitions occur, as the name used by the TIAR implies, in Haleiwa over six miles away from the Project site. The Haleiwa surf events, in fact, tend to draw traffic away from the Pupukea-Sunset area and often results in lower than usual traffic counts near the Project site. In fact, as you have informed me, on the Friday of the traffic count, November 18, 2016, the Hawaiian Pro at Haleiwa was won by local Sunset Beach surfer John John Florence, which is even more reason to suggest that the traffic, with his huge local fan club, concentrated during this period down the coast in Haleiwa and not in the Pupukea area; thus, these dates appear to under-represent the peak local surf contest traffic.*

The TIAR should have analyzed traffic in the project study area during the numerous surf contests at Waimea Bay, Ehukai, or Sunset Beach, all of which draw traffic into the Project site area. This is another indication of how the data behind the TIAR is flawed. At one point, the TIAR appears to inject some local knowledge when Page 21 states "It is important to note that during the highest peak times of the peak hour (i.e. surf competitions, high surf), vehicle queues on Kamehameha Highway in Pupukea have been observed to extend past the roadway curve on Kamehameha Highway (near Saints Peter and Paul Mission) and vehicles experience an increase in delay by a couple of minutes along the highway." Page 22 notes "under field observations, drivers do experience temporarily delays at this intersection during some periods of the peak summer and surf seasons." However, as noted above, the TIAR did not gather data during the peak summer (despite the request of Malama Pupukea-Waimea) or local (Waimea-Ehukai-Sunset) surf contests. No data are offered to support these off-hand observations and relevant peak periods of traffic indeed should have been analyzed and data provided to document the cumulative impact of the Project.

Finally, Page 37 of the TIAR concludes that "During the peak surf and summer seasons, the intermittent congestion is expected to continue to occur regardless of project implementation." While this may be true, the key point for this DEIS is that (a) the TIAR should have therefore studied traffic during these peak periods, and (b) the TIAR should have examined the cumulative impacts on LOS for vehicles and pedestrians during these peak periods.

Response: Please see response to comment 2. As with many traffic studies, typical operations are studied to identify impacts and potential mitigation. Less frequent/special

events should be acknowledged (as done in the TIAR) but does not require mitigation for these much less frequent occurrences.

Comment 10 Continued:

e) *Overly Optimistic Conclusions – The TIAR makes several overly optimistic conclusions on Page 37 that are misleading. First, the conclusion that no significant impact is expected to traffic is based on inadequate data and, even then, does not acknowledge the serious problems with LOS C and D in front of the Project site.*

Response: DOT and the City's Traffic Review Branch define a significant intersection impact when operation of an intersection changes for LOS D or better to LOS E or F. LOS C and D do not constitute serious operational problems from a traffic perspective.

Comment 10 Continued: *Second, the acknowledgement of additional traffic to the Highway is based primarily on the signalized intersection, which is a controlled point of flow. Third, the additional traffic added to Pūpūkea Road does not consider the poor condition of the Foodland driveway or the existing problems with the internal traffic flow at Foodland. Fourth, the TIAR assumes the Highway modifications will address any additional traffic, without acknowledging that those modifications are not designed, funded, or approved by DOT. Fifth, the improvements from the Project driveway modifications that depend on drivers finding "gaps" in the traffic are difficult to reconcile with the poor LOS for vehicle and pedestrians in this specific midblockarea.*

Response: Comments noted. The project is not proposing to make any changes to the internal flow within the Foodland parking lot. Observations and anecdotal evidence indicates that the internal flow does not significantly impact the operation of the Foodland driveway on Pūpūkea Road. Improvements will be installed by the project based on review and approval by HDOT, and as described in response to Comment 10c, HDOT has been consulted, and the agency provided a comment letter to the Draft EIS, which states: "After HDOT internal consultation, it has been determined that the proposed traffic mitigation and improvements proposed for the development largely satisfy our concerns." The TIAR indicates that the provision of the new two-way center left-turn lane will allow drivers turning left-out of the project site to only need to wait for a gap in traffic in one direction at a time. The modifications do not depend on drivers finding gaps.

Closing Comment: *In sum, the DEIS must address the significant issues and concerns outlined in this letter. The evidence in the DEIS makes clear that the significant traffic impacts created by the Proposed Project will not be addressed in a timely manner, especially in light of the fact that critical mitigation measures are not specified, approved, or funded.*

After correction of the faulty methodology in the DEIS and TIAR, the Pupukea Commercial Center will also be found to create additional significant traffic impacts that must be properly analyzed, evaluated, and mitigated in a Recirculated DEIS.

Response: As noted in responses throughout this letter, the TIAR has been revised to correct minor reporting and graphical errors that do not change the conclusion of the TIAR: the existing stretch of Kamehameha Highway fronting the project, with the added capacity from a center two-way left-turn lane, will accommodate additional vehicle trips to the rural center without substantially increasing delays for existing users on Kamehameha Highway.

Both HDOT and City DTS have been consulted and will continue to be engaged throughout the permitting process. The analysis methodology utilizes approved models for predicting traffic flow.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

cc: Maxx Elisabeth Phillips (maxxephillips@gmail.com)

From: Kathleen Pahinui <pahinuik001@hawaii.rr.com>
Sent: Thursday, January 4, 2018 7:45 PM
To: Jeff Overton
Subject: North Shore Neighborhood Board Comments for Hanapohaku LLC Sharks Cove Project
Attachments: #27 2017-11 FNL KP 1.4.18.doc

Aloha Jeff -

Per the board's motion, attached are the minutes from the November 28, 2017 North Shore Neighborhood Board #27 meeting. At this meeting you presented the proposed rural community commercial center for the Sharks Cove area. Hanapohaku LLC is the developer.

In the minutes you will find all the comments and questions that were raised at the board meeting, these comments and questions are to be included as part of the public record for the Draft EIS and will require a response from G70 / Hanapohaku LLC.

If you have any questions or comments, please let me know.

Mahalo,

Kathleen

NORTH SHORE NEIGHBORHOOD BOARD NO. 27
NEIGHBORHOOD COMMISSION • 925 DILLINGHAM BOULEVARD, SUITE 160 • HONOLULU, HAWAII, 96817
PHONE (808) 768-3710 • FAX (808) 768-3711 • INTERNET http://www.honolulu.gov/nco

REGULAR MEETING MINUTES
TUESDAY, NOVEMBER 28, 2017
WAIALUA ELEMENTARY SCHOOL CAFETERIA

CALL TO ORDER: Chair Kathleen Pahinui called the meeting to order at 7:00 p.m. **A quorum was established with 10 members present**. Note – This 15-member Board requires eight (8) members to establish a quorum and to take official Board action.

Board Members Present: Thomas Shirai, Henry Courtenay, Kathleen Pahinui, Leif Andersen, Carol Philips, Racquel Achiu, Mike Lyons, SharLyn Foo, Bob Leinau, Bob Justice, and John Hirota.

Board Members Absent: Bill Martin, Jacob Ng, Andrew Green and Blake McElheny.

Guests: Captain Alika Akiona (Honolulu Fire Department); Lieutenant Darin Evangelista (Honolulu Police Department); Senator Gil Riviere; Mark Clemente (Representative Lauren Matsumoto); Phil Acosta (ALEA Bridge); Barrie Morgan, Jeff Overton (G70); Lynell Damate (SBCA); Michael Hodge (Hanapohaku); Maxx Phillips (MPW); Scott Ing (PALS); Erica Lernkuhl, Chip Hartman, Phyllis Shipman, Robert Bunda, John Thielst, Elen Atho, Luciana Peixoto, Vaneza Rodrigues, Joey Fullner, Eric Fullner, Penny Coffman (Residents); Denise Antolini; David Amodo (videographer); and Aran Wilson (Neighborhood Commission Office).

All rose for the Pledge of Allegiance and Hawai`i Pono`i.

CITY MONTHLY REPORTS

Honolulu Police Department (HPD) – Lieutenant Evangelista reported the following:

- Safety Tip: Holiday Shopping Tips: Shop during the daylight hours if you can. If you have to shop at night, go with a friend or family member. If you are driving, park close to where you are going and park in a well-lit area. Lock your vehicle when you are out shopping, keep your windows rolled up, do not leave the keys in the ignition and do not leave valuables in view. Hold your items firmly and do not leave them unattended. Also do not overload yourself with too many packages. Do not wait until you reach your vehicle to look for your keys. Have them ready in your hand. The best plan is to have a plan beforehand. Make sure you know what you are purchasing in advance and carry only the amount of cash or credit cards you need.

Questions, comments, and concerns followed:

1. Extra Police during Surf Season: A resident asked if there could be more police during the surf season especially near Paumalu Place. Lieutenant Evangelista answered that there are six (6) officers assigned to that area and will said he will follow up on the parking and speeding concerns.
2. Violence in Haleiwa: Achiu asked about violence in Haleiwa and what is being done, and Lieutenant Evangelista responded that he is aware of recent incidents and HPD has been monitoring the area and recommended people to call 911 if suspicious activity is observed.

Mike Lyons arrived at 7:11 p.m.; 11 members present.

3. Reflective Gear: Shirai commented that those travelling at night whether, on foot or whilst riding, should wear reflective gear as a safety precaution.

Honolulu Fire Department (HFD): Captain Alika Akiona reported the following:

- September 2017 Fire Statistics: There were 2 wildland/brush fires, 2 nuisance fires, 3 activated alarms with no fire. There were 47 medical emergencies, 1 motor vehicle collision with pedestrian, 8 motor vehicle crash/collisions, 3 mountain rescues, 2 ocean rescues, and 2 hazardous materials incidents.
- Fire Safety Tip – Cooking Safety: Cooking brings family and friends together, provides an outlet for creativity, and can be relaxing. However, cooking fires are the number one (1) cause of home fires and home injuries. By following a few safety tips, one can prevent these fires:

- Cook with caution. Be on alert. If a person is sleepy or has consumed alcohol, do not use the stove or stovetop.
- Stay in the kitchen when cooking.
- Keep anything that can catch fire, including oven mitts, wooden utensils, food packaging, and towels away from the stovetop.
- Keep children at least three (3) feet away from the stove.
- If there is a small grease cooking fire, smother the flames by sliding a lid over the pan and turning off the burner. Leave the pan covered until it is completely cooled. For an oven fire, turn off the heat and keep the door closed.
- If one has any doubt about extinguishing a small fire, get out of the house, and call 911. When leaving, close the door behind one's self to help contain the fire.
- HFD discourages the use of turkey fryers. Turkey fryer usage can lead to devastating burns and injuries and destroy property due to the large amount and high temperature of oil being used.

Questions followed:
1. Nuisance Fire: Leinau asked what a nuisance fire is, and Captain Akiona responded that it includes bonfires, rubbish fires and things of that nature.
2. Cell Phones at Gas Stations: Shirai mentioned concerns with cell phone usage at gas pumps.
3. Accident Statistics: Justice asked for a crime statistics for the Laniakea area, and Captain Akiona responded that that area falls under the Sunset Beach Fire Department and he will ask them for the statistics.

U.S. Army 8th Military Police Brigade and 25th Combat Aviation Brigade – US Army Representative Sergeant Ian Morales reported the following:
- Announcements: For updates and training announcements visit www.garrison.hawaii.army.mil.

Questions, comments, and concerns followed:
1. Trash: A resident commented on Meal Ready to Eat (MRE) trash and foxholes at the Kahuku dirtbike trails. Sergeant Morales commented that he will look into the matter.
2. Make a Difference Day: Shirai asked if the Army still participates in "Make a Difference Day", and Sergeant Morales said he will follow up on the inquiry.

RESIDENTS'/COMMUNITY CONCERNS
- Homelessness: Phil Acosta, a representative from ALEA Bridge, thanked the Board for their support. He mentioned a project the Governor has approved that is waiting for approval from the City. Acosta mentioned the Wahiawa Christmas Parade on Friday, December 1, 2017 beginning at 6:30 p.m. at Kaala Elementary School, ending at North Kane Street at 8:30 p.m.
- North Shore Tennis Club: The club is looking for members and those interested were encouraged to call (808) 638-7340.

APPROVAL OF MINUTES

Foo moved and Shirai seconded that the Tuesday, September 26, 2017 regular meeting minutes be approved as circulated. The minutes were approved by UNANIMOUS VOTE as circulated, 11-0-0; (**AYE**: Shirai, Hirota, Courtenay, Pahinui, Andersen, Philips, Achiu, Justice, Foo, Lyons, Leinau; **NAY**: None; **ABSTAIN**: None).

Foo moved and Shirai seconded that the Tuesday, October 24, 2017 regular meeting minutes be approved as circulated. The minutes were approved by UNANIMOUS VOTE as circulated, 11-0-0; (**AYE**: Shirai, Hirota, Courtenay, Pahinui, Andersen, Philips, Achiu, Justice, Foo, Lyons, Leinau; **NAY**: None; **ABSTAIN**: None).

BOARD BUSINESS

Transportation Committee – Waimea Rockfall Mitigation Letter:

Philips moved and Leinau seconded that the North Shore Neighborhood Board No. 27 send a letter to Governor Ige concerning rockfall mitigation in the district.

Discussion followed:
- Recipients: Justice inquired who will receive the letter, and Chair Pahinui responded that it will be sent to the usual parties as well as the Governor.
- Current Situation: Justice asked what the current situation was, and Chair Pahinui responded that right now they have status quo in regards to rockfall mitigation, and they would like current and future issues to be addressed to avoid possible problems. It was noted that the last rockfall mitigation study was in 2002,

The motion PASSED by ROLL CALL VOTE, 11-0-0; (**AYE**: Shirai, Hirota, Courtenay, Pahinui, Andersen, Philips, Achiu, Justice, Foo, Lyons, Leinau; **NAY**: None; **ABSTAIN**: None).

Transportation Committee – Requesting the Department of Transportation (DOT)/Department of Transportation Services (DTS) to study a timed light at Thompson Corner:

Philips moved and Leinau seconded that the North Shore Neighborhood Board No. 27 request the Department of Transportation (DOT)/Department of Transportation Services (DTS) to study a timed light at Thompson Corner.

Discussion followed:
- Addressing Speeding Concerns: Lyons suggested asking specifically for a study on the concerns surrounding traffic and speeding instead of a traffic light.
- Road Closures: Chair Pahinui commented that Deputy Director of DOT, Ed Sniffen, informed her about road closures and concerns with issues and Kamehameha Highway and Farrington Highway. Chair Pahinui also had testimony from a resident whose daughter was involved in an accident at the area in question. The resident was present at the meeting and voiced support for a traffic light.
- Timed Traffic Light: Foo asked how a timed light would operate, and Chair Pahinui detailed its operations.

The motion PASSED by ROLL CALL VOTE, 11-0-0; (**AYE**: Shirai, Hirota, Courtenay, Pahinui, Andersen, Philips, Achiu, Justice, Foo, Lyons, Leinau; **NAY**: None; **ABSTAIN**: None).

Pupukea Rural Community Commercial Center Draft Environmental Impact Study Presentation – Jeff Overton, G70 (Hanapohaku, LLC) gave a brief history of the property and presented the following:

Long-Term Goals:
- This is at the center of the Pupukea-Sunset Beach community.
- Located in a close-knit neighborhood, across from the public beach park & ocean resource.
- We lived here 13 years and raised our kids in this neighborhood.
- Let's create a place that becomes Your Rural Community Commercial Center.

Major Themes:
- Create a beautiful gathering place for the community.
- A place that protects and enhances the character and environment of the North Shore.
- A place where local businesses thrive, service the commercial needs of the community.
- Integrate culture and sustainability following sustainable design principles.

Planning follows the guidance provided under North Shore SCP. 10 points that shape the Vision and Major themes for this property:
1. Goods & services to meet the need of surrounding communities.
2. Attracts visitors and residents from outside the immediate community.
3. Grocery stores, sundries, restaurants, other services/shops catering to residents/visitors.
4. Smaller in scale typically found "Country Town" – Haleiwa is designated a Country Town.
5. Buildings one (1) and two (2) stories in height.
6. Clustered commercial uses versus spreading along Highway.
7. Reflect the rural character and compatible with adjoining area.
8. Safe and convenient transportation and access.
9. Emphasis on Pedestrian and bicycle friendly – crosswalks, pathways, bike racks.
10. Locate parking behind buildings and landscaping.

Based on our discussions in the community and our online survey, this is what we've heard:
- Commitment to local Hawaii based businesses.

- Include tenant uses that complement the existing Foodland.

Tenants that are already committed to the Rural Center (letters of intent signed):
- Urgent Care Medical, Bank/Credit Union, Surf/Ocean Sports, Bicycles/Beachwear
- Health Care/Pharmacy, Sit Down Restaurant, Integration of Food Trucks
- Others could include: Copy Center/Private PO, Yoga Studio and Community Space

Integrates w/ Foodland & Mitigation Factors for Neighbors
- Central Driveway access, consolidates Foodland ingress/egress at Highway
- Driveway connections to Foodland parking lot, lots of landscaping
- No connection from Pahoe Road – fenced off and landscaped to respect neighbors
- Two main Buildings with parking area in the rear, rows of parking covered by PV canopies
- Buildings accessed from the 2nd floor directly from the mauka side
- Quiet side of the buildings facing the neighbors, public face toward the center
- Large park-like open space along the highway – with walkways, bike paths, landscape
- Creating gathering place for community: eating, shopping, relax, just passing thru
- Buildings total about 27,500 SF leasable, 30,000 SF total area on this site (118,000 SF allowable under LUO).

The Draft EIS includes detailed Technical Studies
- Archaeology & Cultural Assessment – approved by State Historic Preservation Division
- Flora & Fauna
- Groundwater & Drainage
- Marine Environment/Ocean Water Quality
- Traffic & Noise

What does the EIS tell us
- Drainage & Runoff are actually reduced w/ Project – low impact development measures
- Some nutrients increased w/ treated wastewater disposal, non-detectable at the Ocean
- Some traffic assoc. w/ project, no reduction in LOS w/ added LT lane
- Completing the SCP - Positive benefits w/ local businesses, many new jobs & tax revenues
- The project will definitely save local residents some trips to Haleiwa and beyond
- Draft EIS published Thursday, November 23, 2017
- 45-day Comment period - input from the public and agencies
- Due date is Monday, January 8, 2018

Final EIS:
- Respond to comments on the Draft EIS
- Finalize and submit to the Department of Planning and Permitting (DPP) for acceptance.

Special Management Area (SMA) Major Permit process
- Timeline is Spring 2018
- Public Meetings & City Council Process

Ongoing discussions with the Community
- Future Meetings with SBCA to present long-term plan details & address questions
- Future Meetings with the North Shore Neighborhood Board No. 27.

Questions, comments and concerns followed:
1. Parking: Leinau noted concerns with parking and the restriping of Kamehameha Highway exacerbating the situation. He did not see these issues addressed in the Draft EIS. Overton noted that water concerns in the area will improve, including wastewater management. As for the parking, vehicles parked on the makai side of the road will be in violation. The stripe will not be moved on the makai side, but there may be added pavement on the mauka side.
2. Crosswalk: A resident commented on working with DOT to have a crosswalk installed. Overton answered that they have spoken with DOT and have received positive responses on installing a crosswalk.

3. Additional Vehicles: Foo noted that the study shows an addition of upwards of 1300 vehicles and asked how this has been factored into traffic and parking concerns. Overton noted that the number provided is the maximum cars they would expect, and as Overton stated is a "worst case scenario". Studies on the flow of traffic say the level of service will go from an "A" to a "B", which is not a drastic reduction in service. The 1300 car estimate is spread throughout the entire day, and the traffic study paid special attention to this concern. Overton suggested that anyone with detailed questions respond to the EIS so the impacts can be evaluated.
4. Urgent Care: A resident asked if G70 has reached out to Wahiawa General Hospital to run the urgent care facility, and Overton responded that urgent cares are less specialized that hospitals and are generally operated by a private organization.
5. Pahoe Road: Residents of Pahoe Road noted their trepidations about the project and commented that they are cautiously watching with many questions and concerns yet to be addressed, but are content with the process of the project.
6. Cliffs behind Project Site: Shirai noted the cultural importance of the cliffs behind the property, and is worried about trespassing. Overton responded that they are not connected to the coastal mauka, and are roughly 1,000 feet away. Overton mentioned that he does understand the concerns and will look for any possible impacts as the EIS goes through its process.
7. Young Entrepreneurs: A resident noted his support for the project and the opportunities it provides to local entrepreneurs and the community. He commented that he believes the developers are doing their due diligence to work with the community, and noted his hopes for the Board and residents to share in his support.
8. Employees: Andersen asked how many employees will work at the center, and Overton responded that it will be around 85 employees. Andersen voiced concerns about the 100 parking stalls not being enough to accommodate employees and customers. Overton responded that DPP has minimum requirements for the amount of stalls that must be made available, and per the request of the Board, G70 is providing more than the minimum requirement of stalls.
9. Local Business: A resident and business owner in the community commented on the joy he gets from providing jobs to North Shore youth. He commented that parking concerns can be mitigated with alternatives such as biking and carpooling. He mentioned that he will encourage his employees to find alternative means to getting to work instead of driving.
10. Parking Stall Requirements: A resident asked about parking stall requirements for food trucks, and Overton responded that the trucks are included in the project, and that the trucks must move and this is regulated and enforced by the Department of Health (DOH). In Haleiwa, food trucks are allowed to occupy six (6) parking stalls. Three (3) parcels may operate together if they have filed the proper paperwork with the City and County of Honolulu.

Shirai left the meeting at 8:31 p.m.; 10 members present.

11. Elected Officials: Lyons encouraged North Shore legislators to provide input on the project.
12. Food Trucks: A resident noted the food trucks have not moved in months, mentioned concerns about local businesses and that the urgent care will not be successful.
13. Crosswalk: A resident commented that adding a sidewalk would be detrimental and suggested moving it.
14. Noise: Chair Pahinui noted noise concerns for residents behind the shopping center.

Foo moved and Justice seconded that the North Shore Neighborhood Board No. 27 send a copy of the Tuesday, November 28, 2017 draft meeting minutes to G70, the Department of Planning and Permitting (DPP) and Mayor Kirk Caldwell.

The motion PASSED by ROLL CALL VOTE, 10-0-0; (**AYE**: Hirota, Courtenay, Pahinui, Andersen, Philips, Achiu, Justice, Foo, Lyons, Leinau; **NAY**: None; **ABSTAIN**: None).

15. Food Trucks: A resident commented that the picture in the handout depicting the parking lot is inaccurate because it does not illustrate the location of the food trucks and their impact on the parking lot.
16. Hawaii Revised Statute 343 (HRS 343): A representative of Malama Pupukea Waimea asked if the Draft EIS is compliant with HRS 343. She commented on flaws in regards to marine life, traffic impacts and the shared turn lane. Overton responded that this is a Chapter 25 EIS and the documents being prepared are done to the requirements of HRS 343. They would be happy to talk to the community about recreational impacts at the park and noted that this is site is not intended to be a beach parking lot, nor do they want people taking beach parking to access the shopping center. Overton noted that one of the

foremost marine surveyors conducted their survey, and that the shared turning lane is important to the project. The DOT has not provided final approval for the lane, but Overton noted that this is a long process.

17. Crosswalk: Phillips noted concerns with the crosswalk and traffic dangers that could be created.
18. Wastewater: A resident noted concerns about wastewater from the project.
19. Environmental Impacts: Lyons commented that his main concerns are the environmental impacts such as food truck wastewater, parking, and compliance with the Americans with Disabilities Act (ADA).
20. Well Planned: A resident commented that the project looks well thought out.
21. Surface Water: A resident noted concerns with surface water and damage to the marine ecosystem. Overton gave specifics on the attention the project is giving to not harming the surrounding ecosystem.
22. Security: Achiu mentioned concerns for neighbors such as lighting, security, business hours, and the shrubbery creating an area for suspicious activity to occur. Overton responded that they paid attention to these issues and spoke with the neighbors about topics such as lighting concerns. As of now the center is planned to close at 9:00 p.m., but that may change as the project moves forward. In regards to the shrubbery, the foliage will only be placed on the shopping center side.
23. Restrooms: A resident asked if there will be restrooms, and Overton responded that there will be.
24. Businesses: A resident asked if there are businesses already slated to occupy the property and, if so, who are they. A representative from Federal Credit Union, and future occupant in the shopping center, commented that they are happy with the project and the possibilities to serve more customers in the area.
25. Expanding Highway: Leinau commented that space for bicyclists should be preserved and that the majority of the customers at the center will be tourists and mentioned that is not what the sustainable communities plan calls for. He was concerned with what could be done if the center serves more tourists than residents.
26. Tourists: A resident voiced concerns about more tourists and commercialization.
27. Parking: Foo commented that the City's minimum requirement for parking is not enough, and mentioned concerns about the proposed restaurant being too close to residences.
28. Parking and Tourists: A resident commented that parking issues are not going to get better and sees the developers as positive contributors to the community and does not want this project to be halted because of concerns with tourists and parking.
29. Parking Stalls: Senator Gil Riviere commented that he is unhappy that G70 is presenting their parking plans as if it is a generosity on their part, when it seems as though they are just meeting the minimum requirements. Overton apologized and said that he will follow up with a more thorough breakdown of the parking plans.

Next Meeting: The next regular meeting is scheduled for January 23, 2018 at Waialua Elementary School cafeteria at 7:00 p.m. to 9:00 p.m.

ADJOURNMENT: The meeting adjourned at 9:30 p.m.

Submitted by: Aran Wilson, Neighborhood Assistant
Reviewed by: Anela Kekoolani, Neighborhood Assistant
Finalized By: Chair Kathleen Pahinui

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Kathleen Pahinui
Chairperson
North Shore Neighborhood Board #27
Via email: pahinuik001@hawaii.rr.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Pahinui:

Thank you for transmitting the comments of the North Shore Neighborhood Board (NSNB) #27 with your email dated January 4, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project.

We understand from your email that the NSNB submitted the minutes providing the comments and questions raised at its November 28, 2017 meeting with the intention for these to be included as part of the public recovered for the Draft EIS and to secure response from G70/Hanapohaku LLC.

The following responses are offered to the "questions, comments and concerns" section of the meeting minutes following an overview of the presentation given to the Board on the Pupukea Rural Community Commercial Center Draft Environmental Impact Statement:

Comment 1. Parking: *Leinau noted concerns with parking and the restriping of Kamehameha Highway exacerbating the situation. He did not see these issues addressed in the Draft EIS. Overton noted that water concerns in the area will improve, including wastewater management. As for the parking, vehicles parked on the makai side of the road will be in violation. The stripe will not be moved on the makai side, but there may be added pavement on the mauka side.*

Response: *Section 3.13.2* of the EIS states: "A curb and sidewalk will be installed along the project's makai edge and will narrow the existing shoulder width on Kamehameha Highway and eliminating space for illegal parking along the highway fronting the parcels." As a correction the NSNB meeting minutes, the highway road stripe on the makai side of the highway will be moved slightly makai; the existing pavement will not change and the grass shoulder will remain as is.

The purpose of the restriping is to add roadway capacity by forming a center two-way left-turn lane to accommodate additional vehicle trips to the rural center without substantially increasing delays for existing users on Kamehameha Highway. The existing traffic signal will help to provide gaps in traffic on the highway for vehicles turning into and out of the new site driveway and will continue to provide a control for Pūpūkea Road neighborhood traffic (EIS *Section 3.13.2*).

Comment 2. Crosswalk: *A resident commented on working with DOT to have a crosswalk installed. Overton answered that they have spoken with DOT and have received positive responses on installing a crosswalk.*

Response: An additional crosswalk would allow pedestrians and cyclists from communities north of Pūpūkea Beach Park to access the rural community commercial center site from the bike path on the makai side of the highway. Hawai'i Department of Transportation (HDOT) comments provided to the Draft EIS (see Final EIS Chapter 6) state: "The HDOT finds a crosswalk desirable but still has concerns related to pedestrian safety." The project team will continue to coordinate with HDOT to ensure concurrence on the benefits of a crosswalk and the safety features that could be employed. This crosswalk is included in the EIS in *Section 3.19* as an unresolved issue.

Comment 3. Additional Vehicles: *Foo noted that the study shows an addition of upwards of 1300 vehicles and asked how this has been factored into traffic and parking concerns. Overton noted that the number provided is the maximum cars they would expect, and as Overton stated is a "worst case scenario". Studies on the flow of traffic say the level of service will go from an "A" to a "B", which is not a drastic reduction in service. The 1300 car estimate is spread throughout the entire day, and the traffic study paid special attention to this concern. Overton suggested that anyone with detailed questions respond to the EIS so the impacts can be evaluated.*

Response: The 1,300-additional daily "vehicle trips" do not represent the number of additional vehicles on the road, but rather the number of vehicles turning into and exiting the site. Thirty percent of those trips (396) are assumed to be cars already on the road. Therefore, net new vehicle trips because of the project is projected to be 926 daily.

The trips are distributed throughout the day, with the peak hour ("rush hour") and typical mid-day hour projected at an additional 65 additional turns during those hours (29 vehicles turning in, and 36 exiting the site). Saturday trips are projected to be slightly higher with 98 midday trips (51 turning in, and 47 exiting the site). So, the actual number of vehicles would be approximately half the net new vehicle trips.

Comment 4. Urgent Care: *A resident asked if G70 has reached out to Wahiawa General Hospital to run the urgent care facility, and Overton responded that urgent cares are less specialized that hospitals and are generally operated by a private organization.*

Response: G70 representative Jeff Overton responded to this question at the meeting, as reflected in the comment. Typically, urgent care facilities are operated by private organizations.

Comment 5. Pahoe Road: *Residents of Pahoe Road noted their trepidations about the project and commented that they are cautiously watching with many questions and concerns yet to be addressed, but are content with the process of the project.*

Response: During the North Shore Neighborhood Board meeting, the representative for the Pāhoe Road residents, John Thielst, noted that Hanapohaku and its consultant, G70, had met with the residents and acknowledged concerns about access along the privately-owned

and maintained road. In response to the residents' concern, the project has been designed for no access along Pāhoe Road, and that a fence will be constructed to prevent pedestrian pass-through and thereby discourage parking along Pāhoe Road.

Comment 6. Cliffs behind Project Site: *Shirai noted the cultural importance of the cliffs behind the property, and is worried about trespassing. Overton responded that they are not connected to the coastal mauka, and are roughly 1,000 feet away. Overton mentioned that he does understand the concerns and will look for any possible impacts as the EIS goes through its process.*

Response: G70 representative Jeff Overton responded to this question at the meeting, as reflected in the comment, above. No additional comments were received related to this issue during the Draft ES public comment period.

Comment 7. Young Entrepreneurs: *A resident noted his support for the project and the opportunities it provides to local entrepreneurs and the community. He commented that he believes the developers are doing their due diligence to work with the community, and noted his hopes for the Board and residents to share in his support.*

Response: As noted in the EIS, *Section 2.3 Purpose and Need*, the rural center will support local businesses from the North Shore and Hawai'i, emphasizing the value the landowner places on benefits to the community and fostering a home-grown sense of entrepreneurship.

Comment 8. Employees: *Andersen asked how many employees will work at the center, and Overton responded that it will be around 85 employees. Andersen voiced concerns about the 100 parking stalls not being enough to accommodate employees and customers. Overton responded that DPP has minimum requirements for the amount of stalls that must be made available, and per the request of the Board, G70 is providing more than the minimum requirement of stalls.*

Response: The estimate of 86 long-term jobs created by the project has been updated in the Final EIS as 80 long-term jobs. The number represents the total jobs created; it does not represent the number of employees on site at any one time. The number of parking spaces to be provided will meet the requirements under the Land Use Ordinance (LUO), Revised Ordinances of Honolulu, Chapter 21. Additional spaces will be provided in accordance with anticipated parking needs associated with food trucks.

Comment 9. Local Business: *A resident and business owner in the community commented on the joy he gets from providing jobs to North Shore youth. He commented that parking concerns can be mitigated with alternatives such as biking and carpooling. He mentioned that he will encourage his employees to find alternative means to getting to work instead of driving.*

Response: Note the previous response expressing the landowner's goal to foster local entrepreneurship. The center will create a place where local businesses can serve the Sunset Beach-Pūpūkea community and its visitors. Business and employment opportunities for area residents will provide additional jobs within the community and help some avoid long commutes to job centers in urban areas of O'ahu.

Comment 10. Parking Stall Requirements: *A resident asked about parking stall requirements for food trucks, and Overton responded that the trucks are included in the project, and that the trucks must move and this is regulated and enforced by the Department of Health (DOH). In Haleiwa, food trucks are allowed to occupy six (6) parking stalls. Three (3) parcels may operate together if they have filed the proper paperwork with the City and County of Honolulu.*

Response: While City land use regulations for food trucks have not yet been finalized, we are working with the City Department of Planning and Permitting (DPP) to anticipate the future requirements. As noted, six spaces per food truck are required for the Haleiwa Special District; the total parking provided for the project includes 36 spaces to accommodate up to six food trucks.

Comment 11. Elected Officials: *Lyons encouraged North Shore legislators to provide input on the project.*

Response: Gil Riviere (Senator, District 23) provided comments to the Draft EIS. Both his letter and the responses to his comments can be found in Chapter 6 of the Final EIS.

Comment 12. Food Trucks: *A resident noted the food trucks have not moved in months, mentioned concerns about local businesses and that the urgent care will not be successful.*

Response: Hanapohaku is committed to enforcing compliance with all regulations and has notified all tenants that operations at the site must also comply.

Comment 13. Crosswalk: *A resident commented that adding a sidewalk would be detrimental and suggested moving it.*

Response: Please see the response to Comment #2. The project team will continue to coordinate with HDOT to ensure concurrence on the benefits of a crosswalk, and the safety features that could be employed.

Comment 14. Noise: *Chair Pahinui noted noise concerns for residents behind the shopping center.*

Response: *Section 3.15* of the EIS includes an analysis of short-term construction noise and long-term operational noise and potential impacts relative to the State Department of Health, Hawai'i Administrative Rules §11-46 Community Noise Control. Long-term operational noise will be minimized through design of the buildings on the north and east sides of the project. The building design will utilize fixed windows on the exterior wall on the Pāhoe Road side and provide enclosed interior air-conditioned space. The restaurant will be acoustically designed to reduce exterior noise levels to 45 dBA or less at the closest residence. To minimize potential noise from delivery trucks, such as that of back-up alarms, deliveries to the commercial establishments during nighttime or early morning hours will be avoided. Daytime and nighttime noise limits of the State DOH will be strictly enforced at the property.

Comment 15. Food Trucks: *A resident commented that the picture in the handout depicting the parking lot is inaccurate because it does not illustrate the location of the food trucks and their impact on the parking lot.*

Response: The Draft EIS *Figure 2-6* illustrated the initial proposed location of food trucks. The site plan for the project has been updated, and *Figure 2-6* in the Final EIS depicts the locations to be utilized by food trucks.

Comment 16. Hawaii Revised Statute 343 (HRS 343): *A representative of Malama Pupukea Waimea asked if the Draft EIS is compliant with HRS 343. She commented on flaws in regards to marine life, traffic impacts and the shared turn lane. Overton responded that this is a Chapter 25 EIS and the documents being prepared are done to the requirements of HRS 343. They would be happy to talk to the community about recreational impacts at the park and noted that this is site is not intended to be a beach parking lot, nor do they want people taking beach parking to access the shopping center. Overton noted that one of the foremost marine surveyors conducted their survey, and that the shared turning lane is important to the project. The DOT has not provided final approval for the lane, but Overton noted that this is a long process.*

Response: Chapter 25 ROH, Special Management Area, states: "Any proposed development within the special management area requiring a special management area use permit shall be subject to an assessment by the agency in accordance with the procedural steps set forth in HRS Chapter 343." Procedurally, Section 25-4.2 of Chapter 25 ROH states that the director shall adhere to the procedures set forth in HRS Chapter 343, and the regulations adopted thereunder by the environmental quality commission. Finally, Chapter 25 ROH defines an EIS as: "EIS means an informational document prepared in compliance with the environmental quality commission's rules and regulations implementing HRS Chapter 343". (Emphasis added.) Hawai'i Administrative Rules Chapter 11-200, Environmental Impact Statement Rules, are the implementing rules of Chapter 343 HRS.

The EIS states that the document was prepared pursuant to Revised Ordinances of Honolulu (ROH) Chapter 25, Special Management Area and consistent with Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health Environmental Impact Statement Rules (emphasis added). Refer to: EIS cover page; *Section 1.2 Introduction*, *Section 4.2.1 Environmental Impact Statements, Hawaii Revised Statutes Chapter 343*, *Section 4.3.1 Chapter 25, Revised Ordinances of Honolulu*, and *Chapter 6.0 Agencies and Parties Consulted*.

Comment 17. *Crosswalk: Phillips noted concerns with the crosswalk and traffic dangers that could be created.*

Response: Please see response to Comment #2 regarding a potential crosswalk.

Comment 18. *Wastewater: A resident noted concerns about wastewater from the project.*

Response: The rural center will utilize a highly advanced wastewater treatment process that will employ aeration and separation of waste with additional ground treatment through absorption beds. The absorption bed disposal system will be double the required size for 100 percent redundancy. The aerobic treatment system provides a secondary treatment process for environmental protection that can obtain an appropriate effluent quality and is recommended by wastewater and groundwater engineers and the State Department of Health Wastewater Branch.

The system represents a model approach to wastewater management in this sensitive coastal environment which is already affected by human waste inputs. There are over 500 onsite wastewater disposal systems (cesspool and septic systems) serving homes in Pūpūkea and Sunset Beach upgradient from the project site. These existing residential wastewater systems release a total wastewater volume in excess of 100,000 GPD into the groundwater upgradient of the rural center property, all of which ultimately reaches the ocean. The rural center will have a low volume and high quality on-site wastewater treatment system employing ground disposal demonstrating the highest level of sensitivity to this important concern of protecting nearshore water quality.

Comment 19. *Environmental Impacts: Lyons commented that his main concerns are the environmental impacts such as food truck wastewater, parking, and compliance with the Americans with Disabilities Act (ADA).*

Response: State Department of Health rules require food truck wastewater is be required to have liquid wastes removed at an approved waste servicing area or by a licensed commercial pumping contractor (EIS *Section 3.16.2*). Comment #10 (above) provides the response to the parking comment. ADA-compliant parking is indicated on *Figure 3-8* in the Final EIS, with designated ADA-compliant paths marked to traverse to/from Foodland. A 5-foot wide pedestrian path will be provided along Kamehameha Highway and extend across the Foodland parcel for improved connectivity to the signalized crosswalk and bus stops.

Comment 20. *Well Planned: A resident commented that the project looks well thought out.*

Response: Hanapohaku seeks to create a place where local businesses can conduct operations to serve the Sunset Beach-Pūpūkea community and its visitors. The Rural Community Commercial Center will be created with a focus on sustainable principles, consistent with the guidelines of the North Shore Sustainable Communities Plan.

Comment 21. *Surface Water: A resident noted concerns with surface water and damage to the marine ecosystem. Overton gave specifics on the attention the project is giving to not harming the surrounding ecosystem.*

Response: The EIS provides a projection of the potential project inputs of suspended sediment and urban runoff contaminants to groundwater quality at the property. The EIS analyses in *Section 3.6.2* and *Section 3.16.2* state: The installation of LID BMPs, including subsurface storm water detention on the three parcels will substantially reduce the suspended and bedload sediment that is currently carried into the marine environments by surface runoff. The detention storage will also reduce both the volume and flow rate of storm water from the parcels. For more frequent, small storm events with rainfall amounts of up to four inches, all of the runoff would be retained in the detention storage system and eventually percolate back to groundwater. With this improvement in surface runoff water quality, the EIS found no potential for adverse effects to near shore ocean water quality due to suspended sediment and urban runoff contaminants.

Comment 22. Security: *Achiu mentioned concerns for neighbors such as lighting, security, business hours, and the shrubbery creating an area for suspicious activity to occur. Overton responded that they paid attention to these issues and spoke with the neighbors about topics*

such as lighting concerns. As of now the center is planned to close at 9:00 p.m., but that may change as the project moves forward. In regards to the shrubbery, the foliage will only be placed on the shopping centerside.

Response: The LUO requires a 10-foot building setback along Pāhoe Road adjacent to the R-5 zoned section of Pāhoe Rd. There will be a fence or wall erected at the setback, with some limited landscape planting on the Pāhoe Road side. Mauka of this section, the project adjoins Country zoned land on Pāhoe Road, and the fence or wall will be set at the property line. Landscaping will be planted inside the fence/wall along this mauka section.

Comment 23. Restrooms: *A resident asked if there will be restrooms, and Overton responded that there will be.*

Response: Restrooms will be located in the mauka end of the North Building.

Comment 24. Businesses: *A resident asked if there are businesses already slated to occupy the property and, if so, who are they. A representative from Federal Credit Union, and future occupant in the shopping center, commented that they are happy with the project and the possibilities to serve more customers in the area.*

Response: The owners of the rural center have prioritized local Hawai'i based businesses for the leasing of tenant spaces, particularly those with North Shore roots. The specific businesses committed with letter of intent for the rural center include Waialua Federal Credit Union, Island Urgent Care, North Shore Surf Shop, Seamaids, The Spot, North Shore Tacos and others are in discussion. These are all Hawai'i based enterprises, with some from the North Shore community.

Comment 25. Expanding Highway: *Leinau commented that space for bicyclists should be preserved and that the majority of the customers at the center will be tourists and mentioned that is not what the sustainable communities plan calls for. He was concerned with what could be done if the center serves more tourists than residents.*

Response: The project will not affect the existing bike path on the makai side of Kamehameha Highway, and proposes a crosswalk near Pāhoe Road to allow pedestrians and cyclists from communities north of Pūpūkea Beach Park to access the rural community commercial center site from the bike path on the makai side of the highway. Bicycle parking will be provided at the rural community commercial center, and a 5-foot wide pedestrian path will be installed along the entire frontage from Pāhoe Road to Pūpūkea Road. While not a bike lane, the path will allow bicyclists to walk with a bicycles along the path.

The increase in visitor numbers over the past decade State- and island-wide is well documented by multiple sources and are not attributable to a single development. The rural community commercial center will support the same communities as Foodland, and visitors from other communities on O'ahu or from out-of-state that come to see the famed North Shore beaches and snorkel the popular Sharks Cove.

Comment 26. Tourists: *A resident voiced concerns about more tourists and commercialization.*

Response: Please see response to the previous comment.

Comment 27. Parking: *Foo commented that the City's minimum requirement for parking is not enough, and mentioned concerns about the proposed restaurant being too close to residences.*

Response: The project will meet all City and State requirements including parking and setbacks. Please see response to Comment #14 for information on noise minimization.

Comment 28. Parking and Tourists: *A resident commented that parking issues are not going to get better and sees the developers as positive contributors to the community and does not want this project to be halted because of concerns with tourists and parking.*

Response: The owners of the rural center have prioritized local Hawai'i-based businesses for the leasing of tenant spaces, particularly those with North Shore roots. The specific businesses committed with letter of intent for the rural center include Waialua Federal Credit Union, Island Urgent Care, North Shore Surf Shop, Seamaids, The Spot, North Shore Tacos and others are in discussion. These are all Hawai'i-based enterprises, with some from the North Shore community.

Comment 29. Parking Stalls: *Senator Gil Riviere commented that he is unhappy that G70 is presenting their parking plans as if it is a generosity on their part, when it seems as though they are just meeting the minimum requirements. Overton apologized and said that he will follow up with a more thorough breakdown of the parking plans.*

Response: Please see the response to Comment #10. City land use regulations for food trucks have not yet been finalized, while the LUO has not yet codified the space required, we are working with the City Department of Planning and Permitting (DPP) to anticipate the future requirements. Six stalls per food truck are required for Hale'iwa, thus the total parking count for the project includes 36 stalls lot to accommodate up to six food truck.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Kathleen Pahinui
Chairperson
North Shore Neighborhood Board #27
Via email: pahinuik001@hawaii.rr.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Pahinui:

Thank you for transmitting the comments of the North Shore Neighborhood Board (NSNB) #27 with your email dated January 4, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project.

We understand from your email that the NSNB submitted the minutes providing the comments and questions raised at its November 28, 2017 meeting with the intention for these to be included as part of the public recovered for the Draft EIS and to secure response from G70/Hanapohaku LLC.

The following responses are offered to the "questions, comments and concerns" section of the meeting minutes following an overview of the presentation given to the Board on the Pupukea Rural Community Commercial Center Draft Environmental Impact Statement:

Comment 1. Parking: *Leinau noted concerns with parking and the restriping of Kamehameha Highway exacerbating the situation. He did not see these issues addressed in the Draft EIS. Overton noted that water concerns in the area will improve, including wastewater management. As for the parking, vehicles parked on the makai side of the road will be in violation. The stripe will not be moved on the makai side, but there may be added pavement on the mauka side.*

Response: *Section 3.13.2* of the EIS states: "A curb and sidewalk will be installed along the project's makai edge and will narrow the existing shoulder width on Kamehameha Highway and eliminating space for illegal parking along the highway fronting the parcels." As a correction the NSNB meeting minutes, the highway road stripe on the makai side of the highway will be moved slightly makai; the existing pavement will not change and the grass shoulder will remain as is.

The purpose of the restriping is to add roadway capacity by forming a center two-way left-turn lane to accommodate additional vehicle trips to the rural center without substantially increasing delays for existing users on Kamehameha Highway. The existing traffic signal will help to provide gaps in traffic on the highway for vehicles turning into and out of the new site driveway and will continue to provide a control for Pūpūkea Road neighborhood traffic (EIS *Section 3.13.2*).

Comment 2. Crosswalk: *A resident commented on working with DOT to have a crosswalk installed. Overton answered that they have spoken with DOT and have received positive responses on installing a crosswalk.*

Response: An additional crosswalk would allow pedestrians and cyclists from communities north of Pūpūkea Beach Park to access the rural community commercial center site from the bike path on the makai side of the highway. Hawai'i Department of Transportation (HDOT) comments provided to the Draft EIS (see Final EIS Chapter 6) state: "The HDOT finds a crosswalk desirable but still has concerns related to pedestrian safety." The project team will continue to coordinate with HDOT to ensure concurrence on the benefits of a crosswalk and the safety features that could be employed. This crosswalk is included in the EIS in *Section 3.19* as an unresolved issue.

Comment 3. Additional Vehicles: *Foo noted that the study shows an addition of upwards of 1300 vehicles and asked how this has been factored into traffic and parking concerns. Overton noted that the number provided is the maximum cars they would expect, and as Overton stated is a "worst case scenario". Studies on the flow of traffic say the level of service will go from an "A" to a "B", which is not a drastic reduction in service. The 1300 car estimate is spread throughout the entire day, and the traffic study paid special attention to this concern. Overton suggested that anyone with detailed questions respond to the EIS so the impacts can be evaluated.*

Response: The 1,300-additional daily "vehicle trips" do not represent the number of additional vehicles on the road, but rather the number of vehicles turning into and exiting the site. Thirty percent of those trips (396) are assumed to be cars already on the road. Therefore, net new vehicle trips because of the project is projected to be 926 daily.

The trips are distributed throughout the day, with the peak hour ("rush hour") and typical mid-day hour projected at an additional 65 additional turns during those hours (29 vehicles turning in, and 36 exiting the site). Saturday trips are projected to be slightly higher with 98 midday trips (51 turning in, and 47 exiting the site). So, the actual number of vehicles would be approximately half the net new vehicle trips.

Comment 4. Urgent Care: *A resident asked if G70 has reached out to Wahiawa General Hospital to run the urgent care facility, and Overton responded that urgent cares are less specialized that hospitals and are generally operated by a private organization.*

Response: G70 representative Jeff Overton responded to this question at the meeting, as reflected in the comment. Typically, urgent care facilities are operated by private organizations.

Comment 5. Pahoe Road: *Residents of Pahoe Road noted their trepidations about the project and commented that they are cautiously watching with many questions and concerns yet to be addressed, but are content with the process of the project.*

Response: During the North Shore Neighborhood Board meeting, the representative for the Pāhoe Road residents, John Thielst, noted that Hanapohaku and its consultant, G70, had met with the residents and acknowledged concerns about access along the privately-owned

and maintained road. In response to the residents' concern, the project has been designed for no access along Pāhoe Road, and that a fence will be constructed to prevent pedestrian pass-through and thereby discourage parking along Pāhoe Road.

Comment 6. Cliffs behind Project Site: *Shirai noted the cultural importance of the cliffs behind the property, and is worried about trespassing. Overton responded that they are not connected to the coastal mauka, and are roughly 1,000 feet away. Overton mentioned that he does understand the concerns and will look for any possible impacts as the EIS goes through its process.*

Response: G70 representative Jeff Overton responded to this question at the meeting, as reflected in the comment, above. No additional comments were received related to this issue during the Draft ES public comment period.

Comment 7. Young Entrepreneurs: *A resident noted his support for the project and the opportunities it provides to local entrepreneurs and the community. He commented that he believes the developers are doing their due diligence to work with the community, and noted his hopes for the Board and residents to share in his support.*

Response: As noted in the EIS, *Section 2.3 Purpose and Need*, the rural center will support local businesses from the North Shore and Hawai'i, emphasizing the value the landowner places on benefits to the community and fostering a home-grown sense of entrepreneurship.

Comment 8. Employees: *Andersen asked how many employees will work at the center, and Overton responded that it will be around 85 employees. Andersen voiced concerns about the 100 parking stalls not being enough to accommodate employees and customers. Overton responded that DPP has minimum requirements for the amount of stalls that must be made available, and per the request of the Board, G70 is providing more than the minimum requirement of stalls.*

Response: The estimate of 86 long-term jobs created by the project has been updated in the Final EIS as 80 long-term jobs. The number represents the total jobs created; it does not represent the number of employees on site at any one time. The number of parking spaces to be provided will meet the requirements under the Land Use Ordinance (LUO), Revised Ordinances of Honolulu, Chapter 21. Additional spaces will be provided in accordance with anticipated parking needs associated with food trucks.

Comment 9. Local Business: *A resident and business owner in the community commented on the joy he gets from providing jobs to North Shore youth. He commented that parking concerns can be mitigated with alternatives such as biking and carpooling. He mentioned that he will encourage his employees to find alternative means to getting to work instead of driving.*

Response: Note the previous response expressing the landowner's goal to foster local entrepreneurship. The center will create a place where local businesses can serve the Sunset Beach-Pūpūkea community and its visitors. Business and employment opportunities for area residents will provide additional jobs within the community and help some avoid long commutes to job centers in urban areas of O'ahu.

Comment 10. Parking Stall Requirements: *A resident asked about parking stall requirements for food trucks, and Overton responded that the trucks are included in the project, and that the trucks must move and this is regulated and enforced by the Department of Health (DOH). In Haleiwa, food trucks are allowed to occupy six (6) parking stalls. Three (3) parcels may operate together if they have filed the proper paperwork with the City and County of Honolulu.*

Response: While City land use regulations for food trucks have not yet been finalized, we are working with the City Department of Planning and Permitting (DPP) to anticipate the future requirements. As noted, six spaces per food truck are required for the Haleiwa Special District; the total parking provided for the project includes 36 spaces to accommodate up to six food trucks.

Comment 11. Elected Officials: *Lyons encouraged North Shore legislators to provide input on the project.*

Response: Gil Riviere (Senator, District 23) provided comments to the Draft EIS. Both his letter and the responses to his comments can be found in Chapter 6 of the Final EIS.

Comment 12. Food Trucks: *A resident noted the food trucks have not moved in months, mentioned concerns about local businesses and that the urgent care will not be successful.*

Response: Hanapohaku is committed to enforcing compliance with all regulations and has notified all tenants that operations at the site must also comply.

Comment 13. Crosswalk: *A resident commented that adding a sidewalk would be detrimental and suggested moving it.*

Response: Please see the response to Comment #2. The project team will continue to coordinate with HDOT to ensure concurrence on the benefits of a crosswalk, and the safety features that could be employed.

Comment 14. Noise: *Chair Pahinui noted noise concerns for residents behind the shopping center.*

Response: *Section 3.15* of the EIS includes an analysis of short-term construction noise and long-term operational noise and potential impacts relative to the State Department of Health, Hawai'i Administrative Rules §11-46 Community Noise Control. Long-term operational noise will be minimized through design of the buildings on the north and east sides of the project. The building design will utilize fixed windows on the exterior wall on the Pāhoe Road side and provide enclosed interior air-conditioned space. The restaurant will be acoustically designed to reduce exterior noise levels to 45 dBA or less at the closest residence. To minimize potential noise from delivery trucks, such as that of back-up alarms, deliveries to the commercial establishments during nighttime or early morning hours will be avoided. Daytime and nighttime noise limits of the State DOH will be strictly enforced at the property.

Comment 15. Food Trucks: *A resident commented that the picture in the handout depicting the parking lot is inaccurate because it does not illustrate the location of the food trucks and their impact on the parking lot.*

Response: The Draft EIS *Figure 2-6* illustrated the initial proposed location of food trucks. The site plan for the project has been updated, and *Figure 2-6* in the Final EIS depicts the locations to be utilized by food trucks.

Comment 16. Hawaii Revised Statute 343 (HRS 343): *A representative of Malama Pupukea Waimea asked if the Draft EIS is compliant with HRS 343. She commented on flaws in regards to marine life, traffic impacts and the shared turn lane. Overton responded that this is a Chapter 25 EIS and the documents being prepared are done to the requirements of HRS 343. They would be happy to talk to the community about recreational impacts at the park and noted that this is site is not intended to be a beach parking lot, nor do they want people taking beach parking to access the shopping center. Overton noted that one of the foremost marine surveyors conducted their survey, and that the shared turning lane is important to the project. The DOT has not provided final approval for the lane, but Overton noted that this is a long process.*

Response: Chapter 25 ROH, Special Management Area, states: "Any proposed development within the special management area requiring a special management area use permit shall be subject to an assessment by the agency in accordance with the procedural steps set forth in HRS Chapter 343." Procedurally, Section 25-4.2 of Chapter 25 ROH states that the director shall adhere to the procedures set forth in HRS Chapter 343, and the regulations adopted thereunder by the environmental quality commission. Finally, Chapter 25 ROH defines an EIS as: "EIS means an informational document prepared in compliance with the environmental quality commission's rules and regulations implementing HRS Chapter 343". (Emphasis added.) Hawai'i Administrative Rules Chapter 11-200, Environmental Impact Statement Rules, are the implementing rules of Chapter 343 HRS.

The EIS states that the document was prepared pursuant to Revised Ordinances of Honolulu (ROH) Chapter 25, Special Management Area and consistent with Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health Environmental Impact Statement Rules (emphasis added). Refer to: EIS cover page; *Section 1.2 Introduction*, *Section 4.2.1 Environmental Impact Statements, Hawaii Revised Statutes Chapter 343*, *Section 4.3.1 Chapter 25, Revised Ordinances of Honolulu*, and *Chapter 6.0 Agencies and Parties Consulted*.

Comment 17. *Crosswalk: Phillips noted concerns with the crosswalk and traffic dangers that could be created.*

Response: Please see response to Comment #2 regarding a potential crosswalk.

Comment 18. *Wastewater: A resident noted concerns about wastewater from the project.*

Response: The rural center will utilize a highly advanced wastewater treatment process that will employ aeration and separation of waste with additional ground treatment through absorption beds. The absorption bed disposal system will be double the required size for 100 percent redundancy. The aerobic treatment system provides a secondary treatment process for environmental protection that can obtain an appropriate effluent quality and is recommended by wastewater and groundwater engineers and the State Department of Health Wastewater Branch.

The system represents a model approach to wastewater management in this sensitive coastal environment which is already affected by human waste inputs. There are over 500 onsite wastewater disposal systems (cesspool and septic systems) serving homes in Pūpūkea and Sunset Beach upgradient from the project site. These existing residential wastewater systems release a total wastewater volume in excess of 100,000 GPD into the groundwater upgradient of the rural center property, all of which ultimately reaches the ocean. The rural center will have a low volume and high quality on-site wastewater treatment system employing ground disposal demonstrating the highest level of sensitivity to this important concern of protecting nearshore water quality.

Comment 19. *Environmental Impacts: Lyons commented that his main concerns are the environmental impacts such as food truck wastewater, parking, and compliance with the Americans with Disabilities Act (ADA).*

Response: State Department of Health rules require food truck wastewater is be required to have liquid wastes removed at an approved waste servicing area or by a licensed commercial pumping contractor (EIS *Section 3.16.2*). Comment #10 (above) provides the response to the parking comment. ADA-compliant parking is indicated on *Figure 3-8* in the Final EIS, with designated ADA-compliant paths marked to traverse to/from Foodland. A 5-foot wide pedestrian path will be provided along Kamehameha Highway and extend across the Foodland parcel for improved connectivity to the signalized crosswalk and bus stops.

Comment 20. *Well Planned: A resident commented that the project looks well thought out.*

Response: Hanapohaku seeks to create a place where local businesses can conduct operations to serve the Sunset Beach-Pūpūkea community and its visitors. The Rural Community Commercial Center will be created with a focus on sustainable principles, consistent with the guidelines of the North Shore Sustainable Communities Plan.

Comment 21. *Surface Water: A resident noted concerns with surface water and damage to the marine ecosystem. Overton gave specifics on the attention the project is giving to not harming the surrounding ecosystem.*

Response: The EIS provides a projection of the potential project inputs of suspended sediment and urban runoff contaminants to groundwater quality at the property. The EIS analyses in *Section 3.6.2* and *Section 3.16.2* state: The installation of LID BMPs, including subsurface storm water detention on the three parcels will substantially reduce the suspended and bedload sediment that is currently carried into the marine environments by surface runoff. The detention storage will also reduce both the volume and flow rate of storm water from the parcels. For more frequent, small storm events with rainfall amounts of up to four inches, all of the runoff would be retained in the detention storage system and eventually percolate back to groundwater. With this improvement in surface runoff water quality, the EIS found no potential for adverse effects to near shore ocean water quality due to suspended sediment and urban runoff contaminants.

Comment 22. Security: *Achiu mentioned concerns for neighbors such as lighting, security, business hours, and the shrubbery creating an area for suspicious activity to occur. Overton responded that they paid attention to these issues and spoke with the neighbors about topics*

such as lighting concerns. As of now the center is planned to close at 9:00 p.m., but that may change as the project moves forward. In regards to the shrubbery, the foliage will only be placed on the shopping centerside.

Response: The LUO requires a 10-foot building setback along Pāhoe Road adjacent to the R-5 zoned section of Pāhoe Rd. There will be a fence or wall erected at the setback, with some limited landscape planting on the Pāhoe Road side. Mauka of this section, the project adjoins Country zoned land on Pāhoe Road, and the fence or wall will be set at the property line. Landscaping will be planted inside the fence/wall along this mauka section.

Comment 23. Restrooms: *A resident asked if there will be restrooms, and Overton responded that there will be.*

Response: Restrooms will be located in the mauka end of the North Building.

Comment 24. Businesses: *A resident asked if there are businesses already slated to occupy the property and, if so, who are they. A representative from Federal Credit Union, and future occupant in the shopping center, commented that they are happy with the project and the possibilities to serve more customers in the area.*

Response: The owners of the rural center have prioritized local Hawai'i based businesses for the leasing of tenant spaces, particularly those with North Shore roots. The specific businesses committed with letter of intent for the rural center include Waialua Federal Credit Union, Island Urgent Care, North Shore Surf Shop, Seamaids, The Spot, North Shore Tacos and others are in discussion. These are all Hawai'i based enterprises, with some from the North Shore community.

Comment 25. Expanding Highway: *Leinau commented that space for bicyclists should be preserved and that the majority of the customers at the center will be tourists and mentioned that is not what the sustainable communities plan calls for. He was concerned with what could be done if the center serves more tourists than residents.*

Response: The project will not affect the existing bike path on the makai side of Kamehameha Highway, and proposes a crosswalk near Pāhoe Road to allow pedestrians and cyclists from communities north of Pūpūkea Beach Park to access the rural community commercial center site from the bike path on the makai side of the highway. Bicycle parking will be provided at the rural community commercial center, and a 5-foot wide pedestrian path will be installed along the entire frontage from Pāhoe Road to Pūpūkea Road. While not a bike lane, the path will allow bicyclists to walk with a bicycles along the path.

The increase in visitor numbers over the past decade State- and island-wide is well documented by multiple sources and are not attributable to a single development. The rural community commercial center will support the same communities as Foodland, and visitors from other communities on O'ahu or from out-of-state that come to see the famed North Shore beaches and snorkel the popular Sharks Cove.

Comment 26. Tourists: *A resident voiced concerns about more tourists and commercialization.*

Response: Please see response to the previous comment.

Comment 27. Parking: *Foo commented that the City's minimum requirement for parking is not enough, and mentioned concerns about the proposed restaurant being too close to residences.*

Response: The project will meet all City and State requirements including parking and setbacks. Please see response to Comment #14 for information on noise minimization.

Comment 28. Parking and Tourists: *A resident commented that parking issues are not going to get better and sees the developers as positive contributors to the community and does not want this project to be halted because of concerns with tourists and parking.*

Response: The owners of the rural center have prioritized local Hawai'i-based businesses for the leasing of tenant spaces, particularly those with North Shore roots. The specific businesses committed with letter of intent for the rural center include Waialua Federal Credit Union, Island Urgent Care, North Shore Surf Shop, Seamaids, The Spot, North Shore Tacos and others are in discussion. These are all Hawai'i-based enterprises, with some from the North Shore community.

Comment 29. Parking Stalls: *Senator Gil Riviere commented that he is unhappy that G70 is presenting their parking plans as if it is a generosity on their part, when it seems as though they are just meeting the minimum requirements. Overton apologized and said that he will follow up with a more thorough breakdown of the parking plans.*

Response: Please see the response to Comment #10. City land use regulations for food trucks have not yet been finalized, while the LUO has not yet codified the space required, we are working with the City Department of Planning and Permitting (DPP) to anticipate the future requirements. Six stalls per food truck are required for Hale'iwa, thus the total parking count for the project includes 36 stalls lot to accommodate up to six food truck.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

Save Sunset Beach Coalition
DBA: Save Sharks Cove Coalition
P.O. Box 301
Haleiwa, HI 96712
savesharkscovecoalition@gmail.com

January 7, 2018
Ardis Shaw-Kim, (808) 768-8021, ashaw@honolulu.gov
Andrew Yani, (808) 779-5733, hanapohakullc@gmail.com
Jeff Overton, AICP LEED AP, (808) 523-5866, pupukea@g70.design

Re: Pūpūkea Rural Community Commercial Center DRAFT EIS RESPONSE
regarding: TMK(s) (1) 5-9-011:068, 069, 070, 016

Applicant or Proposing Agency
Hanapohaku LLC, 526 Ahina St., Honolulu, HI 96816
Andrew Yani (808) 779-5733 hanapohakullc@gmail.com

Consultant:
G70, 925 Bethel Street, 5th Floor, Honolulu, HI 96813
Jeff Overton AICP LEED AP (808) 523-5866 pupukea@g70.design

Approving Agency or Accepting Authority:
Department of Planning and Permitting
650 South King Street, 7th Floor Honolulu, HI 96816
Ardis Shaw-Kim, 768-8021, ashaw@honolulu.gov

Dear Ms. Shaw-Kim, Mr. Yani, and Mr. Overton,

First of ALL we want to request that the Approving Agency: Department of Planning and Permitting to require the applicant: Honopahaku LLC to settle its OUTSTANDING ACCRUED fine with the City & County of Honolulu, BEFORE a full review of the Draft EIS application.

Additionally, the VIOLATIONS noted in the Notice of Order & the Notice of Violation must be resolved, BEFORE a full review of the Draft EIS application.

Regarding our organization, Save Sharks Cove Coalition, we NEVER received notification of this DEIS by U.S. Mail or by email [we have checked our records; please make sure to send notification on future document releases to the information shown on our masthead above]. We are shown in the document as having been sent a letter by G70 (Jeff Overton) that supposedly CC:'s our email address.

We are very concerned that the DRAFT EIS avoids showing the REAL impacts of the project. The DRAFT EIS attempts to use outdated and intentionally

obfuscated study data as well as non-relevant study data, using consultants who have a track record of evading release of relevant data necessary to fully understand impacts. We are insisting that the consultant stop evading the core element of the controversy of this project and concede that an unacceptable cluster of food trucks imposes a significant risk to the sensitive ecosystem adjacent to the site.

This project clearly is demographically catering to OVER 70% visiting tourists, and therefore, It does NOT comply with the Rural Community Commercial Center design in the North Shore Sustainable Communities.

This Draft EIS clearly is deficient in showing the TRUE significant adverse environmental, hydrological, traffic and neighborhood impacts as well as irreversible ecological effects on the adjacent aquatic environments. We find that the consultants and the authors of the Draft EIS selectively omitted data on the project by using faulty assumptions and faulty modeling.

Furthermore, the omitted data prevents a full understanding of the significant impacts, which would become irreversible if the project is approved as currently described on the very special areas adjacent to the project.

Additionally, certain proposed changes in the Draft EIS and based on the presentation by G70 Representative Jeff Overton may trigger a completely NEW EIS application.

The series of questions will be included in a contributor sequence:

Questions and Critical comments from Neighbors [on Pahoe Road] that were shared with our organization:

1. The EIS shows a fence along the Sunset side of the project with no ingress to or from Pahoe road. The developer has also committed and promised that this will remain as part of the project plan. If removed the whole EIS process must start over.

2. The Pahoe Road Hui is also very concerned about the impact from the noise, lights and spill over from the business closest to the road and feel these issued must be mitigated prior to final approval and permitting.

3. While spill over traffic from the project has slowed somewhat there is still a significant amount of traffic that comes up Pahoe road looking for

access to the project area and has to turn around in owners drives ways etc. Pahoe road is privately owned where many children play and the additional traffic is a potential for pedestrians to be impacted.

4. Appendix F Traffic Impact Analysis Report page 35 graph [table 7] shows traffic going from A to C & D conditions along Kam hwy from Pupukea road through Pahoe road in both directions. This is very unacceptable for the local community in general.
   The report also uses the 2010 HCM Highway capacity model. Though this might work on the mainland and in the city like Honolulu, the NS is a rural area with big surf, tourist long weekends good beach days which are all local conditions that these models cannot account for.

5. This traffic report admits more traffic will be generated from the project and claims “No Significant Impact” the traffic is terrible now, so how can adding more vehicles no be an “Significant Impact” to the roads, local community and pedestrians?

General Comments and questions:

1. In the water use and waste water sections it says average water use will be 8160gpd and max of 12240 gpd. Most of this might be waste of some sort and the design flow for waste is 10533 gpd. Seems to be cutting it short. The DEIS takes privilege to compare the development to 15 homes with 4 people per home and Mr. Overton pointed to and used Pupukea as the comparison. Those are acre lots and so the comparison is 15 acres to 3 acres. Four people per home equals 60 people yet the developer is saying this will employ 80 to 90 people and then there are hundreds of potential customers each day. We don’t see how this is a good nor fair comparison.

The Draft EIS states:
Employ retention and detention methods that allow for the gradual release of stormwater. Where feasible, use open spaces, including parking lots, landscaped areas, and parks, to detain or allow ground infiltration of storm water flows to reduce their volume, runoff rates, and the amounts of sediment and pollutants transported.

How does the proximity of the project modify modeling and assumptions in curtailing high velocity stormwater release into near by coastal area and restrict release of potentially contaminated

buildup at applicant site from being inserted into sensitive marine environment?

2.We were told the bathroom use would most likely be controlled with a key by vendors. That is a lot of power at a location like this as we all know since septic and bathroom access has been a main issue for some time now. Will it be “No Public Bathrooms” like Foodland ? Will each lunch truck have a key? What are the plans for bathrooms and their use by all of the people this project hopes to attract?

3.Is Foodland or will Foodland be added to the conditional use permit so that all 4 lots are treated as one zoning unit? - Additional Items Of Concern With Foodland: [1] Large Food Delivery trucks accessing rear of store creating traffic obstructions on Pupukea Road; [2] On-going sewage and greywater issues from Foodland store and lack of acceptable mitigation efforts to solve these concerns [3] parking integration concerns based on scheduling of the separate business opening and closing times and sharing parking lot access

4.The single consolidated access/exit driveway with a nearby bus stop has great potential for traffic stops and delays greater than the .9 seconds in the DEIS. The length and location of the two-way left turn lane might look like the easy way out for the developer but this is going to be an obstacle course for residents and visitors alike. One only has to watch how the Foodland access points work with a single left turn lane. Why can’t Foodland keep its present entrance and possibly give up the exit? How wide is the proposed 1 entry / 2 exit access? How wide is Kamehameha Hwy right of way? There are questions as to how the turn lane will fit and work in this section not to mention trying to control pedestrians crossing randomly like they do now.

5.The DEIS states that they are required to put in 75 parking stalls but brag that they are putting in 125. They also mention allowing 8 lunch wagons to operate that also are required to have parking. If 8 trucks need 6 spaces each that is 48 spaces and that added to the 75 equals 123. WHAT’S REALLY BEING SAID? There is no mention of how many spaces are handicap and EV. Just say what it really is and keep in mind that like Haleiwa and Foodland, the

employees use a lot of the parking even if some walk or bike. With all the employment being offered according to Mr. Overton one could estimate employees would use 1/3 spaces. Foodland can’t manage beach use parking on their property. What are the plans for who uses the parking?

6.The timing of deliveries and refuse service should be clearly addressed. At present those services affiliated with the Foodland have lowered the quality of life for neighbors and community due to early morning noise and traffic stops caused by trucks blocking Pupukea Rd.

7.With the alternative of a 45,000 sf to 50,000 sf commercial shopping center mentioned in Sec.5.2, it seems possible the developer will go bigger once the approvals are given. G70 has expressed this would be approximately 40% of LUO capacity and provide a wider range of goods and services for patrons. HOW DOES THE COMMUNITY KNOW WHERE THIS IS GOING IF THE DEIS PASSES?

8.The DEIS has used a thousand words to paint a picture and in the DEIS, G70 has used drawings (pictures) to express a thousand words. They are stated to be conceptual but why can’t they be more realistic. For example figure 2-4 shows 29 coconut palms and almost all are as tall as the buildings with a few much higher. In figure 2-5 Kamehameha Hwy is lined with coconut trees. Figure 2-3 shows palms in front of Foodland and figure 2-4 shows the 4 trees that are there now. Is there a landscape plan in place or is the artist making this project look more appealing with all the trees and greenery? I think much of it is just art. Foodland had hedges, nice grass, and even trees in the parking lot but very little of that survives today for a variety of reasons. The community still has to view a large parking lot and store because Foodland finds it more important to be seen than blend in behind thicker roadside landscaping.

9.The conceptual idea is used with how the lunch trucks appear. Except for one truck shown in figure 2-5, the other drawings show what appear to be a few cars or pickup trucks parked with one or two people talking story. Where are the trucks, people, tables, umbrellas and lights at night?

10. Hanapohaku LLC does not have a good track record with everything associated with this property. Inactions and problems continued to plague project while continuing to loss the trust of the local community.

11. It is interesting how this project is being referred to as –Rural – Community – Commercial – Center. Yes most of us feel we are rural and like it that way. We have a nice community center, which G70 helped design, right down the road. The commercial centers for Paumalu (Sunset Beach), Pupukea and Kawailoa are Haleiwa / Waialua as well as Laie / Kahuku and should remain that way. Haleiwa has become a tough place to navigate with all of the autos, bused in tourists and pedestrians which are drawn in part to the new KS project of stores. This Commercial Center being planned is not going to make our rural community better and I fear just the opposite….another crowded spot in the road where life slows down but not in the rural kind of way. This development will take away much of the rural character of our area and negatively impact the lives of our residents and visitors (although most visitors don't realize it at the time).

12. The proposed crosswalk adjacent to the project because of it's near proximity to the Pupukea road Stoplight and existing pair of crosswalks is an obvious conflict in logical traffic design. It will NOT necessarily improve safe pedestrian transit and will simultaneously constrain traffic flow. Even if the project is NOT approved, the fact of the current UNPERMITTED activity at the site has caused dangerous pedestrian transit and illuminates that a crosswalk at this location will only exacerbate the road hazards. This needs a modern and far more advanced study then using old and underutilized modeling methodology. Please answer this concern as many people are confused by the consultant [G70 Jeff Overton] responses to inquiries regarding this and related components of the traffic mitigation problems.

    The described LOS modeling is using antiquated assumption models for this environment; the assumptions are flawed because the observations have not utilized seasonal components from winter surf contest activity at Waimea bay, Ehukai beach or Sunset beach; there is no modeling using data that is contemporary AND comprehensive over multiple seasons and weather conditions and surf conditions [existing flow is antiquated data & surf conditions are a MAJOR component of the deficiencies of these observations] and

extrapolating ambient flows/growth, areawide flows/growth.

13. ref: The 1.84-acre corner parcel at Kamehameha Highway and Pūpūkea Road contains a Foodland grocery store. Owned by the Sullivan Entities, this parcel is associated with the project because of a development agreement established among the four parcels in 1996 to achieve the mutual benefits of an integrated neighborhood shopping center without obstructing walls or fences between parcels. The Sullivan Entities do not own any interest in the three other parcels or in Hanapohaku. Only minimal alterations to the Foodland parcel, i.e., a common egress / ingress point from Kamehameha Highway, limited parking lot improvements, and related landscaping are contemplated as part of the project.

Based on this development agreement there is described an easement that connects the Honopahaku project with the property owned by The Sullivan Family Limited Partnership and the Maurice and Joanna Sullivan Family Foundation (collectively the Sullivan Entities). This relationship stated in the Draft EIS makes it clear that both of these sites need to be reviewed for their impact to the area in a combined fashion. Therefore, the EIS study needs to conduct a expanded traffic study of impacts based on its thouroughfares and other related elements of the foodland parcel and its synergistic impacts.

Since there have been substantial community concerns regarding the impacts on Pupukea road traffic due to the loading-dock in the rear of the foodland building and this issue should be relevant to the traffic study analysis.

The NEXT set of questions and comments cover three main topics of concern:

Ecological impacts:

No matter what kind of wastewater treatment system is employed, given the proximity of the Shark's Cove Marine Life Conservation District, this ecological gem should not be subjected to any more risk of degradation than it already is.

The "studies" carried out in the MLCD were pathetically inadequate and none of the previously published studies of the area were reviewed or included in the references.

Run off and leaching of cleaning chemicals, engine oil and other substances were not addressed. Actual usage of toilets is not accurate. Estimates of rainfall events are not accurate. The list is long on risks and questions.

Impacts on quality of life of North Shore residents:

The number of food trucks is vague, to say the least. This results in an inability to accurately forecast traffic and based on projections in the document -a parking apocalypse.

The rerouting of the entrances to Foodland and the "Center" into one, will result in perhaps being able to get into the development but will make it EXTREMELY difficult to park and then get out of the place. Especially aggravating will be trying to get in from Kahuku side and out going in the direction of Haleiwa.

Past behavior as a predictor future behavior:

Last and certainly not least is the fact that the landowners of this property and the people currently seeking to build their "Center" have operated illegally for years. They have flagrantly violated state laws. It is my understanding that they have accrued over $100,000 in fines. The DPP subsequently issuing them City's approval of SMA/2017-21 permit defies common sense.

The situation raises serious questions about the decision makers involved at the DPP.

The pictures used in DEIS are old. They do not show the illegal grubbing, grading and building on the property. Please show current status and identify all of the work done with and without existing permits.

Proposed Action Page 1-9 - Page "committed to pursuing Hawaii based businesses"
"urgent medical care services, credit union, professional services, surf shop and action sports, fitness studio, child care, health food market/deli, mobile food establishments and restaurant."
#1 There are already established alternatives to putting new entities here.
#2 Even if one could appreciate that it would be a "nice idea" one might not necessarily want such establishments in this neighborhood.
#3 Being committed to pursuing Hawaii based businesses sounds good but there is no guarantee that those are the business that would be on the property and no guarantee that they would be Hawaii-based.

"long drives to urban centers on Oʻahu"? 1-14 It's OK. We are used to that. We can go to Haleiwa and/or Kahuku.

1-10 detention storage system
"the rural center's drainage system will have a significant environmental benefit in comparison to the present use ". This makes NO logical sense since the present design of Legal system was used in Over capacity and the proposed and installed system was done WITHOUT permit and cannot be accurately quantified

in relationship to standards which do not address the sliding scale usage proposed.

1.4.2 Adverse Impacts
"Disposal of treated wastewater effluent will slightly increase the groundwater concentrations of nitrogen and phosphorus. The impact of the increased nutrients in groundwater will not be realized until the groundwater reaches the marine environment. The additional 4.3 percent nitrogen and additional 7 percent phosphorus would likely be undetectable in the marine environment at distances from the shoreline where marine communities occur (Refer to Section 3.7.1 Marine Environment: Probable Impacts and Mitigation Measures)."
How does the consultant, Dr. Dollar (and the author of Draft EIS), justify his inability to identify the obvious dismissal of SIGNIFICANT issues with the elevation of these components in the marine environment? The term undetectable is ambiguous and what metric will be used to determine a "true" baseline prior to the permanent increase of the introduced components into the near shore water environment.
Even if this were true that the additional nitrogen and phosphorus would be undetectable in the marine environment at distances from the shoreline where marine communities occur - #1 your EIS lacks discussion of other contaminants, for example engine oil, cleaning products and other chemicals which will likely percolate through the soil and or runoff to the ocean. #2 What are you talking about? Marine communities occur AT the shoreline.

"An additional 1,322 net new daily vehicle trips are projected from the development of the rural center. During midday and evening peak hours, a total of 65 net new trips (29 inbound to the center and 36 outbound from the center) are anticipated; Saturday midday peak hours total 98 (51 inbound and 47 outbound). The impact of the increased traffic related to the project at the intersection of Kamehameha Highway and Pūpūkea Road would continue at level of service (LOS) A during both peak hours of traffic, with LOS B during Saturday peak hour traffic. The potential delay for a vehicle under LOS B conditions would be an additional 1.7 seconds over the near-term baseline conditions. DOT and the City's Traffic Review Branch define a significant intersection impact when operation of an intersection changes from LOS D or better to LOS E or F. The rural center construction will not significantly impact traffic in the region."
Even if your figures are correct that is 1,322 net new daily trips, that is 1,322 trips too many. Your projected delay time does not come close to the gridlock that would ensue were this misguided project actually be built. Based on the lack of parking space for the proposed development compounded by the rerouting of the entrance and exit, it would be a frustrating experience for people just trying to get in and out of Foodland.

If parking is behind the buildings – how does that cohere with the parking being in front of Foodland? Does the consultant/author of the DEIS understand the contradiction of off-street traffic flow regarding this incongruity? Several experts have voiced confusion that this asymmetrical design is being proposed as it is likely going to be a gridlock situation in the parking lot.

This parking lot integration needs a SUPPLEMENTAL Draft study to understand the interconnection of these parking areas and the future gridlock and synergistic complexities of traffic flow at this critical area on Kam. Hwy.

1-13
"The Sunset Beach/Pūpūkea community has expressed that some existing commercial operations at the property are less desirable, such as the disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, haphazard vehicle ingress/egress, and non-focused pedestrian access. With the City's approval of SMA/2017-21 there is authorization to continue with a conditional use of the property, with very specific actions required of the owners to manage activities to minimize effects to neighbors, the community and the environment. Importantly, it remains the stated purpose of the owners to diligently plan towards the long-term objective of creating the Rural Community Commercial Center, as they seek to achieve the common objectives of the community and government planning policy for future use of this property."
Why would the owners suddenly diligently plan towards the long-term objective of creating the Rural Community Commercial Center, as they seek to achieve the common objectives of the community and government planning policy for future use of this property? What changed? Did we miss something? They have acted in flagrant violation of DDP regulations, Department of Health regulations amongst others for years. They do not appear to have any intention of paying the City and County fines that they have accrued.

The owners might have thought to act on these intentions earlier if they had been of any real importance to them. They have not only shown themselves to be out to rake in as much cash as possible without regard for the law, they have shown themselves to be very poorly organized. This combination does not bode well for an expanded operation so close to one of the most diverse and fragile marine ecosystems and for the ability of residents to navigate the single two-lane highway that is our lifeline and environs.

"2-3 The project site currently houses a small surfboard retail and rental establishment (North Shore Surf Shop) and a beachwear/swimwear store (Seamaids), a real estate office, a commissary (servicing one food truck) with

office, and five mobile food establishments (food trucks). Supporting uses currently on the property include food truck seating areas, portable toilets, portable hand-washing station, parking areas, trash dumpsters, fences, water lines, electrical lines and landscape. Drainage controls have been added to manage storm water runoff. The commercial operations on the property are entitled under Special Management Area (SMA) Use Permits, including an SMA – Minor in 2017 (2017/SMA-21). Hanapohaku is to comply with specific terms and conditions to clear past use violations. Current compliance actions include settlement of fines and obtaining site development and building permits. The existing uses will be completely removed for development for the Rural Community Commercial Center."

-Note settlement of fines as opposed to payment of fines. Does this imply that developer will attempt to evade payment of the existing accrued fines?

"Vehicle access can periodically be blocked from the hardscaped area adjacent to the central green to allow for periodic pedestrian-friendly community gatherings and cultural events, such as art shows, farmers' markets, mobile food trucks, and music and dance performances."
Periodically blocked means even less parking spaces.

Page 2-17
States that the Rural Center may include:
"• Urgent Care – small scale medical service clinic for non-emergency needs"
Kahuku Medical Hospital and outpatient center, Kaiser Permanente medical center, Haleiwa medical center and Wahiawa General have us pretty well covered as long as we can get there ie. The road is not blocked.
"• Pharmacy & Health Products – small scale pharmacy, health products, organic products"
Foodland, Longs Haleiwa and Foodland Laie, Longs Hauula and Celestial Natural Foods do a pretty good job of providing us with above named products and services.
"• Bank – small scale bank branch, financial services"
There is a BOH ATM in Foodland, there are banks in Haleiwa and Kahuku.
"• Business Center – copy services, business supply, package shipping/delivery, private post office"
Why? People who work from home here have figured out how to get these services and or do them themselves. People have scanners and printers etc.
"• Professional Services – dentistry, chiropractic, psychiatry, legal, accounting, etc.
• Real Estate Office – continue/expand an existing, on-site business
• Surf Shop, Beach Apparel & Action Sports Retail – continue/expand existing, on-site business
• Other Retail - art gallery, cultural arts, music and jewelry"

Waimea Valley, Turtle Bay and Haleiwa town all provide opportunities for "other"retail businesses.
"• Yoga & Fitness Studio – multipurpose studio, with potential for dance, hula, music" These activities are offered at Turtle Bay Resort, Sunset Beach Rec Center, Waimea Valley, Haleiwa town and elsewhere.
"• Child Care Center - day care center for families"
There is not enough parking or outside space (protected) for this.
"• Community Organization – office space for local community/environmental organization"
Really like who? Would the owners offer free office space to Malama Pupukea Waimea?
"• Quick Service Food – mobile food trucks offering different food types, affordable pricing"
Thanks but we have loads of options up here in that department. Brick and mortar restaurants that following the laws pertaining to their activities have a hard time competing with so many food trucks. Safety and sanitation in these places is not the best.
"• Health Food Market/Deli – dry goods and grab-and-go food"
Celestial Foods is a locally owned business that has been providing this for decades. The Beet Box and Killer Tacos, Sprout, Il Gelato, Kahuku Farms, Fiji Curry House among others provide pretty healthy food fast. They are locally owned.
"• Restaurant – Full service restaurant with bar, with both indoor and outdoor lanai seating"
Turtle Bay, Haleiwa and Waimea Bay all have great options for this type of establishment. I am concerned about the lighting of this business. Particularly the lanai lighting projected to be so near the MLCD.

"The permeable paving material on the lower parking area includes a design to tie the landscaped areas to the buildings (Figure 2-3)."
Actually this looks to be the parking lot for 4 of the food trucks. The other three are on the mauka side of the building.

The projected use of water is 8,160 gallons per day in when the current use 2,200 gallons per day. Not sure how they plan to run the proposed operation on so little water. It is projected that there will be 6,920 gpd out. OK, so there will be some irrigation of landscaping. Which, by the way, will not survive the trampling of people. Checkout Foodland next door. The current owner uses vast swathes of plastic grass to cover the ground because apart from a hard surface it is all that can withstand the foot traffic. Here is the kicker -The current water input is 2,200 gpd and wastewater output is 400 gpd. Where are the other 1,800 gallons per day going?

With respect to the section titled Natural Disasters please respond to the following comments.

Hurricanes are increasing in number and strength. With them will come dangerous storm surges. Kamehameha Highway will be washed out in various places.

Although the document states that the property is not with in the Tsunami Evacuation Zone it is within the Extreme Tsunami Zone. Kamehameha Highway is largely an arbitrary line that delineated the tsunami zone.

In the event of an earthquake Kamehameha Highway would be impacted and there would be possibility of a tsunami.

Regarding flooding, there is projected to be an increase in intense precipitation events and it is likely that water would overwhelm the precautions proposed. We had 6 inches of rain in 24 hours last spring in this area.

Increased coastal erosion is projected as a result of sea level rise. Again, Kamehameha Highway will be directly impacted by this along with many homes.

The short term and long term impacts of these disasters on the community and businesses remain largely unknown.

Also: Not mentioned in the section on Natural Disasters if the fact that there are lava tubes and that sink holes occur in this area.

Flora and fauna- Is there a caretaker? Yes apparently someone lives in the house that is the commissary also vagrants are allowed to stay in containers in the back of the property. This would appear to be illegal.
Lights need to be directed down and away from road/ ocean
The section on Groundwater Conditions Beneath the Project Site reveals that ocean water underlies the site at depth. This is troubling. Contaminants will find their way to the ocean and apart from phosophorus and nitrogen no other substance was mentioned. There is always the possibility that any waste water treatment system will be overwhelmed or have a spill no matter how good. We have had spills of sewage here at Turtle Bay and we have a fully fledged wastewater treatment plant reclaiming sewage back to R2 water for irrigation. "Somewhat higher nitrogen levels in the down gradient well (B-7) may reflect input from present use of the site". This is disturbing.

Federal, State and County regulations require that receiving waters be protected from pollutants associated with land disturbance, surface hardening and land use

activities using implementation and maintenance of BMPs. Pollutants of concern include sediment, nutrients, trash, pathogens, pesticides, oil, grease, hazardous and toxic waste, metals and organic compounds.
- Yes, they only talked about nitrogen and phosphorus... These issues NEED to be addressed in detail and if not adequate than the response from developer should require an ADDITIONAL round of revision until these issues are adequately considered with appropriate methods of remediation offered.

Regarding the proposed "subsurface detention chambers" they sound potentially fragile. Not only will the chambers be difficult to shore up, there will be buildings etc. on them and there are numerous underground caves and lava tubes in the area.
"Overall, the rural center's drainage system will have a significant environmental benefit in comparison the present use.."
The present use has been not abiding by regulations and laws for years.
Has the consultant obtained geotechnical and hydrological review by a licensed engineer ? If so, where are the accurate bore samples of the site that are necessary to substantiate the poorly stated assumptions?

Are the two large parking spaces for tour buses or deliveries or both?

"The pattern of increasing salinity and decreasing nutrient concentrations with distance from shore result from concentrated input of groundwater to the ocean at or near the shoreline throughout the region across Kamehameha Highway from the proposed site."
This clearly means that if the groundwater is contaminated or waste water taps into the flow, it goes straight into the ocean right there at Shark's Cove.

"The open coastal waters offshore of Pūpūkea Beach Park and in the Pūpūkea MLCD are categorized as Class AA under State Water Quality Standards under in HAR §11-54-6(b). The objective of Class AA waters is to remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alternation of water quality from any human-caused source or actions. The coastal waters beyond the MLCD are considered Class A marine waters, which are to be protected for recreational purposes and aesthetic enjoyment. Other uses are permitted as long as they are compatible with protection and propagation of marine biota and recreation."
The samples taken represent a single monitoring event. It was frankly a pathetic attempt to collect data. It is not enough data. There are numerous studies of fish, coral and other invertebrates at Shark's Cove MLCD done by various researchers at UH and beyond. Why were none of those investigated to give an accurate picture of the biodiversity and populations present in the area? The one article by Friedlander is old and is only one article.

"3-31 The rural center is in keeping with the North Shore SCP. The project will occupy the area designated in the North Shore SCP for a rural community commercial retail center and is consistent with the policy of "infill." The development plan is aligned with the goals of the North Shore SCP related to desired density, with a total floor area using only 25 percent of that allowed by the existing zoning ordinance."
Given its proximity to the Shark's Cove MLCD and the lack of space for parking, the proposed development is still too big.

"The closest medical center with 24-hour availability is the emergency room of Kahuku Medical Center, located 9.1 miles north east of the project site." and "Kahuku Public Library (13.7 miles north)."
The hospital is actually 12.6 miles away.

3-35 The rural center is not anticipated to pose adverse impacts to nearby State parks or City and County of Honolulu parks.

"Nearly all of the subject property has been cleared and developed, and the vast majority of plants present there are now landscape plantings."
There is quite a lot of hoale koa.
-They should agree to 100 native planting from now on.
-They forgot to mention illegally developed.
Regarding comments from agencies and individuals dated May 2017:
p.227 DOH Indoor Radiological Division - What about the demolition of current structures? Have they been tested for asbestos.

p.236 DNLR Engineering – I hope that the flood hazards for the area have been properly checked.

p.245 OEQC questioned the use of impervious parking near shoreline. In this document the impervious parking has been moved behind the main buildings but the result would still be the same in an intense precipitation event. The OEQC also had concerns about traffic. Traffic issues need to be reanalyzed and MORE relevant models utilized.
I do not see any resolution to the increase in traffic. 1,322 net new trips is a lot of trips.

p. 238 DLNR Conservation and Coastal Lands made no comment because the subject property is not in a conservation district. Shame on them did anyone look at a map?

p. 240 DLNR Wildlife had concerns about bats and seabirds. Any lights visible from the ocean will affect seabirds, turtles, fish, corals and other invertebrates.

250 Parks and Recreation were concerned that there was not enough parking planned.
I do not see that resolved at all.

255 Transportation were concerned about ADA compliance amongst other things. The buildings need to be ADA compliant too. The document talks about the sidewalk and some other path in the green area.

275 NSNB Kathleen Pahinui said that the North Shore Neighborhood Board voted 9-0-0 against the proposed development. She said it was attached with her letter but it was not printed in the EIS document.

Resources: The 2008 Friedlander study is relatively old already. There are site-specific studies that should have been used as resources.

Flora and fauna:
"All but perhaps 5% or less of the project area is developed as parking and numerous small shops (each of these areas landscaped to a lesser or greater degree)."
Most of this development was done illegally.

"Our survey revealed no federal jurisdictional waters (streams or wetlands) on the subject property. No federal Critical Habitat exists for any species on or adjacent to the project area. Thus, modification of habitats on all or any part of the site will not result in an impact to federally designated Critical Habitat. There is no equivalent statute under state law."
Please have your experts review:
http://dlnr.hawaii.gov/dar/marine-managed-areas/hawaii-marine-life-conservation-districts/oahu-pupukea/

O'AHU – PŪPŪKEA HAR 13-34 Established 1983
Prohibited activities: To fish for, take or injure any marine life (including eggs), or possess in the water any device that may be used for the taking of marine life, except as indicated in permitted activities above. To take or alter any sand, coral or other geological feature or specimen, or possess in the water any device that may be used for the taking or altering of a geological feature or specimen. To snag any akule while fishing from the shoreline of Waimea Bay according to "permitted" activities above.

Water
"Present use has averaged about 2500 gallons per day (GPD). Based on BWS design guidelines of 3000 GPD/acre, post development water use on the 2.72 acres of the Hanapohaku parcels may average about 8160 GPD. BWS has

indicated that its system can accommodate this increase in use (Group 70, 2017). Water supply from BWS for Foodland is supplied by a 1½-inch meter. Its use has averaged about 2200 GPD. This use may increase by 15 to 20 percent to irrigate the proposed new landscaping at the makai end of its parking lot."

The combined 27,000 square feet of bed area to be installed would provide 100 percent back up capacity

Enviniti report and repeated in the Group 70 Preliminary Engineering Report is 10,533 GPD, about 30 percent greater than the 8160 GPD of projected water use. How is this disparity reconciled?

p. 382pdf
"irrigation will be about 2000 GPD per acres on 0.12 acre of grass and 1200 GPD per acre on 0.50 acres of shrubs and trees"
That's a lot of water. It does rain quite a bit here too

"A draft of the second update of the WRPP is expected to be out for public review and comment in late 2017. For the Kawailoa Aquifer, the recommendation is to reduce the aquifer's sustainable yield from 29 to 22 MGD based primarily on the recharge calculation in Engott et al, 2015, considered to be the most detailed and accurate calculation available, plus an allowance of "spillover" from the upgradient Wahiawa high level aquifer. The recommended reduction has not yet been adopted."
The final recommendation needs to be considered.

p. 389 pdf details a lot of very important information that has yet to be determined.
p. 403 Old pictures again. Please update photos.

Traffic
Can you imagine trying to come out onto Kam and turn towards Haleiwa? It would be better going through Foodland and try to exiting onto Pupukea Road. What will be the signage patterns if the two lots are coordinated and adjoined?

The document says there are 126 parking spaces but actually with four food trucks plus 5 spaces per truck, that leaves only 106 Take away 6 more for 3 ADA spots and you only have 100. That means, according to the applicant's own calculations, that there will be enough parking for the employees and a few of their family and friends.

The applicant will need a turn-in area for the bus stop. The applicant will likely want the bus stop in front of Foodland. This will impact the current landscaping

in front of Foodland. There is quite a slope there too. Will likely need retaining walls, steps, ADA access. The bus will have a very difficult time getting out of that stop if it the entrance and exit to the proposed development is right in front of it. Please provide details. Will this require a NEW EIS process?

Parking control and validation. Paid Parking? Please provide details.

"During peak winter surf season and the active summer period on the North Shore, intermittent congestion is expected to continue to occur with or without the rural center."
Please provide details. Show the traffic flow.

Please Revise DRAFT EIS and resubmit to community after you work out parking lot coordination between Honopohaku and Foodland lots including the additional complexity of bidirectional flow interference of food supply trucks on Pupukea road servicing the Foodland rear entry and how complexities in traffic flow will exacerbate the allowable amount of vehicles per hour to be distributed between the proposed center and existing traffic patterns of Foodland/stoplight/Pupukea road intersection?

Air quality
There will be more cars idling. Cars will be trying to get out of the proposed parking lot. There may be issues trying to get in too.
Trying to turn in coming from the Kahuku side could be difficult. Trying to get out going towards Haleiwa – next to impossible.

Here are some cursory parking estimates
86 people employed there at least 50 cars
Each food truck has 5 more cars 40 (not sure where all the people eating at the food trucks are going to sit.)
The restaurant - How many tables? 20? One car per table 20
Shop 5
Pharmacy 5
Bank 5
Professionals 5
Yoga/fitness – class time 15
Childcare – drop off and pick time 15-20
That's 160 or so for 100 spots.

Noise Nighttime noise what time will they be closing up at?
10pm? Impact on turtles, fish and invertebrates across the road?
Lights too.

Utilities:
Current electrical demand for the existing buildings and mobile food establishments is estimated at 4,500 kWh per month.
The trucks are not supposed to hooked up to the electrical grid.

Waste Water:
infrequent special events with larger gatherings, the increased wastewater load would be supported with portable toilets and hand-washing stations. Mobile food trucks may be among the tenant mix periodically using the central gathering space. While in practice the number may be much lower, the wastewater and parking capacity are sized to support up to eight mobile food trucks, their patrons, and employees

Runoff calculations seem a little whacky. I would say that we get 1 inch rainfall on consecutive days quite often. We had 6 inches in 24 hours in Spring 2017. There is no accounting/data for previous saturation. This is an important ommission.

Electrical Power:
"Electrical demand for the restaurant and rural center is estimated at 4,000 kilowatt hours per day."
How can it be the same as it is currently?

Solid Waste:
The document projects the generation of 296 to 345 pounds of solid waste per day. Recycling will apparently be promoted but currently most recyclables end up burned at H Power. Thank you for saying that the food containers would be non-polystyrene. They need to be compostable. The calculations in the document do not account for increased litter and it getting into the storm drains and consequently the ocean.

Apparently pictures from January 2017, are shown in Figures 3-8 and 3-9A-F.
They do not look like a Jan 2017 pictures. Please address.

"This area of the North Shore is not slated for growth, according to the North Shore SCP. With little exception, other lands on the North Shore falls within the State urban or agricultural land use districts, and zoning allows residential or country uses. There are no currently proposed subdivisions, commercial or resort developments for the region. According to the Transportation Impact Analysis Report prepared for this EIS, no transportation infrastructure improvements are planned for the area around the rural center (Appendix F).The discussion of

cumulative impacts in the following section identify relevant resource uses occurring in the project area to which the project may contribute to impacts."
Did someone copy and paste this into the wrong EIS? There are quite a few significant pieces of land zoned for agriculture being "repurposed" for huge houses around here. The real estate company that operates on the subject property is involved in many of them. The Turtle Bay Resort also has approval for hundreds of new units (hotel rooms and resort residential houses/condos). HRI has shifting plans to expand the number of university students at Bingham Young and build between 300 and close to 1,000 housing units and retail outlets. Further away but significant, Dillingham Ranch is planning on building hundreds of houses. Please address this disparity and how the modeling elicited this conclusion it is flawed?

Finally please address these main takeaway points:

1) No matter what kind of waste water treatment system is employed, given the proximity of the Shark's Cove Marine Life Conservation District - We can not afford to take any chances. [Is there enough data to justify this risky near shore, high volume application?]

2) The "studies" carried out in the MLCD were pathetically inadequate and none of the previously published studies of the area were reviewed or included in the references. Please revise the DRAFT EIS and resubmit for another comment period.

3) Run off and leaching of cleaning chemicals, engine oil and other substances were not addressed.
Please revise the DRAFT EIS and resubmit for another comment period.

4) The number of food trucks is vague to say the least. This results in an inability to accurately forecast traffic and a parking apocalypse.
Please revise the DRAFT EIS and resubmit for another comment period.

5) The rerouting of the entrances to Foodland and the "Center" into one, will result in perhaps being able to get into the development but will make it EXTREMELY difficult to park and then get out of the place. Especially aggravating will be trying to get in from Kahuku side and out going in the direction of Haleiwa.

6) Last and certainly not least is the fact that the landowners of this property and the people currently seeking to build their "Center" have operated illegally for years. They have flagrantly violated state laws. It is my understanding that they have accrued $150,000 in fines. What possessed the DPP to issue them a

SMA permit defies common sense without satisfying the fines and remediation the existing violations?
The situation raises serious questions about the decision makers involved at the DPP.

Regarding the Food Trucks [referred to as "Mobile Food Establishments"]

All Mobile Food Establishments are required to access a state approved facility to support their food operations safely.

"Servicing area" means an operating base location to which a mobile food establishment or transportation vehicle returns regularly for such things as vehicle and equipment cleaning, discharging liquid or solid wastes, refilling water tanks and ice bins, and boarding food.

Note since there appears to be a significant move in the Hawaii state legislature to address clusters of food trucks that are located on individual parcels and this may address new requirements based on density of clusters with limits and escalating requirements for more than one food truck per parcel.

Will the developer [Honopohaku] attempt to avoid these requirements if they are granted an SMA before the proposed law is ratified and enacted?

[Or will Honopahaku show they are capable of becoming a real steward of this sensitive and pristine ecosystem and obtaining 2nd and 3rd opinions from REAL concerned Ecological scientists and Near shore hydrologists to assess long term risks and down-scale potential impact by reducing the number of potential hazardous stationary food trucks at site? OR ELIMINATING these trucks entirely?]

Currently:
§11-50-63 Sewage, other liquid waste, and rainwater.
(a) A sewage holding tank in a mobile food establishment shall be:
(1) Sized fifteen per cent larger in capacity than the water supply tank; and
(2) Provided with a tank bottom that is sloped down to an outlet with a shut-off valve to permit complete drainage of the tank, except for those tanks that are readily removable.
(b) Food establishment drainage systems, including grease traps, that convey sewage shall be designed and

installed as specified in section 11-50-61(b)(1).

(k) Water meeting the requirements specified in subsections (a) to (i) shall be made available for a mobile facility, for a special event food establishment without a permanent water supply, and for a food establishment with a temporary interruption of its water supply through:
(1) A supply of containers of commercially bottled drinking water;
(2) One or more closed portable water containers;
(3) An enclosed vehicular water tank; or
(4) An on-premises water storage tank.
[Eff 2/24/2014; am and comp]
(Auth: HRS §321-11) (Imp: HRS §321-11)

Mobile Food Establishments:

A passing inspection for the Mobile FE and Support Kitchen must be received from the Sanitation Branch before the Mobile FE can operate for business.
Support Kitchen requirements:
A Support Kitchen is required to have a current Food Establishment Permit and must be able to "support" the operation of the Mobile FE — this is determined by the inspector based on your business plan, menu, and the facilities of the proposed Support Kitchen. A Mobile FE may have more than one Support Kitchen. Private home kitchens are not allowed.

Any food establishment with a current permit with DOH may be used as a Support Kitchen.
All equipment to be used for Mobile FE operation must be on-board unit or attached to unit. Mobile FE requirements (continued) :
Equipment Details
Sink(s):
A handwash sink is required when there is handling of open food. Water flow may be generated by gravity or an electric pump that allows both hands to be washed at the same time. Additional sink(s) and size of sink(s) will be determined based on the Mobile FE operation (food prep, warewashing, etc.). Mobile FE serving pre-packaged foods only does not require a sink.
Water tanks:
The potable water tank must be at least 5 gallons in capacity. The wastewater tank must be >15% in capacity than the potable water tank. Water tank capacity requirements will be based on the menu/operations — more operations conducted on the Mobile FE will require more water. Water tanks must be of safe materials, durable, smooth, non-absorbent, and easily cleanable.

Food equipment:
Hot-holding units must maintain food temperature of ≥ 135ºF.
Cold-holding units must maintain food temperature of ≤ 41ºF.
Any equipment used for the operation of the Mobile FE must be physically attached to the unit. Serving tables, hibachis, coolers, and other equipment used for the Mobile FE food operation are not allowed to be set on the ground, outside Mobile FE. A trailer on wheels attached by a hitch to a Mobile FE may be allowed for cooking purposes only. All food handling must be conducted within the Mobile FE.
Pass-thru and openings:
Pass-thru window(s) are recommended to be no larger than 5 square feet and is required to have a closure that is able to be put into place when window is not in active use. If there are more than one pass-thru, it is recommended that they be spaced at least 2 feet apart. Openings must be screened and protected from entrance of vermin and pests.
Materials and surfaces:
All surfaces of the Mobile FE must be durable, smooth, non-absorbent, and easily cleanable.

Will Honopohaku attempt to circumvene the spirit of the rule/statute regarding the amount of necessary parking space by underdeclaring the amount of stationary food trucks considered at entire center?

Will Honopohaku revise and resubmit the draft EIS to address all of the inconsistencies regarding tenant density, parking, water, neighbor impact, hydrology, ocean impact, foodtruck understating, effluent issues, lack of high velocity runthrough of water from steep slopes, and other issues where the consultant G70 has not been able to create a reasonably usable DRAFT EIS?

Some Generic questions from one of our concerned members:

<u>Section a - Office of Environmental Quality Control</u>
A) 1) the law requires that government give systematic consideration to the environment, social and economic consequences of proposed development projects prior to allowing construction to begin. The law also assures the public the right to participate on planning projects that may effect their community. The Office of Environmental Quality Control implements this law in Hawaii. (OEQC)

2) The proposed action is subject to EIS law, the environmental review process begins with the development of a Draft EIS.This Draft EIS is an

informational document prepared by the private applicant and used to evaluate the possible environmental effects of a proposed action. The Draft EIS must give a detailed description of the proposed action or project and evaluate direct, indirect and cumulative impacts. The document must consider alternatives to the proposed project and describe any measures proposed to minimize potential impacts.

3) After reviewing comments received, the document writer must discuss findings and reasons that support the determination in consideration of the significance criteria listed below.

4) The final EIS must discuss the project impacts in relation to each criterion in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that a proposed action will or will not result in any significant environmental impact must be included.

Section B- Review of Significant Criteria

a) In consideration the significance of potential environmental effects, agencies shall consider the sum effect of the quality of the environment, and shall evaluate the overall and cumulative effects of an action.
b) In determining whether an action may have significant effects on the environment, the agency shall consider every phase of a proposed action, the expected consequences, both primary and secondary, and the cumulative as well as the short term and long term effects of the action. In most instances, an action shall be determined to have a significant effect on the environment if it:

(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;
(2) Curtails the range of beneficial uses of the environment;
(3) Conflicts with the state's long term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;
(4) Substantially affects the economic or social welfare of the community or State;
(5) Substantially affects public health;
(6) Involved substantial secondary impacts, such as population changes or effects on public facilities;
(7) Involves a substantial degradation of environmental quality;
(8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;

(9) Substantially affects a rare, threatened, or endangered species, or its habitat;
(10) Detrimentally affects air or water quality or ambient noise levels;
(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;
(12) Substantially affects scenic vistas and view planes identified in county or state plans or studies; or,
(13) Requires substantial energy consumption.

It is not sufficient to simply state that a project does not have any significant impacts or the rephrase each criteria in its negative form. The Draft EIS should discuss the project impacts in relation to each of these criteria in detail.

Section C - PREASSESSMENT

According to the OEQC Hawaii State Environmental Review Process guidebook (June 2004), a pre-assessment consultation with the community regarding the proposed activity should have taken place. As well as pre-assessment contact to groups, individuals and organizations that have expertise in the field, have interests in or would be affected by the activity proposed. Immediate neighbors or neighboring landowners must be contacted.

The Hawaii State Environmental Review guidebook also requires, by law that a good faith attempt be made to bring to light environmental concerns prior to the formal draft EIS review period.

Please document contacts with community groups and agencies and append any correspondence in the final EIS .

We notice that MANY ENVIRONMENTAL GROUPS WERE Not contacted – PLEASE ADVISE WHY YOU DID NOT SEEK THEIR COMMENTS?

If the project is in a coastal areas there should have been contacts with the Sierra Club UH's Sea Grant Program.

There is no reference in the draft EIS of contact with these entities.

Was the Sierra Club contacted?

Please append copies of pre-assessment correspondence with this organizations in your final EIS .

Was the UH's Sea Grant Program contacted?

Please append copies of pre-assessment correspondence with this organizations in your final EIS .

Where local environmental & community groups contacted? Please list all those groups contacted.

Was the Surfrider Foundation, Oahu Chapter contacted?

Was the Save Sunset Beach Coalition contacted? They have NO record by mail or email.

Was the Sunset Beach Community Association contacted?

Please include in your final EIS copies of any correspondence or notes from meetings from all pre-EIS contact.

If these organizations and groups were not contracted, **please provide an explanation as to why there was not a good faith effort made to contact these groups?**

GOOD NEIGHBORS Pre-assessment Consultation
Immediate neighbors or neighboring landowners must be contacted.

Were the neighbors and neighboring landowners contacted and queried about there current concerns and the recent history of the Hanopohaku entity as a good neighbor and steward of the area?

Please provide a list of neighbors and neighboring landowners that were contracted.

How many landowners did you contact on Pahoe Road? Did you attempt other people who were neighboring the proposed project on Kam Hwy?

When were they contacted? List each landowner separately please.

Please provide copies of pre-EIS correspondence with the neighbors and landowners on Pahoe Road and Kamehameha Highway.

What were their concerns? Please list or append copies of pre-assessment correspondence.

How were responded to?

Did you address the lighting proposed on Pahoe Road?
Did you discuss the traffic increase of 5,000 % [even though your Traffic consultant supposedly did some modeling, it is obvious from antiquated sampling and incorrect assumptions that it will evolve flawed/skewed conclusions] on Kam hwy/ adjacent toPahoe Road?
Did you discuss the widening of Pahoe Road?
Did you discuss the widening of Kamehameha Highway?
Did you discuss the proposed construction periods?
Did you discuss the easement issues potentially necessary to utilize foodland parking in conjunction with Hanopohaku development?
Did you discuss the noise levels for the completed project?
Did you discuss the safety issues with 5,000 more people on their street?

The draft EIS lists contacts with the Department of Transportation for the proposed highway crosswalk **What are these approvals and rights-of-way?**

Would the proposed off-site highway improvements also require a separate SMA permit?

There is no discussion of any state or county funds involved. **Please include amounts of federal or other funds administered by state or county agencies.**

Please list all permits necessary by the Dept. of Transportation and their status.

There are proposed improvements to Kamehameha Highway and Pahoe Road the Department of Transportation rules regarding lighting were inferred but are omitted**. Please append the proposed lighting improvements and list the rules for the lighting in your final EIS .**

The amount of funds involved for these improvements was omitted.

According to the Hawaii State Environmental Review Process guidebook, the applicant is to disclose the amount the state of county funds involved, including federal or other funds administered by the state or county agencies.

No mention of these funds is included in the DRAFT EIS.

Please include amounts of federal or other funds administered by state or county agencies.

RE: Proposed Commercial Bus Stop on Kamehameha Hwy.
Is this improvement included in the proposed off-site roadway improvements?

Was the Dept. of Transportation Statewide Transportation Planning Office (STPO) contacted? **Please provide copies of correspondences in the final EIS**

Please list all the proposed or required improvements to Kamehameha Highway.

Who will be financially responsible for these improvements on Kamehameha Hwy.?

Who are the entities and their respective percentage of financial responsibility for the proposed improvements to Kamehameha Hwy.?

Who are the entities and their respective percentage of financial responsibility for the proposed lighting improvements on Kamehameha Hwy.?

Has any other Oahu rural community had such improvements proposed and implemented? Please include the sustainable areas of Ko'olauloa, Wai'anae, and Ko'olaupoko.

Who will be financially responsibly for the improvements proposed on Pahoe Road?

Who are the entities and their percentage of financial responsibility to the proposed Pahoe Road improvements?

Who are the entities and their percentage of financial responsibility for the proposed lighting improvements on Pahoe Road?

Has the Honolulu Office of the Federal Highway Administration been contacted to determine the applicability of a federal 4(f) document which involved federal funding and is situated close to any of the below area or resources.

If such funding is included and since it is near a park, recreational area, wildlife refuge, historic site and bikeway is can trigger a form of federal environmental review, distinct and separate from NEPA and Chapter 343, HRS, known as a 4(f) review

Will the proposed roadway improvements involve federal funding?

Will the proposed roadway improvements constructively use any of the above resources?

FOODLAND & HANOPAHKU PARKING LOT – PRE-DEIS NEGOTIATION OF EASEMENT OR MOU THAT SHOULD HAVE BEEN DISCLOSED IN DEIS
In the draft EIS PRESENTATION Jeff Overton made at NSNB there was mention that the applicant believes that they have a potential access agreement with foodland.
Quote: "this area will largely be closed off much of the time we have ample parking the the code calls for about 80 parking spaces and we have 126 on the site here there's going to be more with the restriping of the foodland parking lot as well so more than ample parking and closing this off periodically is going to allow for a lot richer pedestrian experience alright"....

What are the rights of the neighboring landowner Foodland?
What approvals have been secured from Foodland?

Did you have to purchase these rights? If so how much of the stated project costs would be used to secure these approvals?

How will this easement really affect traffic – the study does NOT Identify the flow patterns with a map in a chronological method to make this modeling usable and the assumptions are from 7-8 years ago; please elaborate ?

How would this affect the traffic signal at Pupukea Road?

Using the alternative, will the proposed improvements to Kamehameha Highway be changed?

Will Hanopahaku need to reapply with Foodland to generate another EIS based traffic study on the merging of the parking lot ?

Section E- The draft EIS fails to adequately describe the surrounding natural environment.

The draft EIS does not make mention to the Hawaiian Island Humpback Whale National Marine Sanctuary. The area is located directly offshore from the project. For you reference please see attached NOAA map of the location in relation to the north shore.

Was the National Oceanic and Atmospheric Administration and the Hawaii State Dept. of Land and Natural Resources contacted about the project?

What are NOAA and DLNR regulations and provisions for the Humpback Whale Sanctuary?

Please list all the rare, threatened, or endangered species, in the habitat of the Pupukea MLDC and the Hawaiian Islands Humpback Whale National Marine Sanctuary.

What is each of their protected statuses?

What are the effects of the project on the Sanctuary?

What are the effects of pollutions on the Sanctuary?

What are the effects of pollutants to the flora in these districts?

What are the effects of the increased surface runoff to the Sanctuary?

Please supply evidence justifying that the proposed action will not result in any significant environmental impact to this area.

The final EIS must discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that the proposed action will or will not result in any significant environmental impact must be included.

The EIS failed to recognize the MLCD according to consultant draft:
Section F- Pupukea Marine Life Conservation District (Pupukea MLCD)

Identify and assess areas that are generally intolerant to change such as wetland habitat, dry-land forests and coral reefs. Analyze potential impacts resulting from catastrophic events) e.g. hurricanes, fires, landslides) in addition to the project impacts. Consider this cumulative impact on the survival of any species.

The Conservation District is located directly across Kamehameha Highway from the project site and potential impacts were revealed.

NOAA the State Dept. of Land and Natural Resources has jurisdiction over the area. They are the agency with jurisdiction and expertise and providing them with the Draft EIS is mandatory.

Was the DLNR provided with a copy of the draft EIS?

Was NOAA contacted?
Please append copies of pre-DRAFT correspondence with the DLNR and NOAA in your final or revised DRAFT EIS .

On Oahu, there are only three Conservation Districts, Hanama Bay, Pupukea and Waikiki Special District. The Conservation Districts were enacted as measures to mitigate destruction and overuse of its areas.

For comparison purposes please provide current visitor counts for the Hanama Bay Conservation District and current visitor counts the Pupukea MLCD.

Please include discussion as to the need to study the possibility of additional regulations regulating to this area to prevent destruction and overuse?

A project of this magnitude directly across the street would be compelled to study the potential of overuse and mitigation measures to prevent overuse.

Would mitigation measures similar to the Hanama Bay measures be proposed? e.g., Fees for parking? Mandatory public education presentations? Entrance fees for tourists?

Please provide in your final EIS [or Revised DRAFT EIS] the available parking spaces Hanama Bay. The breakdown of parking stalls by vehicle type, I.E. passenger, commercial bus space, ADA reserved spaces.

With significant increase in the use of the parking, will the Pupukea Beach Parks parking areas need to have parking meters installed?

Will there be a need to provide extra DLNR officers to accommodate the influx of visitors?

Will a video presentation be required viewing to all wanting to use the area at Sharks Cove?

Will there be a fee charged similar to the fees charged at Hanama Bay?

It is not sufficient to simply state that a project does not have any significant impacts or to rephrase each criteria in its negative form. The DEIS should discuss the project impacts in relation to each of these criteria in detail.

Section G - OTHER GOVERNMENT AGENCIES

1) The U.S. Coast Guard is responsible for the marine environment protection on navigable water. They are also responsible to maintain or improve the quality of the marine environment and to respond to environmental contaminants in the coastal area.

Was the U.S. Coast Guard agency contracted regarding the project?

Was the U.S. Coast Guard provided with a copy of the draft EIS? Will they be provided with a copy of the final EIS ?

In the event they were not contacted, why where they not contacted? They can provide valuable information for possible mitigation measures to prevent pollutants, contaminants and runoff into the costal areas.

2) U. S. Environmental Protection Agency (EPA) implements laws designed to protect the environment and is responsible for the administration of comprehensive environmental protection laws. **Has the EPA been contacted regarding any of the following federal laws?** The **Clean Air Act?** The **Clean Water Act**? The **Safe Drinking Water Act**? **The Comprehensive Environmental Response, Compensation and Liability Act**? **The Resource Conservation and Recovery Act**? The **Marine Protection, Research and Sanctuaries Act?**

How does your project's impacts relate to the EPA's: The **Clean Air Act?** The **Clean Water Act**? The **Safe Drinking Water Act**? **The Comprehensive Environmental Response, Compensation and Liability Act**? **The Resource Conservation and Recovery Act**? The **Marine Protection, Research and Sanctuaries Act?**

The US EPA Pacific Islands Contact Office (PICO) in Honolulu provides information on all EPA program areas. The information includes laws, regulations, guidance, technical manuals and other documents. **Has PICO been contracted?**

Due to the addition of 5,000 patrons a day to the project site, located directly across the street potential loss can occur from overuse of the Pupukea Marine Life Conservation District.

Please furnish studies that include traffic and parking analysis with regard to the Pupukea parks and show how an irrevocable commitment to the loss or destruction of this natural resource will not result from having thousands of project patrons using the Pupukea Marine Life Conservation District.

What are the potential impacts attributed to over use of this natural resource?

Section H - The Army Corp of Engineers is listed in the agencies contacted. An individual NPDES Permit is required for any storm waste and other discharges to Class AA waters.

How can a permit be granted to discharge into Class AA waters at the Pupukea Marine Life Conservation District?

What Federal, State and Local laws will be compromised in doing so?

Item two of significant criteria. "Curtails the range of beneficial uses of the environment" and item six, "Involves substantial secondary impacts, such as population changes or effects on public facilities"

A draft EIS response to all Shoreline effects in most instances was to respond by saying, "the project does not abut the shoreline". Attached is the developers marketing sheet it clearly states that this property will be situated at the waters edge. In addition, as much as the only barrier between this project and the sensitive areas is Kamehameha Highway and the narrow parking strip. Their EIS did not adequately address the following and we would request a more detailed assessment of the following:

(9) Beach Protection;

(A) Protect beaches for public uses and recreation.

(10) Marine Resources:

(a) Promote the protection, use, and development of marine coastal resources to assure their sustainability

(c.)Policies.

(1) Recreational resources;

(B) Provide adequate, accessible and diverse recreational planning and management by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas:

(v) ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and water having recreational value consistent with public safety standards and conservation of natural resources:

(vi) Adopting water quality standards and regulations point and no point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters

To all the above the discussion was "Generally, not applicable since the property does not abut the shoreline".

Now is we are to truly address these we would disagree that while the project does not "abut" the shoreline it does effect the shoreline, its beaches, its beach parks and the marine aquatic environment. Moreover, these effects need to be addressed in detail as well as mitigation measures if any and alternatives to the proposed plans.

The same applies to the draft EIS discussion under (4) Coastal ecosystems;

(A) Exercise an overall conservation ethic, and practice stewardship in the protection of, use, and development of marine and coastal resources;

(C.) Preserve valuable coastal ecosystems, including reefs, of significant biological of economic importance.

(E) Promote water quality and quality planning and management practices that reflect a tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development of implementation of point and Nonpoint source water pollution control measures.

No discussion on the above, except to refer back to the discussion under "Coastal Ecosystem"

Discussion: Construction of the project will temporarily increase the risk of sediment in storm water runoff. The project will be constructed using accepted best management practices to minimize potential impacts form soil erosion and other pollutants in runoff.

Storm water runoff volume from the developed site will increase due to increased building coverage and paved area. This increased runoff volume may be controlled through diversion to landscaped areas. Excess storm waster runoff will flow into an existing storm water drain system, or into new piping that connects to existing storm drainage system. Pollutants in storm water will be reduced by reducing the erosion potential at the site (i.e., coverage by buildings, paving, and landscaping), and by locating most of the parking under a covered parking structure. The problem is that stormwater will surge with a high velocity and expose all residue to marine environment. Most consultant reports are unable to adequately model this problem and it is clearly ignored in the Draft EIS submitted by applicant.

Further discussion is necessary to understand how the increase in storm water runoff which would increase from 4.9 cfs to 14.6 cfs. Will not seriously affect the area. This runoff will have the potential to threaten the coral reefs and degrade the water quality of the Pupukea Marine Life Conservation District.

Alternative proposals need to be addressed to protect and preserve these valuable coastal ecosystems, including its reefs, and the significant biological of economic importance.

Further Discussion: The Pupukea MLCD could potentially receive storm water runoff from the property. This runoff could result in a temporary influx of fresh water to the near shore: potential for pollutants, such as automotive fluids, should be reduced due to controls on the Property (e.g., erosion control, location of parking).

We are concerned that the project could have an adverse impact on this important resource for the local visitor economy

Further discussion is necessary to answer the following:

The center could be subject to serious flooding that is prevalent to this region of the North Shore.

Please address the issue that during the rainy season cars coming into the basement parking will have varying amounts of Pupukea red dirt and other soils attached on their undercarriage, tire wells and tires. **When this dirt loosens and falls onto the basement floor and the rains wash it into the drainage pipes how the pumping mechanisms handle the red dirt, siltation and sand?**

What back up measures are there to prevent the clogging of these pumps and rendering then useless?

Please discuss the impacts of the dirt and its potential siltation on the wastewater treatment plant and its effectiveness and its impacts to the groundwater sources.

Please discuss the effects of the automotive fluids on the ground water sources.

The most common reply was stated in as "**This property does not abut the shoreline"**.

It is not sufficient to simply state that a project does not have any significant impacts or to rephrase each criteria in its negative form. The DEIS should discuss the project impacts in relation to each of these criteria in detail.

Further discussion is needed on the potential effects, cumulative and secondary affects the public parks and beaches.

Further discussion is needed to avoid the possibility of the project contributing to the degradation of the beach parks. Please provide evidence to support your conclusions and discussion.

The final EIS [OR REVISED Draft EIS] must discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form.

Evidence justifying the determination that the proposed action will or will not result in any significant environmental impact must be included.

Section I - Public Access, the Public Parks and Parking Issues

This development could reduce or impose restrictions upon public access to tidal and submerged lands and the beaches within the special management area.

It also can involve substantial secondary impacts, such as effects on public facilities.

No parking is allowed on Pahoe Road. / No parking is allowed along Kamehameha Highway.

We are concerned that there will be significant negative impacts to the beach parks accessibility and these impacts will curtail the range of beneficial uses of the parks and the beaches.

Two parking areas that service the Pupukea Recreation Center and Sharks Cove/Tide Pool are on weekends and summer weekdays mostly full for the majority of the day.

The developer should provide adequate parking to the patrons and employees to insure that the public parking at the beach parks will remain accessible to the public utilizing the beaches and the recreation facilities.

Please supply evidence justifying that the proposed action will not result in any significant environmental impact to this area.

What alternatives and mitigation measures to the project design are proposed? Please address the significant effects on the only available off street parking in the immediate area. The City and County Parks parking areas of the Pupukea and Sharks Cove beach public parking.

The developer is proposing to furnish only the minimum requirement of parking spaces. Per DLU regulations, only 80 parking spaces are required. The developer has proposed only the minimum 126 spaces in their plans.

In Hale'iwa and Turtle Bay, the majority of employees travel by personal vehicle to work. We cannot assume that the majority of the employees left out of a parking space will use alternative transportation. Since they will not know in advance that there are no employee's parking spaces available they may not have enough time to return home and find alternative transportation to work.

The developer has spoken that the majority of employees in Haleiwa use public transportation or car pool to work or ride a bike.

Please provide evidence to support these theories.

Although riding a bike to work would make a lot of sense to local residents that may be seek employment at the project, the fact are that during the rainy season and even during summer month's rains occur daily in the lower Pupukea/ Sunset Beach areas. Employees who would ride a bike would arrive soiled and soaked.

Please describe the facilities provided to employees?
Will the restrooms facilities have showers or electrical outlets?

With limited tenant and employee parking, please address where the remainder of the employees will park. Please provide all alternatives and include supporting data from other shopping center employees.

Will the employees and tenants know in advance that there would be no available parking?

What are the hours of parking lot? Will be consistent with foodland lot?

Will the lot be locked at night?

How will the lot be monitored?

Will cameras be used to monitor the parking lot?

Will there be a security person?

What are the projections of minimum staffing requirements and work hours of staffing with regard to each establishment?

With an estimated 3300 cars daily and 295 cars per hour projected for the weekend peak hours there leaves no doubt that providing only the minimum of parking stalls will not insure that the beach parking areas will not be seriously reduced by employees using every available public parking space in the nearby parks.

Please consult with the Department of Parks and Recreations for statistics to the current and projected (2018 and beyond) park users and any plans to acquire additional lands in the immediate vicinity for parking areas.

The final EIS must discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that the proposed action will or will not result in any significant environmental impact must be included.

Section J - Storm water run-off and Nonpoint source pollution management and control

Item one, significant criteria, involves an irrevocable commitment to the loss or destruction of any natural resource.

We would suggest that the possibility of pollutants entering the near shore environment of the Pupukea Marine Life Conservation District might contribute to the long-term destruction to the coral reef and loss of life to the marine animals in the area.

The waters at the Pupukea Marine life Conservation District are classified as Class AA waters. Class AA marine waters are to remain in their natural pristine condition with an absolute minimum of pollution or alteration from human-caused sources or action. Class A marine waters are to be protected for recreational purposes and aesthetic enjoyment. The waters just beyond the Pupukea Marine Life Conservation District are Class A waters

Please provide references to and consult with the Director of Health with regard to programs to prevent runoff of polluted water from land

areas, including agricultural and urban lands, especially after heavy rains, from reaching our lakes, streams, and coastal waters.

What are the affects to the rare, threatened, and endangered species, and its habitats?

No statistics have been provided for annual rain volumes for the Pupukea area. While we have been in drought conditions for the past 5-10 years, we cannot assume that these conditions will persist.

Please consult with local and state agencies and provide rain statistics for the past 20 years for the Pupukea, Sunset Beach area. Please use this data to discuss in detail the storage tank capacity.

The draft EIS includes and proposal to install an 87,000 gal. Storage tank. **Please provide in more detail the your proposal, its capacity to the seasonal rains, its proposed location in relation to the nearshore waters and any back up plans in the event of a 10 yr., 5 yr., and 100-year rain storms.**

What happens when this storage tank is full, where does the run-off go?

How will the tanks be inspected? If a tank is corroded and leaking, will this affect the groundwater or increase fresh water influx into the near shore waters?

The draft EIS stated the storm water runoff volumes of the developed site would increase. It failed to adequately discuss mitigation and it failed to address the impacts to the near-shore aquatic environment, Pupukea M.L.C.D., and the National Humpback whale sanctuary. **Please describe proposed mitigation measures. It is not sufficient to state that an appropriate mitigation measure will be instituted. Please describe the mitigation measures.**

Please consult with the Dept. of Wildlife and provide an inventory of the marine animals in the immediate area. **Are they part of the protected species in the Sanctuary?**

What are the point and nonpoint sources of pollution that will be present in the construction areas?

What are the effects to marine life from these pollutants?

What are the effects on the marine life from the influx of fresh water?

The mitigation measures proposed in the draft EIS were to increase the size of the pipes used in transporting surface runoff directly into the Marine Life Conservation District. This is not and should not be an acceptable answer as it may involve an irrevocable commitment to the loss or destruction of the natural resource.

No in depth discussion was presented as to how the significant impacts were to be mitigated. The proposed mitigation measures were not sufficient. Please provide evidence to support your theories.

The final EIS must discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that the proposed action will or will not result in any significant environmental impact must be included.

Re: Proposed use of asphalt on the raised curb/sidewalk fronting project

Marine studies have shown that when surface water has contact with asphalt certain petroleum byproducts are released. These pollutants could potentially run off into streets, storm drains, and these drain directly into the Pupukea Marine Life Conservation District. **Please describe the adverse affects of these pollutants on the newly hatched coral reef polps.**

Please include discussion with alternatives to asphalt in these curb/sidewalk improvements to mitigate the transmission of these pollutants to near shore waters.

This area is a ground for limu, and wildlife habitats they need to be protected for the future viability of the area.

Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972: Prohibits transportation of dredged material for the purpose of dumping it into ocean waters without a permit from the Army Corp of Engineers.

Section 404 of the Clean Water Act (33 USC1344) prohibits the discharge of dredged or fill materials into the waters of the United States without a permit from the Corps of Engineers.

According to maps provided by the City and County of Honolulu, indicate that the property elevation is 20 feet above sea level.

During high tide and during storm surge does the sea level raise the underground water levels under your project?

What are the elevations of the areas considered for the underground basement parking area?

The draft EIS proposed "over excavation" of these areas due to the soil types.
In the event fresh or sea water seeps into the excavation area what are the measures proposed to prevent near shore contamination, siltation or other negative effects of the excavation to the marine environment.

Would a permit allow dumping into Class AA waters?

The draft EIS has noted that the development would adversely affect water quality, this is a significant issue.

Please address in detail the mitigation measures. To use repeatedly the phrase that appropriate mitigation measures will be instituted is not sufficient. The appropriate mitigation should be described. If mitigation measure is identified, the corresponding impact should also be described.

In the Draft EIS, there is no mention of alternative methods or modes of your project. The area directly impacted is a rural residential community within the North Shore and includes the Country Towns of Haleiwa and Waialua, which are the North Shores centers of commercial activity. The alternative to having a high-density shopping plaza directly across from a sensitive and highly utilized Sharks Cove area should be addressed. Using an alternative site would likely result in a consensus of the affected community members. **Why was no alternative proposed in the draft EIS? Could there OTHER method lower project impact, such as declaring a limit on amount of stationary food trucks at 1 truck per parcel?**

Are there other methods of mitigating impact on traffic flow and requiring a crosswalk to be implemented so close to the stoplight?

The draft EIS list permits, variances and approvals please list as required the status of each.

C&C, Grading and other construction related permits, please list all permits necessary.

DOH, Wastewater System Approval, status?
Please outline the permits necessary for the drainage system connections, their status and requirements. **What are the variances being proposed?**

Board of Water Supply, permit status and approval of projected water allocation.

Fire Dept. recommendations and concerns about service area, in relation to current levels of staff.

Police Dept. The recommendations and concerns to the limited amount of officers in the service area. Have they been contacted regarding a proposal to house a substation or kiosk in the project? Please include all correspondence and status of requests.

Section K - Public Safety
How many ways does you project affect public health?

Please provide a detailed list of other specialty retail shopping centers that are located directly across from Parks and other natural and manmade attractions. I.E. Ala Moana Center.

Please consult with the Dept. of Transportation and the Dept. of Health as to the volume of pedestrians in these centers that access the public beach parks and describe the measures that protect these pedestrians.

Please project pedestrian traffic volumes from your project desiring to access the nearby beach parks and shoreline recreational areas of Pupukea Park, Sharks Cove and Three Tables areas.

With a projected 5,000 visitors daily, will pedestrian crosswalks be proposed on Kamehameha Hwy.?

How many crosswalks will be proposed?

Where would these crosswalks be located? How will these crosswalks be affected by the proposed "middle turn lane"?

Please describe any other proposed crosswalks improvements, i.e. flashing lights, overhead transportation structures proposed or required for crosswalks.

Is a pedestrian crosswalk proposed across Pahoe Road?

In comparison, Sunset Beach Support Park located across the highway from Sunset Beach has one crosswalk. It is located at its far eastern edge, quite a distance from the vehicular access to the mauka park/parking lot. The majority of pedestrians do not walk to this crosswalk but rather jaywalk at the entrance to the park. Furthermore, most tour bus operators **do not** guide their patrons to the safety of the crosswalk, but rather assist their passengers by directing them to jaywalk Kamehameha Highway at the entrance of the park. This is a serious public concern and only a matter of time before it results in a pedestrian fatality or serious injury.

What are the statistics of pedestrian related accidents at the Sunset Beach Support Park?

2.2.2.4.2. Access
Proposed Commercial Bus Stop on Kamehameha Hwy.

The traffic study (page 29 paragraph two) projected a commercial vehicle pullout with usage approx. four times an hour and indicted that this pullout will facilitate sharing of this space by two commercial vehicles.
Two vehicles per space times four times per hour, estimated usage hours from 9:00 am – 11:00 pm are we to assume that 120 buses per day will be using these pull outs?

Will commercial tour buses that will idle while their passengers disembark and patronize the businesses in the project use this pullout?

If so what are the approx. projected lengths of stay of these buses in the pullout?

Will the busses be required to turn off their engines in these areas if their stays are in excess of 15 minutes?

What are the projected vehicle emissions of the idling buses during their length of stay? What would be the effects on the ambient air quality from these emissions?

The pollutants these buses emit in the pullout during a typical stay may include diesel fuel, engine oil, transmissions fluids, and other pollutants what are the effects of these pollutants to the near shore waters of the Pupukea Marine Life Conservation District?

Please describe in detail mitigation efforts to prevent these pollutants from entering the near-shore waters.

Section L - Secondary impacts on public facilities: Litter
Please consult with the Director of Health regarding is litter control program.

There appears to be eight spaces for food establishments in the proposed food court. With many food establishments with "takeaway" capabilities what measures will be proposed to limit the use of Styrofoam, plastic bags, straws or other manmade materials that are potentially toxic or lethal to marine animals thru ingestion or entanglement

The projected volumes of visitor/patrons are 5,000 per day, what are the direct effects to the nearby parks in relation to litter?

Would there be any restrictions placed on the take-away food court eateries to alleviate?

What programs would you implement for litter control?

What are the estimates of additional trash generated from take-away food containers, utensils and bags? What is the effect to the trash receptacles at these nearby parks?

Please describe the trash receptacles, in detail, the number of receptacles, current schedules of trash removal in the Sharks Cove park areas.

Please discuss in detail mitigation measures to prevent and control litter in the parks from the increase in takeaway food establishments.

Will the developer be mandated by the City to provide litter and trash pick up to compensate for the volumes of trash that will be placed in the limited trash receptacles at Pupukea Beach Park?

Will design changes to existing open garbage cans be necessary to prevent trash from blowing out of trash containers with no lids due to increased volumes of trash?

The prevailing trades pass over Pupukea in a west to east, north to south pattern. They blow from the top of the park toward the ocean. **What are the impacts of litter that not safely stowed inside trash receptacles flying off into the near shore waters and its effects on sea life?**

Impacts on Public Restroom and Shower Facilities:

Please consult with the C&C Parks & Recreation Divisions to ascertain the wastewater capacities in the Sharks Cove and Pupukea Rec. Center public facilities.

With a projected 5,000 visitors daily what are the projected visitor counts that might avail themselves to use the public facilities in the Pupukea Beach Park?

What would the projected additional water usage be from the increased usage?

What other effects will the additional users have to these Parks & Recreation public facilities?

What is the current budget for and maintenance schedules of the Pupukea Park and Sharks Cove park areas?

Will the increased usage affect the City's ability to maintain these parks? What are mitigation measures and estimated additional cost to the city to provide for adequate maintenance of these areas?

The final EIS [OR REVISED Draft EIS] must discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that the proposed action will or will not result in any significant environmental impact must be included.

Section M - PLANNING PROCESSES: INTENT AND PURPOSE:
The North Shore Sustainable Communities Plan, the O'ahu General Plan, and the Hawai'i State Plan call for the North Shore to be a rural community serving as an agricultural, recreational, and public open space area for the benefit of both residents and visitors.

We would suggest that a project with potentially over 80 retail, 10 restaurants and 10 office spaces proposed could substantially affect the economy of the community and civic centers of Haleiwa & Waialua Towns.

Please describe in detail and provide comparisons to other rural community commercial centers in the rural districts of the North Shore, Kuololooa, Waianae areas.

Please describe the populations they serve, the services provided and the density of each center.

Please include whether the existing centers that required widening or other improvements to Kamehameha Highway or Farrington Highway to support access to other commercial centers.

Please include whether the existing centers have underground parking.

Please provide comparisons to the immediate area to include other Conservation Districts, Beach Parks or other special natural features.

Please include details of the off street parking availability to these centers.

In the event the centers affect surrounding beach parks was any mitigation necessary after the implementation of these centers to compensate for any negative impacts.

The LUO states that it is a B-1 business district.

The intent of the B-1 neighborhood business district is to provide relatively small areas, which **serve the daily retail and other business needs of the surrounding population**. It is intended that this district be generally applied to areas within or adjacent to urban residential areas, along local and collector streets, **but not** along major travel routes or on a **large-scale basis**. It would also be applied to rural and urban fringe town centers which may or may not be located along major travel routes.

Section North Shore Sustainable Communities Plan and the designation "Rural Community Commercial Centers"

In the North Shore Sustainable Communities Plan, this area is identified as a "Rural Community Commercial Center" and it should contain a "small cluster of commercial and service businesses which serve primarily the immediate community" ... "and provide a range of goods and services to meet the needs of the surrounding residential communities and visitors to the North Shore..." The Plan also declares that uses in this area should be scaled to be compatible with the area's rural character and surrounding land uses.

Small-scale development would imply that the projects density would be in keeping with the plan and be compatible with the surrounding land uses.

According to the 2010 census, Pupukea/Sunset Beach (96712) has 7352 residents.

This would imply that the Rural Community Commercial Centers primary function would be to serve the 7352 residents of Sunset Beach and Pupukea [96712]. Not to exclude the other residents from neighboring communities and visitors, but its primary function is to serve the residents in the immediate community.

We have spoken with the branch managers of the Hale'iwa branches of the Bank of Hawaii, and First Hawaiian Bank as well as the Haleiwa Post Office and they have no plans at this time to relocate or open branches in the Pupukea area. The residents will still have to drive to Haleiwa, Kahuku and Laie to conduct their banking and postal needs.

How many businesses can be accommodated?

In the conceptional drawings there appear to be several kiosk's shown, how many kiosks can your court yard handle? Is this number included in your maximum retail establishment numbers?

Could this proposal be adjusted to a more appropriate size and scale?

How could the greater North Shore community sustain the viability of a project of this size and maintain the rural country atmosphere?

Will the delivery vehicles and commercial buses be allowed to idle while in the loading area or will they be required to turn off their engines?

Please provide data from the EPA Clean Air Act on the impacts to air quality to the project area and surrounding residential community from commercial vehicles and the projected vehicles a day to access facility?

In the event that these vehicles are to idle what are the projected vehicle emissions of these vehicles and how will these emissions effect air quality?

Please list the effects of these activities the residents on Pahoe Road?

What are the projected volumes of commercial delivery vehicles per day?

Will commercial buses and delivery trucks be allowed to park in "que" on Pahoe Road while waiting for an available loading dock?

Will the commercial vehicle be required to reverse into these loading areas? How will this affect the traffic on Pahoe Road?

What is the average noise level produced by the reversing safety horns/beeps?

What are the impacts to the surrounding residents by these noise levels?

What mitigation measures will be in place to minimize the vehicular traffic noise to the adjacent residential neighborhood?

Please address the effects of noise pollution both during construction and after construction to the immediate area.

Please consult with the Director of Health on ways to prevent excessive noise from both vehicular sources and stationary sources.

Please list the maximum permissible levels, and statewide rules and the permits necessary for the noise during construction and vehicular sources after construction on the immediate area.

Refer to Vehicular Noise Control for Oahu and relate them to your project and their relation to the delivery vehicles, commercial buses, and increase traffic of on Pahoe Road and Kamehameha Highway.

Please refer to Community Noise Control and relate them to your proposed project in relation to the proposed bar and restaurant proposed at the corner of Kamehameha Highway and Pahoe Road.

What are the permissible levels of noise in this rural residential neighborhood?

What are the potentially detrimentally affects upon the air or water quality or ambient noise levels from the project to the immediate area?

With regard to Air Pollution Control (HRS 342B) please consult with the Director of Health regarding your project and relate these to the Ambient Air Quality Standards and Air pollution control.

What are the current ambient air qualities of the immediate area?

What effect will your project have on the ambient air qualities?

What alternatives are there to mitigate the negative effects of the air pollution caused by vehicles accessing the project?

Section N - Scenic view planes

Significant Criteria # 13, Substantially affects scenic vistas and view planes identified in county or state plans or studies.

In the North Shore Sustainable Community Plan 3.1.3.7 Scenic Resources and Scenic Vies, list "the lateral views from Pupukea Beach Park" as a scenic view.

The draft EIS states that, "The views of the Plateau from the highway will be obscured by the proposed buildings".

The proposed project will substantially affect this scenic vista and the view planes identified in the county plans.

The beach park at Pupukea is located directly across from Kamehameha Highway. From the ocean and beach park, the views will also be obscured.

Beach and park users in the Sharks Cove/Pupukea area will be greeted by a two-story commercial structures overlooking the tidal pool area and heavily used public beach park. These buildings will emit the feeling of being next to a "Mini-Lahaina" like resort town, not our rural community.

In the artist conception drawings show the frontage of Kamehameha Highway located just off the sidewalk/promenade. With a projected visitor count of 5,000 per day, over 400 visitors and hour will be visiting the center. Beach goers and passer Byers will truly have a sense of being near a busy bustling shopping plaza.

The park users and beach goers will also be looking directly at the 85" long commercial bus stop. This area in the traffic study projects eight buses per hour utilizing the proposed commercial bus pullout. Visitors to the beach parks will also get the feeling that they are not in the country any more.

What are the proposed alternatives to maintain the vistas from Pupukea Beach Park as outlined in county plans?

Section - Underground Inject control program

Dept. of Health Chapter 11-19 Emergency Plan for Safe Drinking Water
Chapter 11-20 Rules relating to potable water systems
Chapter 1121 Cross-connection and backflow control
Chapter 11-23 Underground Injection Control

The final EIS [OR REVISED Draft EIS] needs to address the sizing and scale of wastewater mitigation and mitigation of storm water effluent carrying food truck residue to sensitive ecosystems. The current information is extremely inadequate for the scope of a Draft EIS.

In closing, we thank you for your consideration and cooperation in this process. We certainly look for forward to your responses.

Sincerely,

Ian Anderson, President
Save Sunset Beach Coalition
DBA: Save Sharks Cove Coalition
P.O. Box 301 Haleiwa, HI 96712
savehaleiwabeachpark.org@gmail.com

President: Ian Anderson / Vice President: Cora Sanchez / Treasurer: William Howes

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ian Anderson, President
Save Sunset Beach Coalition
DBA: Save Sharks Cove Coalition
P.O. Box 301
Haleiwa, HI 96712

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Anderson:

Thank you for your comment letter dated January 7, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *First of all we want to request that the Approving Agency: Department of Planning and Permitting to require the applicant: Honopahaku LLC to settle its Outstanding Accrued fine with the City & County of Honolulu, before a full review of the Draft EIS application.*

Additionally, the violations noted in the Notice of Order & the Notice of Violation must be resolved, before a full review of the Draft EIS application.

Response: All violations have been cleared, and all but one fine has been paid. When the City provides the settlement letter for the last fine, Hanapohaku will pay the fine.

Comment: *Regarding our organization, Save Sharks Cove Coalition, we NEVER received notification of this DEIS by U.S. Mail or by email [we have checked our records; please make sure to send notification on future document releases to the information shown on our masthead above]. We are shown in the document as having been sent a letter by G70 (Jeff Overton) that supposedly CC:'s our email address.*

Response: We will use the post office box address on your masthead for any direct communication regarding the project. Please note that the Hawaiʻi Administrative Rule §11-200-22 states: "The period for public review and for submitting written comments shall commence as of the date notice of availability of the draft EIS is initially issued in the periodic bulletin . . ."

Comment: *We are very concerned that the Draft EIS avoids showing the real impacts of the project. The Draft EIS attempts to use outdated and intentionally obfuscated study data as well as non-relevant study data, using consultants who have a track record of evading release of relevant data necessary to fully understand impacts. We are insisting that the consultant stop evading the core element of the controversy of this project and concede that an unacceptable cluster of food trucks imposes a significant risk to the sensitive ecosystem adjacent to the site.*

Response: The Draft and Final EIS documents are disclosure documents prepared pursuant to the Revised Ordinances of Honolulu, Chapter 25, Special Management Area, and consistent with Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health, Environmental Impact State Rules.

Comment: *This project clearly is demographically catering to over 70% visiting tourists, and therefore, It does not comply with the Rural Community Commercial Center design in the North Shore Sustainable Communities. This Draft EIS clearly is deficient in showing the true significant adverse environmental, hydrological, traffic and neighborhood impacts as well as irreversible ecological effects on the adjacent aquatic environments. We find that the consultants and the authors of the Draft EIS selectively omitted data on the project by using faulty assumptions and faulty modeling. Furthermore, the omitted data prevents a full understanding of the significant impacts, which would become irreversible if the project is approved as currently described on the very special areas adjacent to the project. Additionally, certain proposed changes in the Draft EIS and based on the presentation by G70 Representative Jeff Overton may trigger a completely new EIS application. The series of questions will be included in a contributor sequence: Questions and Critical comments from Neighbors [on Pahoe Road] that were shared with our organization:*

Comment 1: *The EIS shows a fence along the Sunset side of the project with no ingress to or from Pahoe road. The developer has also committed and promised that this will remain as part of the project plan. If removed the whole EIS process must start over.*

Response: The Final EIS shows a fence with no ingress to or from Pāhoe Road.

Comment 2: *The Pahoe Road Hui is also very concerned about the impact from the noise, lights and spill over from the business closest to the road and feel these issued must be mitigated prior to final approval and permitting.*

Response: The Draft and Final EIS describe minimization and mitigation related to noise and lights in *Section 3.15* and *3.17*. Noise will be minimized through design of the buildings and vegetation screening on the north and east sides of the project. The restaurant will utilize solid exterior walls with fixed widows on the Pāhoe Road side and provide enclosed interior air-conditioned space. The exterior of the restaurant will be acoustically designed to reduce exterior noise levels to 45 dBA or less at the closest residence, which meets the nighttime maximum permissible sound levels for the residential zone.

Exterior lighting at the rural community commercial center will comply with the objectives and policies of Hawai'i Revised Statute Chapter 205A Coastal Zone Management Section71(b), which requires all outdoor lights to be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights. Wall-mounted lights will be pointed down and otherwise shielded, and lights used in open or parking areas will be full cutoff or fully shielded (EIS *Section 3.17.2*).

Comment 3: *While spill over traffic from the project has slowed somewhat there is still a significant amount of traffic that comes up Pahoe road looking for access to the project area and has to turn around in owners drives ways etc. Pahoe road is privately owned where many children play and the additional traffic is a potential for pedestrians to be impacted.*

Response: Customers to the rural center will be guided to the main entrance via clear signage (EIS *Section 2.4.1*). There will be no access to or from the privately owned Pāhoe Road.

Comment 4: *Appendix F Traffic Impact Analysis Report page 35 graph [table 7] shows traffic going from A to C & D conditions along Kam hwy from Pupukea road through Pahoe road in both directions. This is very unacceptable for the local community in general.*

The report also uses the 2010 HCM Highway capacity model. Though this might work on the mainland and in the city like Honolulu, the NS is a rural area with big surf, tourist long weekends good beach days which are all local conditions that these models cannot account for.

Response: LOS C and D are acceptable operating levels at intersections with Kamehameha Highway according to both HDOT and the City & County of Honolulu (EIS *Section 3.13.2*).

Comment 5: *This traffic report admits more traffic will be generated from the project and claims "No Significant Impact" the traffic is terrible now, so how can adding more vehicles no be an "Significant Impact" to the roads, local community and pedestrians?*

Response: The analysis methodology applied in the Transportation Impact Analysis Report (TIAR) utilizes approved models for predicting traffic flow. *Section 3.13.2* of the EIS states: "DOT and the City's Traffic Review Branch define a <u>significant intersection impact</u> when operation of an intersection changes from LOS D or better to LOS E or F" (emphasis added). Note that Table 7 of the TIAR (included in the EIS as Table 3-4) shows that the intersection of Kamehameha Highway and the project driveway will typically operate at LOS C, and possibly reach LOS D on Saturday peak hours. This does not reach the DOT and Traffic Review Branch definition of "significant impact."

Comment 1: *General Comments and questions: In the water use and waste water sections it says average water use will be 8160gpd and max of 12240 gpd. Most of this might be waste of some sort and the design flow for waste is 10533 gpd. Seems to be cutting it short. The DEIS takes privilege to compare the development to 15 homes with 4 people per home and Mr. Overton pointed to and used Pupukea as the comparison. Those are acre lots and so the comparison is 15 acres to 3 acres. Four people per home equals 60 people yet the developer is saying this will employ 80 to 90 people and then there are hundreds of potential customers each day. We don't see how this is a good nor fair comparison.*

Response: Guidance for the wastewater system capacity is provided in Hawai'i Administrative Rules §11-62 (Wastewater Systems), and the system must be reviewed and approved by the Department of Health (*Section 3.16.2*). The system capacity accounts for employee and patrons of the center, as well as provides an allotment for transient demand such as employees and customers of mobile food establishments. The number of employees on site will not be the same as the jobs created by the center. *Section 3.11.2* has been updated to note the long-term jobs to be created will be 80 (versus 86 in the Draft EIS). However, fewer employees will be on site at any one time.

Comment con't: *The Draft EIS states: Employ retention and detention methods that allow for the gradual release of stormwater. Where feasible, use open spaces, including parking lots, landscaped areas, and parks, to detain or allow ground infiltration of storm water flows to*

reduce their volume, runoff rates, and the amounts of sediment and pollutants transported. How does the proximity of the project modify modeling and assumptions in curtailing high velocity stormwater release into nearby coastal area and restrict release of potentially contaminated buildup at applicant site from being inserted into sensitive marine environment?

Response: The citation appears to be from Chapter 4, *Table 4-6*, citing the Guidelines of the North Shore Sustainable Communities Plan. Drainage and Surface Water specific to the project is explained in EIS *Section 3.6.2*. Long-term management of storm water will comply with the recently enacted City and County Water Quality Rules. Methods include installation of LID post-construction treatment controls to retain as much storm water on the site through infiltration as feasible, and to filter and treat storm water released off site to the maximum extent practicable, as further described in the section.

Low impact development (LID) features to be installed on the site and include bioswales, rain gardens, planter boxes, sand filters, and permeable paving material. These controls both slow and spread runoff over vegetation and allows storm water to infiltrate, that is to soak into the ground, thus reducing the quantity. Permeable pavement will be used for the transient use/parking area mauka of the central green, which will reduce and dissipate sheet flow and allow infiltration of storm water.

Sub-surface storm water detention storage is another LID to be installed that will reduce both the volume and flow rate of storm water from the parcels. For more frequent, small storm events with rainfall amounts of up to four inches, all of the runoff would be retained in the detention storage system and eventually percolate back to groundwater. With this improvement in surface runoff water quality, the marine assessment technical report (EIS *Appendix C*) found no potential for adverse effects to near shore ocean water quality due to suspended sediment and urban runoff contaminants.

Comment 2: *We were told the bathroom use would most likely be controlled with a key by vendors. That is a lot of power at a location like this as we all know since septic and bathroom access has been a main issue for some time now. Will it be "No Public Bathrooms" like Foodland? Will each lunch truck have a key? What are the plans for bathrooms and their use by all of the people this project hopes to attract?*

Response: As noted in the response to the previous comment, the wastewater system capacity provides an allotment for transient demand such as employees and customers of mobile food establishments. Additionally, the system's ground treatment step, utilizing absorption bed disposal, will be double the required size for 100 percent redundancy. Bathrooms are intended for patrons of the rural community commercial center and will have some type of control to ensure a safe and clean facility.

Comment 3: *Is Foodland or will Foodland be added to the conditional use permit so that all 4 lots are treated as one zoning unit? - Additional Items Of Concern With Foodland: [1] Large Food Delivery trucks accessing rear of store creating traffic obstructions on Pupukea Road; [2] On-going sewage and greywater issues from Foodland store and lack of acceptable mitigation efforts to solve these concerns [3] parking integration concerns based on scheduling of the separate business opening and closing times and sharing parking lot access.*

Response: In compliance with the 1996 development agreement, the redevelopment plans for the Hanapohaku parcels included two proposed connections with the Sullivan Entities land. Depending on improvements at the boundary, a Conditional Use Permit for Joint Development may be required by the Department of Planning and Permitting for the Hanapohaku and Foodland parcels. This potential permit requirement has been added to *Table 1-1* in the Final EIS.

Comment 4: *The single consolidated access/exit driveway with a nearby bus stop has great potential for traffic stops and delays greater than the .9 seconds in the DEIS. The length and location of the two-way left turn lane might look like the easy way out for the developer but this is going to be an obstacle course for residents and visitors alike. One only has to watch how the Foodland access points work with a single left turn lane. Why can't Foodland keep its present entrance and possibly give up the exit? How wide is the proposed 1 entry / 2 exit access? How wide is Kamehameha Hwy right of way? There are questions as to how the turn lane will fit and work in this section not to mention trying to control pedestrians crossing randomly like they do now.*

Response: Based on the current DOT standards and traffic engineering practice, the existing Foodland driveways on Kamehameha Highway are located too close to the Pūpūkea Road intersection; this information has been incorporated into *Section 3.13.1* of the Final EIS. By closing the driveways and consolidating traffic to one new driveway on the highway, turning movements will occur at more of a midblock location between Pāhoe and Pūpūkea roads. The addition of a center-two way left-turn lane will provide additional capacity and storage for traffic in this corridor, expediting flow and enhancing safety for vehicles.

High visibility pedestrian crosswalks are proposed for the pedestrian path to be installed at the project frontage along Kamehameha Highway and for on-site pedestrian safety. See *Section 3.13.2* and *Figure 3-8* of the Final EIS.

Comment 5: *The DEIS states that they are required to put in 75 parking stalls but brag that they are putting in 125. They also mention allowing 8 lunch wagons to operate that also are required to have parking. If 8 trucks need 6 spaces each that is 48 spaces and that added to the 75 equals 123. What's really being said? There is no mention of how many spaces are handicap and EV. Just say what it really is and keep in mind that like Haleiwa and Foodland, the employees use a lot of the parking even if some walk or bike. With all the employment being offered according to Mr. Overton one could estimate employees would use 1/3 spaces. Foodland can't manage beach use parking on their property. What are the plans for who uses the parking?*

Response: Parking and loading standards are set by the City's Department of Planning and Permitting and are intended to minimize street congestion and traffic hazards, and to provide safe and convenient access to locations including residences and businesses. The parking requirements are documented in the Land Use Ordinance (ROH Chapter 21). The number of parking stalls are calculated based on gross floor area (approximately 34,500 square feet), requiring one stall per 400 square feet of retail, business, and restaurant space (applicable to this center).

The requirement for the proposed center is 87 parking stalls. The requirement for parking associated with mobile food trucks in designated areas of the Hale'iwa Special District is six parking stalls per mobile food truck. This ratio is anticipated to be codified in the LUO outside of the Hale'iwa Special District and is being applied to the project. With a total of 126 parking

stalls enabled by the design, 6 mobile food trucks can be accommodated with the required 36 total stalls.

As noted in your comment, the commercial properties activities on the mauka side of the highway already exist and are burdened by the overflow of vehicles associated with park users. Parking for the private businesses will be managed at the rural center, including Foodland Pūpūkea, to restrict people from parking vehicles solely for beach park access.

Comment 6: *The timing of deliveries and refuse service should be clearly addressed. At present those services affiliated with the Foodland have lowered the quality of life for neighbors and community due to early morning noise and traffic stops caused by trucks blocking Pupukea Rd.*

Response: The following sentence has been added to *Section 3.13.2* of the Final EIS: To minimize delays caused by trucks accessing Foodland's loading dock, deliveries should be scheduled during off-peak times in the early afternoon.

Comment 7: *With the alternative of a 45,000 sf to 50,000 sf commercial shopping center mentioned in Sec.5.2, it seems possible the developer will go bigger once the approvals are given. G70 has expressed this would be approximately 40% of LUO capacity and provide a wider range of goods and services for patrons. How does the community know where this is going if the DEIS passes?*

Response: The EIS is a disclosure document. To comply with the content requirements under Hawai'i Revised Statutes (HRS) Chapter 343 and its implementing rules Chapter §11-200 Environmental Impact Statement, alternatives to the Proposed Action must be analyzed. The Proposed Action as stated in *Section 2.4* of the EIS document is the preferred alternative of the landowner: the rural community commercial center with approximately 28,300 square feet of leasable space. Once the EIS process is complete, permits will be secured based that will specify the allowable development.

Comment 8: *The DEIS has used a thousand words to paint a picture and in the DEIS, G70 has used drawings (pictures) to express a thousand words. They are stated to be conceptual but why can't they be more realistic. For example figure 2-4 shows 29 coconut palms and almost all are as tall as the buildings with a few much higher. In figure 2-5 Kamehameha Hwy is lined with coconut trees. Figure 2-3 shows palms in front of Foodland and figure 2-4 shows the 4 trees that are there now. Is there a landscape plan in place or is the artist making this project look more appealing with all the trees and greenery? I think much of it is just art. Foodland had hedges, nice grass, and even trees in the parking lot but very little of that survives today for a variety of reasons. The community still has to view a large parking lot and store because Foodland finds it more important to be seen than blend in behind thicker roadside landscaping.*

Response: The Conceptual Site Plan (*Figure 2-3*) incorporates the proposed landscape plan and includes palm trees along Kamehameha Highway.

Comment 9: *The conceptual idea is used with how the lunch trucks appear. Except for one truck shown in figure 2-5, the other drawings show what appear to be a few cars or pickup trucks parked with one or two people talking story. Where are the trucks, people, tables, umbrellas and lights at night?*

Response: The Final EIS includes a revised *Figure 2-6* shows the parking spaces that will be made available to mobile food trucks. The new center will not provide the same type of seating/eating areas as the current site; the Central Green will provide one area for those who opt to eat on-site. Please refer to the response to Comment 2, above, regarding lighting.

Comment 10: *Hanapohaku LLC does not have a good track record with everything associated with this property. Inactions and problems continued to plague project while continuing to loss the trust of the local community.*

Response: The owners have diligently addressed the concerns of the past through the approval of an SMA Minor permit and compliance with its conditions for current operations. Information relating to permit compliance has been updated regularly on the Hanapohaku website (http://mccullyscorner.com/). The owners will continue to have a very open dialogue with the community and will continue to attend regular meetings of the Sunset Beach Community Association. By maintaining this close relationship the owners will be aware of community issues and concerns, particularly those involving the rural center, and appropriately respond to these concerns.

Comment 11: It *is interesting how this project is being referred to as –Rural – Community – Commercial – Center. Yes most of us feel we are rural and like it that way. We have a nice community center, which G70 helped design, right down the road. The commercial centers for Paumalu (Sunset Beach), Pupukea and Kawailoa are Haleiwa / Waialua as well as Laie / Kahuku and should remain that way. Haleiwa has become a tough place to navigate with all of the autos, bused in tourists and pedestrians which are drawn in part to the new KS project of stores. This Commercial Center being planned is not going to make our rural community better and I fear just the opposite….another crowded spot in the road where life slows down but not in the rural kind of way. This development will take away much of the rural character of our area and negatively impact the lives of our residents and visitors (although most visitors don't realize it at the time).*

Response: Please see *Section 2.3* of the EIS which explains that the North Shore Sustainable Communities Plan designated the parcels as the one "Rural Community Commercial Center" to consolidate commercial uses for the region. The policies and guidelines applicable to the designation are also included in Chapter 2 (*Figure 2-2*).

Comment 12: *The proposed crosswalk adjacent to the project because of it's* [sic] *near proximity to the Pupukea road Stoplight and existing pair of crosswalks is an obvious conflict in logical traffic design. It will not necessarily improve safe pedestrian transit and will simultaneously constrain traffic flow. Even if the project is not approved, the fact of the current unpermitted activity at the site has caused dangerous pedestrian transit and illuminates that a crosswalk at this location will only exacerbate the road hazards. This needs a modern and far more advanced study then using old and underutilized modeling methodology. Please answer this concern as many people are confused by the consultant [G70 Jeff Overton] responses to inquiries regarding this and related components of the traffic mitigation problems.*

The described LOS modeling is using antiquated assumption models for this environment; the assumptions are flawed because the observations have not utilized seasonal components from winter surf contest activity at Waimea bay, Ehukai beach or Sunset beach; there is no modeling using data that is contemporary and comprehensive over multiple seasons and weather

conditions and surf conditions [existing flow is antiquated data & surf conditions are a major component of the deficiencies of these observations] and extrapolating ambient flows/growth, areawide flows/growth.

Response: The idea to create a new crosswalk near the corner with Pāhoe Road came directly from a well-received suggestion offered by a community member at the May 2017 meeting of the Sunset Beach Community Association. The project team agreed to consider a crosswalk at the location and included the concept during a scoping meeting with the HDOT. Since presenting the concept in the Draft EIS, other members of the community expressed concerns about the crosswalk. The project team continues to refine the crosswalk safety concepts and will consult with HDOT to determine the suitability of a crosswalk at the Pāhoe Road location.

Regarding the LOS comment, please see the response to Comment 5: The analysis methodology applied in the TIAR utilizes approved models for predicting traffic flow and has been adapted as needed for the Kamehameha Highway setting. The days selected for counts and the use of those counts in the study were intended to provide operations on a typical day during the high-traffic surf season. It was not the intent of the analysis to provide worst-case conditions. It is important to note that traffic counts can vary from day-to-day by five percent or more depending on the location, however, even adding an increase of non-typical 5 percent would not result in any significant change to the identified impacts or proposed mitigation for the project.

Comment 13: *ref: The 1.84-acre corner parcel at Kamehameha Highway and Pūpūkea Road contains a Foodland grocery store. Owned by the Sullivan Entities, this parcel is associated with the project because of a development agreement established among the four parcels in 1996 to achieve the mutual benefits of an integrated neighborhood shopping center without obstructing walls or fences between parcels. The Sullivan Entities do not own any interest in the three other parcels or in Hanapohaku. Only minimal alterations to the Foodland parcel, i.e., a common egress/ingress point from Kamehameha Highway, limited parking lot improvements, and related landscaping are contemplated as part of the project.*

Based on this development agreement there is described an easement that connects the Honopahaku project with the property owned by The Sullivan Family Limited Partnership and the Maurice and Joanna Sullivan Family Foundation (collectively the Sullivan Entities). This relationship stated in the Draft EIS makes it clear that both of these sites need to be reviewed for their impact to the area in a combined fashion. Therefore, the EIS study needs to conduct a expanded traffic study of impacts based on its thouroughfares [sic] *and other related elements of the foodland parcel and its synergistic impacts. Since there have been substantial community concerns regarding the impacts on Pupukea road traffic due to the loading-dock in the rear of the foodland building and this issue should be relevant to the traffic study analysis.*

Response: The Traffic Impact Assessment Report (TIAR) included in the Final EIS *Section 3.13 Traffic* addresses existing traffic conditions and future traffic conditions for the rural center. With the new driveway configuration, the study addresses future conditions in a combined fashion, as you recommend. The TIAR notes that Foodland deliveries should be scheduled during off-peak times in the early afternoon to minimize delays to vehicles traveling on Pūpūkea Road.

Comment: *The next set of questions and comments cover three main topics of concern: Ecological impacts: No matter what kind of wastewater treatment system is employed, given the proximity of the Shark's Cove Marine Life Conservation District, this ecological gem should not be subjected to any more risk of degradation than it already is. The "studies" carried out in the MLCD were pathetically inadequate and none of the previously published studies of the area were reviewed or included in the references. Run off and leaching of cleaning chemicals, engine oil and other substances were not addressed. Actual usage of toilets is not accurate. Estimates of rainfall events are not accurate. The list is long on risks and questions.*

Response: Please see *Sections 3.6* and *3.7* in the EIS for the existing groundwater and marine water conditions in the area. The rural center is located next to the Foodland grocery across the Kamehameha Highway about 500 feet from the coastline at its closest point. Given the North Shore community's high sensitivity to protecting ocean water quality, the project team has been especially thorough in its planning for the project's drainage system, and in its surface water quality protection and wastewater management systems. More than over 500 cesspools and septic systems serving residences in the sub-area currently exist, and discharge in excess of 100,000 gpd into the shallow groundwater in the Sharks Cove area. These existing contributors produce a substantial nutrient load to nearshore waters and may also input some chemicals.

Utilizing the most current technical approach to aerobic wastewater treatment and ground disposal, the rural center will represent a model approach to sensitive environmental planning and design. Nutrients and pathogens will be removed with much greater efficacy than those systems currently serving the community. The State Department of Health Wastewater Branch has stated its agreement with the planned approach to wastewater management at the rural center, with future review and approval of the system design and operational plans to be required in the future. The manager of the rural center can institute signage and tenant/employee education as an additional measure to minimize inputs to the system which could pose environmental risks.

Comment: *Impacts on quality of life of North Shore residents: The number of food trucks is vague, to say the least. This results in an inability to accurately forecast traffic and based on projections in the document -a parking apocalypse. The rerouting of the entrances to Foodland and the "Center" into one, will result in perhaps being able to get into the development but will make it extremely difficult to park and then get out of the place. Especially aggravating will be trying to get in from Kahuku side and out going in the direction of Haleiwa.*

Response: Please see previous responses related to the number of food trucks that can be accommodated on-site (six trucks) and response to Comment 4 related to the consolidated driveway entrance. *Table 3-4* in the EIS shows that the turning movements at the intersections of the new project driveway and Kamehameha Highway will operate at an acceptable Level of Service (LOS) C, with the busiest weekend peak hour operating at an acceptable LOS D.

Comment: *Past behavior as a predictor future behavior: Last and certainly not least is the fact that the landowners of this property and the people currently seeking to build their "Center" have operated illegally for years. They have flagrantly violated state laws. It is my understanding that they have accrued over $100,000 in fines. The DPP subsequently issuing them City's approval of SMA/2017-21 permit defies common sense. The situation raises serious questions about the decision makers involved at the DPP.*

Response: On February 9, 2018, Hanapohaku received notice of the clearance from the City DPP for the last outstanding violation on the land. Hanapohaku remains committed to following all procedures set out by DPP in ensuring that every step forward is in full compliance.

Comment: *The pictures used in DEIS are old. They do not show the illegal grubbing, grading and building on the property. Please show current status and identify all of the work done with and without existing permits.*

Response: Improvements are being made in compliance with SMA Minor Permit 2017/SMA-21, which was issued in August 2017. Changes continue to the property as grading and building permits are issued for the permit-specific improvements. The photos provide sufficient information to portray the project site in combination with the descriptions of existing conditions and proposed conditions provided in the EIS.

Comment: *Proposed Action Page 1-9 - Page "committed to pursuing Hawaii based businesses" "urgent medical care services, credit union, professional services, surf shop and action sports, fitness studio, child care, health food market/deli, mobile food establishments and restaurant." #1 There are already established alternatives to putting new entities here. #2 Even if one could appreciate that it would be a "nice idea" one might not necessarily want such establishments in this neighborhood. #3 Being committed to pursuing Hawaii based businesses sounds good but there is no guarantee that those are the business that would be on the property and no guarantee that they would be Hawaii-based.*

Response: We acknowledge the comments (numbered #1, 2 and 3) above.

Comment: *"long drives to urban centers on O'ahu"? 1-14 It's OK. We are used to that. We can go to Haleiwa and/or Kahuku.*

Response: We acknowledge the comment.

Comment: *1-10 detention storage system "the rural center's drainage system will have a significant environmental benefit in comparison to the present use ". This makes no logical sense since the present design of Legal system was used in over capacity and the proposed and installed system was done without permit and cannot be accurately quantified in relationship to standards which do not address the sliding scale usage proposed.*

Response: The comment is unclear as to what "legal" system is references as being "Over capacity." Please see EIS *Section 3.6 Surface Water and Drainage* for the existing conditions, including regulatory requirements, and the specifications of the proposed system. The future conditions – which anticipate improved storm water runoff quality and reduced quantity – are described in *Section 3.6.2*.

Comment: *1.4.2 Adverse Impacts: "Disposal of treated wastewater effluent will slightly increase the groundwater concentrations of nitrogen and phosphorus. The impact of the increased nutrients in groundwater will not be realized until the groundwater reaches the marine environment. The additional 4.3 percent nitrogen and additional 7 percent phosphorus would likely be undetectable in the marine environment at distances from the shoreline where marine communities occur (Refer to Section 3.7.1 Marine Environment: Probable Impacts and Mitigation Measures)."*

How does the consultant, Dr. Dollar (and the author of Draft EIS), justify his inability to identify the obvious dismissal of significant issues with the elevation of these components in the marine environment? The term undetectable is ambiguous and what metric will be used to determine a "true" baseline prior to the permanent increase of the introduced components into the near shore water environment. Even if this were true that the additional nitrogen and phosphorus would be undetectable in the marine environment at distances from the shoreline where marine communities occur - #1 your EIS lacks discussion of other contaminants, for example engine oil, cleaning products and other chemicals which will likely percolate through the soil and or runoff to the ocean. #2 What are you talking about? Marine communities occur at the shoreline.

Response: The marine water quality and biology assessment prepared for the EIS followed accepted scientific sampling and analytical procedures for evaluating nearshore environmental conditions, and predictive nutrient concentration projections in conjunction with the inputs determined in the surface water and groundwater quality assessment. The typical urban runoff contaminants you describe are managed through long term on-site low impact development features and best management practices.

Comment: *"An additional 1,322 net new daily vehicle trips are projected from the development of the rural center. During midday and evening peak hours, a total of 65 net new trips (29 inbound to the center and 36 outbound from the center) are anticipated; Saturday midday peak hours total 98 (51 inbound and 47 outbound). The impact of the increased traffic related to the project at the intersection of Kamehameha Highway and Pūpūkea Road would continue at level of service (LOS) A during both peak hours of traffic, with LOS B during Saturday peak hour traffic. The potential delay for a vehicle under LOS B conditions would be an additional 1.7 seconds over the near-term baseline conditions. DOT and the City's Traffic Review Branch define a significant intersection impact when operation of an intersection changes from LOS D or better to LOS E or F. The rural center construction will not significantly impact traffic in the region." Even if your figures are correct that is 1,322 net new daily trips, that is 1,322 trips too many. Your projected delay time does not come close to the gridlock that would ensue were this misguided project actually be built. Based on the lack of parking space for the proposed development compounded by the rerouting of the entrance and exit, it would be a frustrating experience for people just trying to get in and out of Foodland.*

Response: The 1,300-additional daily "vehicle trips" do not represent the number of additional vehicles on the road, but rather the number of vehicles turning into and exiting the site. Thirty percent of those trips (396) are assumed to be cars already on the road. Therefore, net new vehicle trips because of the project is projected to be 926 daily. The Final EIS has been updated to show the correct number of net daily trips.

The trips are distributed throughout the day, with the peak hour ("rush hour") and typical mid-day hour projected at an additional 65 additional turns during those hours (29 vehicles turning in, and 36 exiting the site). Saturday trips are projected to be slightly higher with 98 midday trips (51 turning in, and 47 exiting the site). So, the actual number of vehicles would be approximately half the net new vehicle trips.

Comment: *If parking is behind the buildings – how does that cohere with the parking being in front of Foodland? Does the consultant/author of the DEIS understand the contradiction of off-*

street traffic flow regarding this incongruity? Several experts have voiced confusion that this asymmetrical design is being proposed as it is likely going to be a gridlock situation in the parking lot. This parking lot integration needs a Supplemental Draft study to understand the interconnection of these parking areas and the future gridlock and synergistic complexities of traffic flow at this critical area on Kam. Hwy.

Response: No supplemental draft study is required. The transportation analysis report (TIAR) conducted for the project used a correct technical methodology to properly assess the turning movements with projected traffic for the site taking into consideration current and future traffic related to Foodland. The guidelines of the North Shore Sustainable Communities Plan (2011) for the rural community commercial center state that parking should be located behind buildings or other methods used to visually screen parking from the street.

Comment: *"The Sunset Beach/Pūpūkea community has expressed that some existing commercial operations at the property are less desirable, such as the disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, haphazard vehicle ingress/egress, and non-focused pedestrian access. With the City's approval of SMA/2017-21 there is authorization to continue with a conditional use of the property, with very specific actions required of the owners to manage activities to minimize effects to neighbors, the community and the environment. Importantly, it remains the stated purpose of the owners to diligently plan towards the long-term objective of creating the Rural Community Commercial Center, as they seek to achieve the common objectives of the community and government planning policy for future use of this property."*

Why would the owners suddenly diligently plan towards the long-term objective of creating the Rural Community Commercial Center, as they seek to achieve the common objectives of the community and government planning policy for future use of this property? What changed? Did we miss something? They have acted in flagrant violation of DDP regulations, Department of Health regulations amongst others for years. They do not appear to have any intention of paying the City and County fines that they have accrued.

The owners might have thought to act on these intentions earlier if they had been of any real importance to them. They have not only shown themselves to be out to rake in as much cash as possible without regard for the law, they have shown themselves to be very poorly organized. This combination does not bode well for an expanded operation so close to one of the most diverse and fragile marine ecosystems and for the ability of residents to navigate the single two-lane highway that is our lifeline and environs.

"2-3 The project site currently houses a small surfboard retail and rental establishment (North Shore Surf Shop) and a beachwear/swimwear store (Seamaids), a real estate office, a commissary (servicing one food truck) with office, and five mobile food establishments (food trucks). Supporting uses currently on the property include food truck seating areas, portable toilets, portable hand-washing station, parking areas, trash dumpsters, fences, water lines, electrical lines and landscape. Drainage controls have been added to manage storm water runoff. The commercial operations on the property are entitled under Special Management Area (SMA) Use Permits, including an SMA – Minor in 2017 (2017/SMA-21). Hanapohaku is to comply with specific terms and conditions to clear past use violations. Current compliance actions

include settlement of fines and obtaining site development and building permits. The existing uses will be completely removed for development for the Rural Community Commercial Center."

Note settlement of fines as opposed to payment of fines. Does this imply that developer will attempt to evade payment of the existing accrued fines?

Response: The questions asked in the preceding paragraphs relate to the approval of plans under 2017/SMA-21 Minor Permit, and prior violations and fines. All violations have been cleared and all but one fine had been settled as of this letter response. Hanapohaku will pay the outstanding fine once it receives the settlement letter from the City. There has been is no, nor will there be any, attempt to evade payment of fines. The owners have chosen to develop the rural center planned for the property as guided by the North Shore Sustainable Communities Plan.

Comment: *"Vehicle access can periodically be blocked from the hardscaped area adjacent to the central green to allow for periodic pedestrian-friendly community gatherings and cultural events, such as art shows, farmers' markets, mobile food trucks, and music and dance performances." Periodically blocked means even less parking spaces. Page 2-17 States that the Rural Center may include:*
"• Urgent Care – small scale medical service clinic for non-emergency needs" Kahuku Medical Hospital and outpatient center, Kaiser Permanente medical center, Haleiwa medical center and Wahiawa General have us pretty well covered as long as we can get there ie. The road is not blocked.
"• Pharmacy & Health Products – small scale pharmacy, health products, organic products" Foodland, Longs Haleiwa and Foodland Laie, Longs Hauula and Celestial Natural Foods do a pretty good job of providing us with above named products and services.
"• Bank – small scale bank branch, financial services" There is a BOH ATM in Foodland, there are banks in Haleiwa and Kahuku.
"• Business Center – copy services, business supply, package shipping/delivery, private post office" Why? People who work from home here have figured out how to get these services and or do them themselves. People have scanners and printers etc. "
• Professional Services – dentistry, chiropractic, psychiatry, legal, accounting, etc.
- *Real Estate Office – continue/expand an existing, on-site business*
- *Surf Shop, Beach Apparel & Action Sports Retail – continue/expand existing, on-site business*
- *Other Retail - art gallery, cultural arts, music and jewelry"*

Waimea Valley, Turtle Bay and Haleiwa town all provide opportunities for "other retail businesses.
"• Yoga & Fitness Studio – multipurpose studio, with potential for dance, hula, music" These activities are offered at Turtle Bay Resort, Sunset Beach Rec Center, Waimea Valley, Haleiwa town and elsewhere.
"• Child Care Center - day care center for families" There is not enough parking or outside space (protected) for this.
"• Community Organization – office space for local community/environmental organization" Really like who? Would the owners offer free office space to Malama Pupukea Waimea?
"• Quick Service Food – mobile food trucks offering different food types, affordable pricing" Thanks but we have loads of options up here in that department. Brick and mortar restaurants

that following the laws pertaining to their activities have a hard time competing with so many food trucks. Safety and sanitation in these places is not the best.
"• Health Food Market/Deli – dry goods and grab-and-go food"
Celestial Foods is a locally owned business that has been providing this for decades. The Beet Box and Killer Tacos, Sprout, Il Gelato, Kahuku Farms, Fiji Curry House among others provide pretty healthy food fast. They are locally owned.
"• Restaurant – Full service restaurant with bar, with both indoor and outdoor lanai seating"
Turtle Bay, Haleiwa and Waimea Bay all have great options for this type of establishment. I am concerned about the lighting of this business. Particularly the lanai lighting projected to be so near the MLCD.

"The permeable paving material on the lower parking area includes a design to tie the landscaped areas to the buildings (Figure 2-3)."Actually this looks to be the parking lot for 4 of the food trucks. The other three are on the mauka side of the building.

The projected use of water is 8,160 gallons per day in when the current use 2,200 gallons per day. Not sure how they plan to run the proposed operation on so little water. It is projected that there will be 6,920 gpd out. OK, so there will be some irrigation of landscaping. Which, by the way, will not survive the trampling of people. Checkout Foodland next door. The current owner uses vast swathes of plastic grass to cover the ground because apart from a hard surface it is all that can withstand the foot traffic. Here is the kicker -The current water input is 2,200 gpd and wastewater output is 400 gpd. Where are the other 1,800 gallons per day going?

Response: The preceding comments contain questions about the need for office use and potential space offering to not-for-profit community organizations, which is reflective of input the owners have received in discussions with local residents and an on-line survey of the community. Water use and wastewater generation are based on agency standards and guidance. These technical factors will be reviewed and approved by the State and City agencies with these responsibilities.

Comment: *With respect to the section titled Natural Disasters please respond to the following comments. Hurricanes are increasing in number and strength. With them will come dangerous storm surges. Kamehameha Highway will be washed out in various places. Although the document states that the property is not with in the Tsunami Evacuation Zone it is within the Extreme Tsunami Zone. Kamehameha Highway is largely an arbitrary line that delineated the tsunami zone. In the event of an earthquake Kamehameha Highway would be impacted and there would be possibility of a tsunami. Regarding flooding, there is projected to be an increase in intense precipitation events and it is likely that water would overwhelm the precautions proposed. We had 6 inches of rain in 24 hours last spring in this area. Increased coastal erosion is projected as a result of sea level rise. Again, Kamehameha Highway will be directly impacted by this along with many homes. The short term and long term impacts of these disasters on the community and businesses remain largely unknown. Also: Not mentioned in the section on Natural Disasters if the fact that there are lava tubes and that sink holes occur in this area.*

Response: The design of the project must meet the standards set by local ordinances and building codes. Natural disaster potential is factored into the requirements for seismic building design and site drainage design.

Comment: *Flora and fauna- Is there a caretaker? Yes, apparently someone lives in the house that is the commissary also vagrants are allowed to stay in containers in the back of the property. This would appear to be illegal.*

Response: There is a caretaker for the property who cares for the overall grounds of the existing commercial property, landscape and general upkeep. The rural center will not have a live-in caretaker, rather maintenance and security personnel operating on a daily schedule.

Comment: *Lights need to be directed down and away from road/ ocean. The section on Groundwater Conditions Beneath the Project Site reveals that ocean water underlies the site at depth. This is troubling. Contaminants will find their way to the ocean and apart from phosophorus and nitrogen no other substance was mentioned. There is always the possibility that any waste water treatment system will be overwhelmed or have a spill no matter how good. We have had spills of sewage here at Turtle Bay and we have a fully fledged wastewater treatment plant reclaiming sewage back to R2 water for irrigation. "Somewhat higher nitrogen levels in the down gradient well (B-7) may reflect input from present use of the site". This is disturbing.*

Federal, State and County regulations require that receiving waters be protected from pollutants associated with land disturbance, surface hardening and land use activities using implementation and maintenance of BMPs. Pollutants of concern include sediment, nutrients, trash, pathogens, pesticides, oil, grease, hazardous and toxic waste, metals and organic compounds. Yes, they only talked about nitrogen and phosphorus… These issues need to be addressed in detail and if not adequate than the response from developer should require an additional round of revision until these issues are adequately considered with appropriate methods of remediation offered.

Regarding the proposed "subsurface detention chambers" they sound potentially fragile. Not only will the chambers be difficult to shore up, there will be buildings etc. on them and there are numerous underground caves and lava tubes in the area. "Overall, the rural center's drainage system will have a significant environmental benefit in comparison the present use.." The present use has been not abiding by regulations and laws for years. Has the consultant obtained geotechnical and hydrological review by a licensed engineer? If so, where are the accurate bore samples of the site that are necessary to substantiate the poorly stated assumptions?

Response: The project will comply with the City requirements for lighting, and direct lighting downward to avoid effects to seabirds. The wastewater system will be designed and operated according to the State Department of Health requirements. The drainage system will be designed and operated in accordance with City drainage standards. Licensed geotechnical and civil engineers have been engaged by the owners for the studies and project plans.

Comment: *Are the two large parking spaces for tour buses or deliveries or both?*

Response: No tour bus parking areas are provided. Delivery loading spaces are provided as required under the LUO.

Comment: *"The pattern of increasing salinity and decreasing nutrient concentrations with distance from shore result from concentrated input of groundwater to the ocean at or near the shoreline throughout the region across Kamehameha Highway from the proposed site."*
This clearly means that if the groundwater is contaminated or waste water taps into the flow, it goes straight into the ocean right there at Shark's Cove.

"The open coastal waters offshore of Pūpūkea Beach Park and in the Pūpūkea MLCD are categorized as Class AA under State Water Quality Standards under in HAR §11-54-6(b). The objective of Class AA waters is to remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alternation of water quality from any human-caused source or actions. The coastal waters beyond the MLCD are considered Class A marine waters, which are to be protected for recreational purposes and aesthetic enjoyment. Other uses are permitted as long as they are compatible with protection and propagation of marine biota and recreation."

The samples taken represent a single monitoring event. It was frankly a pathetic attempt to collect data. It is not enough data. There are numerous studies of fish, coral and other invertebrates at Shark's Cove MLCD done by various researchers at UH and beyond. Why were none of those investigated to give an accurate picture of the biodiversity and populations present in the area? The one article by Friedlander is old and is only one article.

Response: The marine biota investigation findings and analysis are reported in EIS *Appendix* C. The findings published by Dr. Dollar are very similar to the reported information published by Coral Reef Assessment and Monitoring Program conducted by researchers Dr. Paul Jokiel and colleagues at the Hawaii Institute of Marine Biology. http://cramp.wcc.hawaii.edu/LT_Montoring_files/lt_study_sites_Oahu_Pūpūkea.htm

The conclusions of the assessment indicate that based on the limited material inputs to the nearshore ocean from the project, the inputs would not be of a detectable magnitude. Thus, if there are no changes to water chemistry, there will be no changes to the marine biotic communities.

Comment: *"3-31 The rural center is in keeping with the North Shore SCP. The project will occupy the area designated in the North Shore SCP for a rural community commercial retail center and is consistent with the policy of "infill." The development plan is aligned with the goals of the North Shore SCP related to desired density, with a total floor area using only 25 percent of that allowed by the existing zoning ordinance." Given its proximity to the Shark's Cove MLCD and the lack of space for parking, the proposed development is still too big.*

Response: The rural center as planned complies with the guidelines established by this community, DPP and the Honolulu City Council for the Rural Community Commercial Center.

Comment: *"The closest medical center with 24-hour availability is the emergency room of Kahuku Medical Center, located 9.1 miles north east of the project site." and "Kahuku Public Library (13.7 miles north)." The hospital is actually 12.6 miles away.*

Response: The EIS has been reworded to acknowledge that the distances to the Kahuku Hospital and Wahiawa General Hospital from the Foodland site are approximate at 9.1 miles 14.7 miles, respectively.

Comment: *3-35 The rural center is not anticipated to pose adverse impacts to nearby State parks or City and County of Honolulu parks. "Nearly all of the subject property has been cleared and developed, and the vast majority of plants present there are now landscape plantings." There is quite a lot of hoale koa. -They should agree to 100 native planting from now on. -They forgot to mention illegally developed.*

Response: Thank you for the recommendation to include native plants in the landscape, which is the plan for the rural center.

Comment: *Regarding comments from agencies and individuals dated May 2017: p.227 DOH Indoor Radiological Division - What about the demolition of current structures? Have they been tested for asbestos.*

Response: Due to the age of the structures, the demolition of the existing structures will require the proper consideration of inspection and, if warranted, testing for asbestos.

Comment: *p.236 DNLR Engineering – I hope that the flood hazards for the area have been properly checked. p.245 OEQC questioned the use of impervious parking near shoreline. In this document the impervious parking has been moved behind the main buildings but the result would still be the same in an intense precipitation event.*

Response: The drainage system will be designed and operated in conformance with City Drainage standards.

Comment: *The OEQC also had concerns about traffic. Traffic issues need to be reanalyzed and more relevant models utilized. I do not see any resolution to the increase in traffic. 1,322 net new trips is a lot of trips.*

Response: The 1,300-additional daily "vehicle trips" do not represent the number of additional vehicles on the road, but rather the number of vehicles turning into and exiting the site. Thirty percent of those trips (396) are assumed to be cars already on the road. Therefore, net new vehicle trips because of the project is projected to be 926 daily. The Final EIS has been updated to show the correct number of net daily trips.

Comment: *p. 238 DLNR Conservation and Coastal Lands made no comment because the subject property is not in a conservation district. Shame on them did anyone look at a map? p. 240 DLNR Wildlife had concerns about bats and seabirds. Any lights visible from the ocean will affect seabirds, turtles, fish, corals and other invertebrates. p. 250 Parks and Recreation were concerned that there was not enough parking planned. I do not see that resolved at all.*

Response: The project is within the State's Urban District; there are no Conservation District lands within the project area. The DLNR comments to the EIS Preparation Notice, published on the pdf page 240 of the Draft EIS, include standard language applicable to all projects on O'ahu. Section 3.4 Flora and Fauna documents the precautions the project will take to minimize impacts to bats and seabirds. The comment letter from the City Parks Department on the Draft EIS, which is included in Chapter 6 of the Final EIS, states that the project will have no effect on parks facilities due to adequate parking provisions for the rural community commercial center.

Comment: *255 Transportation were concerned about ADA compliance amongst other things. The buildings need to be ADA compliant too. The document talks about the sidewalk and some other path in the green area.*

Response: The project will be designed to meet requirements for accessibility.

Comment: *275 NSNB Kathleen Pahinui said that the North Shore Neighborhood Board voted 9-0-0 against the proposed development. She said it was attached with her letter but it was not printed in the EIS document.*

Response: The attachment to the North Shore Neighborhood Board (NSNB) letter on the EIS Preparation Notice has now been included in the Final EIS. Additionally, the NSNB submitted its November 2017 meeting minutes as its comments to the Draft EIS; the Final EIS contains responses to each of the comments.

Comment: *Resources: The 2008 Friedlander study is relatively old already. There are site-specific studies that should have been used as resources. Flora and fauna: "All but perhaps 5% or less of the project area is developed as parking and numerous small shops (each of these areas landscaped to a lesser or greater degree)." Most of this development was done illegally. "Our survey revealed no federal jurisdictional waters (streams or wetlands) on the subject property. No federal Critical Habitat exists for any species on or adjacent to the project area. Thus, modification of habitats on all or any part of the site will not result in an impact to federally designated Critical Habitat. There is no equivalent statute under state law."*
Please have your experts review:
http://dlnr.hawaii.gov/dar/marine-managed-areas/hawaii-marine-life-conservation-districts/oahu-pupukea/

O'AHU – PŪPŪKEA HAR 13-34 Established 1983 Prohibited activities: To fish for, take or injure any marine life (including eggs), or possess in the water any device that may be used for the taking of marine life, except as indicated in permitted activities above. To take or alter any sand, coral or other geological feature or specimen, or possess in the water any device that may be used for the taking or altering of a geological feature or specimen. To snag any akule while fishing from the shoreline of Waimea Bay according to "permitted" activities above.

Response: Thank you for providing a reference to the MLCD areas, and HAR 13-34 prohibited activities for those visiting the MLCD. The EIS contains relevant language from HAR 13-34 under "Marine Managed Areas" in *Section 3.7.1*.

Comment: *Water "Present use has averaged about 2500 gallons per day (GPD). Based on BWS design guidelines of 3000 GPD/acre, post development water use on the 2.72 acres of the Hanapohaku parcels may average about 8160 GPD. BWS has indicated that its system can accommodate this increase in use (Group 70, 2017). Water supply from BWS for Foodland is supplied by a 1½-inch meter. Its use has averaged about 2200 GPD. This use may increase by 15 to 20 percent to irrigate the proposed new landscaping at the makai end of its parking lot."*

Response: The engineering plans and design for water use at the rural center follow standards set by the BWS, and projected calculations of future demand for domestic consumption and irrigation.

Comment: *The combined 27,000 square feet of bed area to be installed would provide 100 percent back up capacity. Enviniti report and repeated in the Group 70 Preliminary Engineering Report is 10,533 GPD, about 30 percent greater than the 8160 GPD of projected water use. How is this disparity reconciled?*

Response: The calculation of design flows and disposal system sizing are based on conservative requirements of the State DOH standards. The higher numbers represent the design capacity requirement as provided in Hawai'i Administrative Rules §11-62 (Wastewater Systems), versus the anticipated water use and wastewater output. Technical specification of the system must be reviewed and approved by the Department of Health (Section 3.16.2).

Comment: *p. 382pdf "irrigation will be about 2000 GPD per acres on 0.12 acre of grass and 1200 GPD per acre on 0.50 acres of shrubs and trees" That's a lot of water. It does rain quite a bit here too.*

Response: Water demand calculations follow standards set by Board of Water Supply and irrigation demands are based on the water demand of the anticipated landscape elements.

Comment: *"A draft of the second update of the WRPP is expected to be out for public review and comment in late 2017. For the Kawailoa Aquifer, the recommendation is to reduce the aquifer's sustainable yield from 29 to 22 MGD based primarily on the recharge calculation in Engott et al, 2015, considered to be the most detailed and accurate calculation available, plus an allowance of "spillover" from the upgradient Wahiawa high level aquifer. The recommended reduction has not yet been adopted." The final recommendation needs to be considered.*

Response: Water supply for the project is managed by the Honolulu BWS. The information on the aquifer is current.

Comment: *p. 389 pdf details a lot of very important information that has yet to be determined. p. 403 Old pictures again. Please update photos.*

Response: Information and photographs provided in the appendices you cite are appropriate to the investigation and assessment conducted for this EIS.

Comment: *Traffic. Can you imagine trying to come out onto Kam and turn towards Haleiwa? It would be better going through Foodland and try to exiting onto Pupukea Road. What will be the signage patterns if the two lots are coordinated and adjoined?*

Response: The traffic pattern inside the rural center will be coordinated between the two properties. The new refuge lane/center turn lane on the restriped highway will help to facilitate traffic flow, consistent with recommendations from the State Dept. of Transportation.

Comment: *The document says there are 126 parking spaces but actually with four food trucks plus 5 spaces per truck, that leaves only 106 Take away 6 more for 3 ADA spots and you only have 100. That means, according to the applicant's own calculations, that there will be enough parking for the employees and a few of their family and friends.*

Response: The Final EIS presents the provision of 126 parking spaces at the rural center, with the required LUO parking spaces including accessible spaces and loading, and revised plans for up to 6 food trucks following the new ordinance for Haleiwa Special District.

Comment: *The applicant will need a turn-in area for the bus stop. The applicant will likely want the bus stop in front of Foodland. This will impact the current landscaping in front of Foodland. There is quite a slope there too. Will likely need retaining walls, steps, ADA access. The bus will have a very difficult time getting out of that stop if it the entrance and exit to the proposed development is right in front of it. Please provide details. Will this require a new EIS process? Parking control and validation. Paid Parking? Please provide details.*

Response: TheBus stop relocation is being planned in coordination with the City DTS. The specific design factors raised in your comments will be addressed in the design process with the City. There is adequate space to properly locate the bus stop along the project frontage on Kamehameha highway, and the City is advising the development team to assure proper standards are met.

Comment: *"During peak winter surf season and the active summer period on the North Shore, intermittent congestion is expected to continue to occur with or without the rural center." Please provide details. Show the traffic flow.*

Response: Traffic flow is shown in diagrams provided in the Final EIS *Section 3.13* and *Appendix F* Transportation Impact Assessment Report, which includes all the substantial detail you've requested. This analysis has been reviewed by the State DOT and City agencies responsible for the transportation design review and approval.

Comment: *Please revise Draft EIS and resubmit to community after you work out parking lot coordination between Honopohaku and Foodland lots including the additional complexity of bidirectional flow interference of food supply trucks on Pupukea road servicing the Foodland rear entry and how complexities in traffic flow will exacerbate the allowable amount of vehicles per hour to be distributed between the proposed center and existing traffic patterns of Foodland/stoplight/Pupukea road intersection?*

Response: The provisions for internal circulation and driveway traffic in the redevelopment of the commercial properties at the rural center is presented in the Final EIS Section 3.13 and Appendix F. This information is under review by the State DOT and City agencies responsible for the transportation design review and approval.

Comment: *Air quality. There will be more cars idling. Cars will be trying to get out of the proposed parking lot. There may be issues trying to get in too. Trying to turn in coming from the Kahuku side could be difficult. Trying to get out going towards Haleiwa – next to impossible. Here are some cursory parking estimates 86 people employed there at least 50 cars. Each food truck has 5 more cars 40 (not sure where all the people eating at the food trucks are going to sit.) The restaurant - How many tables? 20? One car per table 20 Shop 5 Pharmacy 5 Bank 5 Professionals 5 Yoga/fitness – class time 15 Childcare – drop off and pick time 15-20 That's 160 or so for 100 spots.*

Response: Access to the rural center by both pedestrians (including bicycles) and vehicles has been carefully planned to address your concerns. Parking meets the City LUO and provides for transient use of food truck patrons. Site design has taken all users into consideration. Pedestrian safety will be improved with the provision of a walkway along the Kamehameha Highway frontage.

Air quality is addressed in Final EIS *Section 3.14*. The traffic analysis is presented in the Final EIS *Section 3.13* and *Appendix F*. The estimate of 86 long-term jobs created by the project has been updated in the Final EIS to 80 long-term jobs. The number represents the total jobs created; it does not represent the number of employees on site at any one time. The number of parking spaces to be provided will meet the requirements under the Land Use Ordinance (LUO), Revised Ordinances of Honolulu, Chapter 21.

Comment: *Noise. Nighttime noise what time will they be closing up at? 10pm? Impact on turtles, fish and invertebrates across the road? Lights too.*

Response: Existing and future conditions for noise at the rural center has been addressed in Final EIS *Section 3.15* and *Appendix G*. The project is not anticipated to affect turtles, fish and invertebrates in nearshore waters 500 feet or more distant from the rural center boundary. Lighting is addressed in responses to earlier comments.

Comment: *Utilities: Current electrical demand for the existing buildings and mobile food establishments is estimated at 4,500 kWh per month. The trucks are not supposed to hooked up to the electrical grid.*

Response: On-site electrical use supports the existing buildings and security lighting. With the construction of the rural community commercial center, outlets for electrical service will be provided for mobile food establishments as allowed under the code and ordinance. The future electrical demand for the center is projected at 4,000 kWh per day.

Comment: *Waste Water: infrequent special events with larger gatherings, the increased wastewater load would be supported with portable toilets and hand-washing stations. Mobile food trucks may be among the tenant mix periodically using the central gathering space. While in practice the number may be much lower, the wastewater and parking capacity are sized to support up to eight mobile food trucks, their patrons, and employees.*

Response: This statement is correct, with a revision to the project plans reflected in the Final EIS stating that the regular operations will include up to six mobile food trucks.

Comment: *Runoff calculations seem a little whacky. I would say that we get 1 inch rainfall on consecutive days quite often. We had 6 inches in 24 hours in Spring 2017. There is no accounting/data for previous saturation. This is an important omission.*

Response: The drainage analysis for the rural center is presented in Final EIS *Section 3.6* and *Section 3.16* and *Appendix H*. There are strict requirements in the City rules for site development and drainage controls, which obligate the rural center to accommodate the design storm rainfall events.

Comment: *Electrical Power: "Electrical demand for the restaurant and rural center is estimated at 4,000 kilowatt hours per day." How can it be the same as it is currently?*

Response: Th EIS *Section 3.16.1 Existing Conditions* estimates the current electrical power demand at 4,500 kilowatt hours (kWh) per month; *Section 3.16.2* describes future conditions with the rural community commercial center as an estimated power demand for 4,000 kWh per day (emphasis added). On-site power generation through photovoltaic panels are anticipated to provide approximately one-third of the power demand.

Comment: *Solid Waste: The document projects the generation of 296 to 345 pounds of solid waste per day. Recycling will apparently be promoted but currently most recyclables end up burned at H Power. Thank you for saying that the food containers would be non- polystyrene. They need to be compostable. The calculations in the document do not account for increased litter and it getting into the storm drains and consequently the ocean*.

Response: The project will do its part to recycle materials and minimize contributions to the waste stream. Proper management of the site and waste containers will minimize litter on the property and potential for this material to enter the drainage system.

Comment: *Apparently pictures from January 2017, are shown in Figures 3-8 and 3-9A-F. They do not look like a Jan 2017 pictures. Please address.*

Response: The aerial photograph in Figure 3-8 is from 2016. Site photos were taken in 2017.

Comment*: "This area of the North Shore is not slated for growth, according to the North Shore SCP. With little exception, other lands on the North Shore falls within the State urban or agricultural land use districts, and zoning allows residential or country uses. There are no currently proposed subdivisions, commercial or resort developments for the region. According to the Transportation Impact Analysis Report prepared for this EIS, no transportation infrastructure improvements are planned for the area around the rural center (Appendix F). The discussion of cumulative impacts in the following section identify relevant resource uses occurring in the project area to which the project may contribute to impacts." Did someone copy and paste this into the wrong EIS? There are quite a few significant pieces of land zoned for agriculture being "repurposed" for huge houses around here. The real estate company that operates on the subject property is involved in many of them. The Turtle Bay Resort also has approval for hundreds of new units (hotel rooms and resort residential houses/condos). HRI has shifting plans to expand the number of university students at Bingham Young and build between 300 and close to 1,000 housing units and retail outlets. Further away but significant, Dillingham Ranch is planning on building hundreds of houses. Please address this disparity and how the modeling elicited this conclusion it is flawed?*

Response: The discussion of cumulative impacts addresses known new developments in the vicinity of the project. The proposed projects you mention are located at distances of 5 to 10 miles from the project site and are not certain to be advanced. These proposals do not change the specified intent in the NS SCP for the development of the Rural Community Commercial Center on the properties zoned B-1 neighborhood commercial district.

Comment: *Finally, please address these main takeaway points:*
1) No matter what kind of waste water treatment system is employed, given the proximity of the Shark's Cove Marine Life Conservation District - We cannot afford to take any chances. [Is there enough data to justify this risky near shore, high volume application?]
2) The "studies" carried out in the MLCD were pathetically inadequate and none of the previously published studies of the area were reviewed or included in the references. Please revise the DRAFT EIS and resubmit for another comment period.
3) Run off and leaching of cleaning chemicals, engine oil and other substances were not addressed. Please revise the Draft EIS and resubmit for another comment period.

Response: The project team is well aware of the sensitivity of this location with regard to surface runoff, treated wastewater disposal and the nearshore marine environment, and that is exactly why the land plan, drainage and wastewater systems, and Final EIS addresses each of these subjects.

Comment*: (Continued)*
4) The number of food trucks is vague to say the least. This results in an inability to accurately forecast traffic and a parking apocalypse. Please revise the Draft EIS and resubmit for another comment period.

Response: The Final EIS has been revised to state that typical operations will involve up to six food trucks, and parking will be provided per City requirements for commercial uses that include the food trucks.

Comment*: (Continued)*
5) The rerouting of the entrances to Foodland and the "Center" into one, will result in perhaps being able to get into the development but will make it extremely difficult to park and then get out of the place. Especially aggravating will be trying to get in from Kahuku side and out going in the direction of Haleiwa.

Response: The EIS has been clarified to note that the two existing driveways to the Foodland grocery store, adjacent to the project site, are closer in proximity to the Pūpūkea Road intersection than allowed under current DOT standards and traffic engineering practice (*Section 3.13.1*). Vehicle circulation is planned to accommodate both the Foodland and the new uses at the rural center, with a centralized access and internal driveways to flow efficiently.

Comment*: (Continued)*
6) Last and certainly not least is the fact that the landowners of this property and the people currently seeking to build their "Center" have operated illegally for years. They have flagrantly violated state laws. It is my understanding that they have accrued $150,000 in fines. What possessed the DPP to issue them a SMA permit defies common sense without satisfying the fines and remediation the existing violations? The situation raises serious questions about the decision makers involved at the DPP.

Response: The SMA Minor Permit (2017/SMA-21) addresses the issues with a current plan that eliminates the prior violations and fines settlement. The new rural center will replace the current uses on the property and be subject to conditions of approval of an SMA Use Permit - Major.

Comment: *Regarding the Food Trucks [referred to as "Mobile Food Establishments"]. All Mobile Food Establishments are required to access a state approved facility to support their food operations safely. "Servicing area" means an operating base location to which a mobile food establishment or transportation vehicle returns regularly for such things as vehicle and equipment cleaning, discharging liquid or solid wastes, refilling water tanks and ice bins, and boarding food. Note since there appears to be a significant move in the Hawaii state legislature to address clusters of food trucks that are located on individual parcels and this may address new requirements based on density of clusters with limits and escalating requirements for more than one food truck per parcel. Will the developer [Honopohaku] attempt to avoid these requirements if they are granted an SMA before the proposed law is ratified and enacted? [Or will Honopahaku show they are capable of becoming a real steward of this sensitive and pristine ecosystem and obtaining 2nd and 3rd opinions from real concerned Ecological scientists and Near shore hydrologists to assess long term risks and down-scale potential impact by reducing the number of potential hazardous stationary food trucks at site? Or eliminating these trucks entirely?]*

Currently: §11-50-63 Sewage, other liquid waste, and rainwater.
(a) A sewage holding tank in a mobile food establishment shall be: (1) Sized fifteen per cent larger in capacity than the water supply tank; and (2) Provided with a tank bottom that is sloped down to an outlet with a shut-off valve to permit complete drainage of the tank, except for those tanks that are readily removable.
(b) Food establishment drainage systems, including grease traps, that convey sewage shall be designed and installed as specified in section 11-50-61(b)(1).
(k) Water meeting the requirements specified in subsections (a) to (i) shall be made available for a mobile facility, for a special event food establishment without a permanent water supply, and for a food establishment with a temporary interruption of its water supply through: (1) A supply of containers of commercially bottled drinking water; (2) One or more closed portable water containers; (3) An enclosed vehicular water tank; or (4) An on-premises water storage tank. [Eff 2/24/2014; am and comp] (Auth: HRS §321-11) (Imp: HRS §321-11)

Mobile Food Establishments: A passing inspection for the Mobile FE and Support Kitchen must be received from the Sanitation Branch before the Mobile FE can operate for business.
Support Kitchen requirements: A Support Kitchen is required to have a current Food Establishment Permit and must be able to "support" the operation of the Mobile FE — this is determined by the inspector based on your business plan, menu, and the facilities of the proposed Support Kitchen. A Mobile FE may have more than one Support Kitchen. Private home kitchens are not allowed. Any food establishment with a current permit with DOH may be used as a Support Kitchen. All equipment to be used for Mobile FE operation must be on-board unit or attached to unit. Mobile FE requirements (continued):

Equipment Details Sink(s): A handwash sink is required when there is handling of open food. Water flow may be generated by gravity or an electric pump that allows both hands to be washed at the same time. Additional sink(s) and size of sink(s) will be determined based on the Mobile FE operation (food prep, warewashing, etc.). Mobile FE serving pre-packaged foods only does not require a sink.

Water tanks: The potable water tank must be at least 5 gallons in capacity. The wastewater tank must be >15% in capacity than the potable water tank. Water tank capacity requirements will be based on the menu/operations — more operations conducted on the Mobile FE will require more water. Water tanks must be of safe materials, durable, smooth, non-absorbent, and easily cleanable.

Food equipment: Hot-holding units must maintain food temperature of ≥ 135ºF. Cold-holding units must maintain food temperature of ≤ 41ºF. Any equipment used for the operation of the Mobile FE must be physically attached to the unit. Serving tables, hibachis, coolers, and other equipment used for the Mobile FE food operation are not allowed to be set on the ground, outside Mobile FE. A trailer on wheels attached by a hitch to a Mobile FE may be allowed for cooking purposes only. All food handling must be conducted within the Mobile FE.

Pass-thru and openings: Pass-thru window(s) are recommended to be no larger than 5 square feet and is required to have a closure that is able to be put into place when window is not in active use. If there are more than one pass-thru, it is recommended that they be spaced at least 2 feet apart. Openings must be screened and protected from entrance of vermin and pests.

Materials and surfaces: All surfaces of the Mobile FE must be durable, smooth, non-absorbent, and easily cleanable.

Will Honopohaku attempt to circumvene [sic] *the spirit of the rule/statute regarding the amount of necessary parking space by underdeclaring the amount of stationary food trucks considered at entire center? Will Honopohaku revise and resubmit the draft EIS to address allof the inconsistencies regarding tenant density, parking, water, neighbor impact, hydrology, ocean impact, foodtruck understating, effluent issues, lack of high velocity runthrough of water from steep slopes, and other issues where the consultant G70 has not been able to create a reasonably usable Draft EIS?*

Response: Thank you for providing the excerpt of the rules for mobile food establishments. The Final EIS addresses the inclusion of food trucks in the plan and technical studies addressing their operations on the subject property, which must comply with existing State Department of Health rules and City and County land use permitting requirements. The Final EIS Chapter 3 addresses the potential for effects to the drainage, nearshore environment, groundwater, water use and waste, and neighbor impacts such as air quality and noise.

Comment*: Some generic questions from one of our concerned members:*

<u>Section A - Office of Environmental Quality Control</u>
A) 1) the law requires that government give systematic consideration to the environment, social and economic consequences of proposed development projects prior to allowing construction to begin. The law also assures the public the right to participate on planning projects that may effect their community. The Office of Environmental Quality Control implements this law in Hawaii. (OEQC)

2) The proposed action is subject to EIS law, the environmental review process begins with the development of a Draft EIS. This Draft EIS is an informational document prepared by the private applicant and used to evaluate the possible environmental effects of a proposed action. The Draft EIS must give a detailed description of the proposed action or project and evaluate direct, indirect and cumulative impacts. The document must consider alternatives to the proposed project and describe any measures proposed to minimize potential impacts.
3) After reviewing comments received, the document writer must discuss findings and reasons that support the determination in consideration of the significance criteria listed below.
4) The final EIS must discuss the project impacts in relation to each criterion in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that a proposed action will or will not result in any significant environmental impact must be included.

Section B- Review of Significant Criteria

a) In consideration the significance of potential environmental effects, agencies shall consider the sum effect of the quality of the environment, and shall evaluate the overall and cumulative effects of an action.
b) In determining whether an action may have significant effects on the environment, the agency shall consider every phase of a proposed action, the expected consequences, both primary and secondary, and the cumulative as well as the short term and long term effects of the action. In most instances, an action shall be determined to have a significant effect on the environment if it:
(1) Involves an irrevocable commitment to loss or destruction of any natural or cultural resource;
(2) Curtails the range of beneficial uses of the environment;
(3) Conflicts with the state's long term environmental policies or goals and guidelines as expressed in Chapter 344, HRS, and any revisions thereof and amendments thereto, court decisions, or executive orders;
(4) Substantially affects the economic or social welfare of the community or State;
(5) Substantially affects public health;
(6) Involved substantial secondary impacts, such as population changes or effects on public facilities;
(7) Involves a substantial degradation of environmental quality;
(8) Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions;
(9) Substantially affects a rare, threatened, or endangered species, or its habitat;
(10) Detrimentally affects air or water quality or ambient noise levels;
(11) Affects or is likely to suffer damage by being located in an environmentally sensitive area as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;
(12) Substantially affects scenic vistas and view planes identified in county or state plans or studies; or,
(13) Requires substantial energy consumption.
It is not sufficient to simply state that a project does not have any significant impacts or the rephrase each criteria in its negative form. The Draft EIS should discuss the project impacts in relation to each of these criteria in detail.

Response: In response to the citations you provide, this environmental document is prepared pursuant to the Revised Ordinances of Honolulu, Chapter 25, Special Management Area, and consistent with Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health, Environmental Impact State Rules." The EIS documents meet the content and procedural requirements of Chapter 343 HRS and Title 11-200 HAR.

Additionally, stated on the inside cover is the signed attribution by G70's principal planner in charge of the EIS preparation: "This Draft Environmental Impact Statement and all ancillary documents were prepared under my direction or supervision, and the information submitted, to the best of my knowledge, fully address document content requirements as set forth in §11-200-17 Hawai'i Administrative Rules." The EIS document meets the content and procedural requirements of Chapter 343 HRS and §11-200 HAR.

Comment: *Section C – Preassessment. According to the OEQC Hawaii State Environmental Review Process guidebook (June 2004), a pre-assessment consultation with the community regarding the proposed activity should have taken place. As well as pre- assessment contact to groups, individuals and organizations that have expertise in the field, have interests in or would be affected by the activity proposed. Immediate neighbors or neighboring landowners must be contacted. The Hawaii State Environmental Review guidebook also requires, by law that a good faith attempt be made to bring to light environmental concerns prior to the formal draft EIS review period.*

Response: The early consultation or pre-assessment phase of the EIS was conducted following correct procedures, involving several venues, most notably through the publication of the Notice of Preparation of EIS (EISPN). The process for seeking early contacts for this EIS process fully complied with OEQC guidelines and State law.

Comment: *Please document contacts with community groups and agencies and append any correspondence in the final EIS. We notice that many environmental groups were not contacted – please advise why you did not seek their comments? If the project is in a coastal areas there should have been contacts with the Sierra Club UH's Sea Grant Program. There is no reference in the draft EIS of contact with these entities. Was the Sierra Club contacted? Please append copies of pre-assessment correspondence with this organizations in your final EIS. Was the UH's Sea Grant Program contacted? Please append copies of pre-assessment correspondence with this organizations in your final EIS. Where local environmental & community groups contacted? Please list all those groups contacted. Was the Surfrider Foundation, Oahu Chapter contacted? Was the Save Sunset Beach Coalition contacted? They have no record by mail or email. Was the Sunset Beach Community Association contacted? Please include in your final EIS copies of any correspondence or notes from meetings from all pre-EIS contact. If these organizations and groups were not contracted, please provide an explanation as to why there was not a good faith effort made to contact these groups?*

Good Neighbors Pre-assessment Consultation. Immediate neighbors or neighboring landowners must be contacted. Were the neighbors and neighboring landowners contacted

and queried about there current concerns and the recent history of the Hanopohaku entity as a good neighbor and steward of the area? Please provide a list of neighbors and neighboring landowners that were contracted. How many landowners did you contact on Pahoe Road? Did you attempt other people who were neighboring the proposed project on Kam Hwy? When were they contacted? List each landowner separately please. Please provide copies of pre-EIS correspondence with the neighbors and landowners on Pahoe Road and Kamehameha Highway. What were their concerns? Please list or append copies of pre- assessment correspondence. How were responded to?

Response: The early consultation or pre-assessment phase of the EIS was conducted following correct procedures, involving several venues, most notably through the publication of the Notice of Preparation of EIS (EISPN). G70 also met with members of the community, including several meetings with Mālama Pūpūkea Waimea, residents of Pāhoe Road, and the Sunset Beach Community Association. The EISPN comments and responses published in the Draft EIS essentially capture the major points introduced to the EIS review process by neighbors and the wider community, government agencies and interested organizations. Subsequent to the Draft EIS publication, additional meetings were held with neighbors, community groups, Sunset Beach Community Association and the North Shore Neighborhood Board No. 27. We have received no comments from some of the groups you mentioned after the widespread notice of two published environmental documents for over a year.

Comment: *Did you address the lighting proposed on Pahoe Road?*

Response: There is no proposal to modify street roadway lighting.

Comment: *Did you discuss the traffic increase of 5,000 % [even though your Traffic consultant supposedly did some modeling, it is obvious from antiquated sampling and incorrect assumptions that it will evolve flawed/skewed conclusions] on Kam hwy/ adjacent to Pahoe Road? Did you discuss the widening of Pahoe Road? Did you discuss the widening of Kamehameha Highway? Did you discuss the proposed construction periods? Did you discuss the easement issues potentially necessary to utilize foodland parking in conjunction with Hanopohaku development? Did you discuss the noise levels for the completed project? Did you discuss the safety issues with 5,000 more people on their street? The draft EIS lists contacts with the Department of Transportation for the proposed highway crosswalk What are these approvals and rights-of-way? Would the proposed off-site highway improvements also require a separate SMA permit?*

Response: Existing and future conditions relating to roadways and traffic are properly addressed in the Final EIS Section 3.13 Traffic and Section 3.16 Infrastructure, with more details in Appendices F and H. The State and City agencies review the traffic and infrastructure reports to assure the project will comply with government requirements. The EIS addresses the anticipated government conditions to be tied to the project's approval, which will direct the owner to complete minor improvements to the State and City facilities.

Comment: *There is no discussion of any state or county funds involved. Please include amounts of federal or other funds administered by state or county agencies. Please list all permits necessary by the Dept. of Transportation and their status. There are proposed improvements*

to Kamehameha Highway and Pahoe Road the Department of Transportation rules regarding lighting were inferred but are omitted. Please append the proposed lighting improvements and list the rules for the lighting in your final EIS. The amount of funds involved for these improvements was omitted. According to the Hawaii State Environmental Review Process guidebook, the applicant is to disclose the amount the state of county funds involved, including federal or other funds administered by the state or county agencies. No mention of these funds is included in the Draft EIS. Please include amounts of federal or other funds administered by state or county agencies.

Response: The project does not require or involve government funds. This is stated in the Final EIS Chapter 2.5

Comment: *RE: Proposed Commercial Bus Stop on Kamehameha Hwy. Is this improvement included in the proposed off-site roadway improvements?*

Response: There is no commercial bus stop planned on the site, nor is there a commercial bus stop proposed along the highway. There is an existing City TheBUS stop located in front of the Foodland. This City bus stop must be relocated either closer to the intersection with Pupukea Road, or to the north in front of the new rural center. The City DTS and State DOT will determine the new location.

Comment: *Was the Dept. of Transportation Statewide Transportation Planning Office (STPO) contacted? Please provide copies of correspondences in the final EIS. Please list all the proposed or required improvements to Kamehameha Highway. Who will be financially responsible for these improvements on Kamehameha Hwy.? Who are the entities and their respective percentage of financial responsibility for the proposed improvements to Kamehameha Hwy.? Who are the entities and their respective percentage of financial responsibility for the proposed lighting improvements on Kamehameha Hwy.? Has any other Oahu rural community had such improvements proposed and implemented? Please include the sustainable areas of Ko'olauloa, Wai'anae, and Ko'olaupoko.*

Response: The HDOT Statewide Planning Office was contacted and meetings were held in 2016 and 2017 to address the rural center project planning, EIS and Transportation Impact Assessment Report (TIAR). The requirements for minor offsite improvements to the highway were discussed, including the restriping for a center turning lane, small addition of pavement on the mauka side of the highway, and a possible crosswalk at the Pāhoe Road intersection (recommended by community members). Project proponents are required to complete such improvements to satisfy approval conditions imposed by government. These minor improvements are commonplace conditions required within the State highways jurisdiction in the three Sustainable Communities Plan areas cited.

Comment: *Who will be financially responsibly for the improvements proposed on Pahoe Road? Who are the entities and their percentage of financial responsibility to the proposed Pahoe Road improvements? Who are the entities and their percentage of financial responsibility for the proposed lighting improvements on Pahoe Road?*

Response: There will be no improvements made to Pāhoe Road, and none are required since access the rural center will not involve the use of Pāhoe Road.

Comment: *Has the Honolulu Office of the Federal Highway Administration been contacted to determine the applicability of a federal 4(f) document which involved federal funding and is situated close to any of the below area or resources. If such funding is included and since it is near a park, recreational area, wildlife refuge, historic site and bikeway is can trigger a form of federal environmental review, distinct and separate from NEPA and Chapter 343, HRS, known as a 4(f) review. Will the proposed roadway improvements involve federal funding? Will the proposed roadway improvements constructively use any of the above resources?*

Response: The redevelopment of the subject properties for the rural center, and the anticipated requirements by State and County for minor off-site improvements, will not involve federal funding.

Comment: *Foodland & Hanopahku parking lot – pre-DESI negotiation of easement or MOU that should have been disclosed in DEIS. In the draft EIS presentation Jeff Overton made at NSNB there was mention that the applicant believes that they have a potential access agreement with foodland. Quote: "this area will largely be closed off much of the time we have ample parking the code calls for about 80 parking spaces and we have 126 on the site here there's going to be more with the restriping of the foodland parking lot as well so more than ample parking and closing this off periodically is going to allow for a lot richer pedestrian experience alright"…What are the rights of the neighboring landowner Foodland? What approvals have been secured from Foodland? Did you have to purchase these rights? If so how much of the stated project costs would be used to secure these approvals? How will this easement really affect traffic – the study does NOT Identify the flow patterns with a map in a chronological method to make this modeling usable and the assumptions are from 7-8 years ago; please elaborate? How would this affect the traffic signal at Pupukea Road? Using the alternative, will the proposed improvements to Kamehameha Highway be changed? Will Hanopahaku need to reapply with Foodland to generate another EIS based traffic study on the merging of the parking lot?*

Response: The EIS at Section 2.2 discusses the 1996 development agreement among the four parcels, which predates the current owners of the Hanapohaku parcels. This agreement requires a connection between the properties, and the plans for the rural center provide two driveway connections. Traffic patterns involving the driveways with Pupukea Road and Kamehameha Highway are addressed in Final EIS Section 3.13 and Appendix F. The EIS traffic study includes analysis of the traffic signal and traffic flow at Pupukea Road and Kamehameha Highway, addressing trips associated with the rural center including the existing Foodland store.

Comment: *Section E- The draft EIS fails to adequately describe the surrounding natural environment. The draft EIS does not make mention to the Hawaiian Island Humpback Whale National Marine Sanctuary. The area is located directly offshore from the project. For you reference please see attached NOAA map of the location in relation to the north shore. Was the National Oceanic and Atmospheric Administration and the Hawaii State Dept. of Land and Natural Resources contacted about the project? What are NOAA and DLNR regulations and*

provisions for the Humpback Whale Sanctuary? Please list all the rare, threatened, or endangered species, in the habitat of the Pupukea MLDC and the Hawaiian Islands Humpback Whale National Marine Sanctuary. What is each of their protected statuses? What are the effects of the project on the Sanctuary? What are the effects of pollutions on the Sanctuary? What are the effects of pollutants to the flora in these districts? What are the effects of the increased surface runoff to the Sanctuary? Please supply evidence justifying that the proposed action will not result in any significant environmental impact to this area. The final EIS must discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that the proposed action will or will not result in any significant environmental impact must be included.

Response: The rural center will have no adverse effect on the Hawaiian Islands Humpback Whale National Marine Sanctuary. Final EIS Section 3.7 includes a discussion of the Hawaiian Islands Humpback Whale National Marine Sanctuary. Final EIS Section 6.0 lists the agencies contacted in the notification of the Draft EIS, including the US Department of the Interior, Fish and Wildlife Service; and the US Department of Commerce, National Marine Fisheries Services (NOAA). A comment letter from FWS provided guidance regarding sensitive avian and mammal species found in the region, and general recommendations for the green sea turtle *(Chelonia mydas)*. There are no rare, threatened, or endangered species occurring in the rural center project site and immediate surrounding area.

Environmental sensitivity is fully integrated with the rural center planning. Runoff controls integrated with the rural center will minimize urban runoff inputs to below existing levels. As a result, there will be no adverse effects to the habitat of the Pupukea MLDC. Final EIS Sections 3.5, 3.6, 3.7 and 3.16 and Appendices A, B, C and H address the environmental conditions and measures to minimize potential impacts.

Comment: *The EIS failed to recognize the MLCD according to consultant draft: Section F- Pupukea Marine Life Conservation District (Pupukea MLCD). Identify and assess areas that are generally intolerant to change such as wetland habitat, dry-land forests and coral reefs. Analyze potential impacts resulting from catastrophic events) e.g. hurricanes, fires, landslides) in addition to the project impacts. Consider this cumulative impact on the survival of any species. The Conservation District is located directly across Kamehameha Highway from the project site and potential impacts were revealed. NOAA the State Dept. of Land and Natural Resources has jurisdiction over the area. They are the agency with jurisdiction and expertise and providing them with the Draft EIS is mandatory. Was the DLNR provided with a copy of the draft EIS? Was NOAA contacted? Please append copies of pre-Draft correspondence with the DLNR and NOAA in your final or revised Draft EIS.*

Response: The Final EIS acknowledges the presence of the sensitive marine environment at the Pūpūkea MLCD, approximately 500 feet from the boundary at its closest point. As noted, the rural center integrates environmental controls to minimize effects to the surface runoff water and ground water. The rural center is not anticipated to adversely affect the MLCD.

Comment: *On Oahu, there are only three Conservation Districts, Hanama Bay, Pupukea and Waikiki Special District. The Conservation Districts were enacted as measures to mitigate*

destruction and overuse of its areas. For comparison purposes please provide current visitor counts for the Hanama Bay Conservation District and current visitor counts the Pupukea MLCD. Please include discussion as to the need to study the possibility of additional regulations regulating to this area to prevent destruction and overuse? A project of this magnitude directly across the street would be compelled to study the potential of overuse and mitigation measures to prevent overuse. Would mitigation measures similar to the Hanama Bay measures be proposed? e.g., Fees for parking? Mandatory public education presentations? Entrance fees for tourists? Please provide in your final EIS [or Revised Draft EIS] the available parking spaces Hanama Bay. The breakdown of parking stalls by vehicle type, I.E. passenger, commercial bus space, ADA reserved spaces. With significant increase in the use of the parking, will the Pupukea Beach Parks parking areas need to have parking meters installed? Will there be a need to provide extra DLNR officers to accommodate the influx of visitors? Will a video presentation be required viewing to all wanting to use the area at Sharks Cove? Will there be a fee charged similar to the fees charged at Hanama Bay? It is not sufficient to simply state that a project does not have any significant impacts or to rephrase each criteria in its negative form. The DEIS should discuss the project impacts in relation to each of these criteria in detail.

Response: The rural center will not have adverse effects on the Pupukea Beach Park, as discussed in prior responses and the Final EIS Section 3. There will be on-site parking provided which will be fully compliant with the requirements of the Land Use Ordinance. The rural center is not a natural/recreational attraction, such as the City and County of Honolulu's Hanauma Bay Nature Reserve. The rural center cannot be responsible for supporting the public parking needs of the users of the beach park across the highway.

Comment: *Section G - Other Government Agencies*

1) The U.S. Coast Guard is responsible for the marine environment protection on navigable water. They are also responsible to maintain or improve the quality of the marine environment and to respond to environmental contaminants in the coastal area. Was the U.S. Coast Guard agency contracted regarding the project? Was the U.S. Coast Guard provided with a copy of the draft EIS? Will they be provided with a copy of the final EIS? In the event they were not contacted, why where they not contacted? They can provide valuable information for possible mitigation measures to prevent pollutants, contaminants and runoff into the costal areas.

Response: The notification of availability of the Draft EIS for the rural center was sent to the U.S. Department of Homeland Security, Coast Guard. This agency did not provide comments on the Draft EIS.

Comment: *Section G - Other Government Agencies (continued)*

2) U. S. Environmental Protection Agency (EPA) implements laws designed to protect the environment and is responsible for the administration of comprehensive environmental protection laws. Has the EPA been contacted regarding any of the following federal laws? The Clean Air Act? The Clean Water Act? The Safe Drinking Water Act? The Comprehensive Environmental Response, Compensation and Liability Act? The Resource Conservation and Recovery Act? The Marine Protection, Research and Sanctuaries Act? How does your project's impacts relate to the EPA's: The Clean Air Act? The Clean Water Act? The Safe Drinking Water Act? The Comprehensive Environmental Response, Compensation and Liability Act? The Resource Conservation and Recovery Act? The Marine Protection, Research and Sanctuaries

Act? The US EPA Pacific Islands Contact Office (PICO) in Honolulu provides information on all EPA program areas. The information includes laws, regulations, guidance, technical manuals and other documents. Has PICO been contracted?

Response: The rural center will comply with required City, State and Federal environmental controls in the construction and operation of the project. There has been no requirement to contact the EPA, and this agency does not receive mandatory notification of Draft EIS availability in Hawaii for non-federal actions. For the rural center, the NPDES Construction Stormwater Permit will address required controls to minimize suspended sediment in runoff during construction. This permit is issued by the State Department of Health Clean Water Branch, under its mandate to carry out the provisions of the Clean Water Act.

Comment: *Due to the addition of 5,000 patrons a day to the project site, located directly across the street potential loss can occur from overuse of the Pupukea Marine Life Conservation District. Please furnish studies that include traffic and parking analysis with regard to the Pupukea parks and show how an irrevocable commitment to the loss or destruction of this natural resource will not result from having thousands of project patrons using the Pupukea Marine Life Conservation District. What are the potential impacts attributed to over use of this natural resource?*

Response: The rural center will not have adverse effects on the Pupukea Beach Park, as discussed in prior responses and the Final EIS Chapter 3. There will be on-site parking provided which will be fully compliant with the requirements of the Land Use Ordinance. The rural center is not a natural/recreational attraction, such as the City and County of Honolulu's Hanauma Bay Nature Reserve. The rural center cannot be responsible for supporting the public parking needs of the users of the beach park across the highway. The future management of the beach park is a matter which the City can address in planning for the projected future use levels and demands upon its support facilities.

Comment: *Section H - The Army Corp of Engineers is listed in the agencies contacted. An individual NPDES Permit is required for any storm waste and other discharges to Class AA waters. How can a permit be granted to discharge into Class AA waters at the Pupukea Marine Life Conservation District? What Federal, State and Local laws will be compromised in doing so?*

Response: The rural center will comply with required City, State and Federal environmental controls in the construction and operation of the project. The existing stormwater drainage system will collect runoff from the property, and the rural center will not create a stormwater discharge to Class AA waters. There has been no requirement to contact the U.S. Army Corps of Engineers. The NPDES Construction Stormwater Permit will address required controls to minimize suspended sediment in runoff during construction, issued by the State Department of Health Clean Water Branch.

Comment: *Item two of significant criteria. "Curtails the range of beneficial uses of the environment" and item six, "Involves substantial secondary impacts, such as population changes or effects on public facilities" A draft EIS response to all Shoreline effects in most instances was to respond by saying, "the project does not abut the shoreline". Attached is the*

developers marketing sheet it clearly states that this property will be situated at the waters edge. In addition, as much as the only barrier between this project and the sensitive areas is Kamehameha Highway and the narrow parking strip. Their EIS did not adequately address the following and we would request a more detailed assessment of the following:

(9) Beach Protection; (a) Protect beaches for public uses and recreation.

(10) Marine Resources: (A) Promote the protection, use, and development of marine coastal resources to assure their sustainability

(c.) Policies. (1) Recreational resources; (b) Provide adequate, accessible and diverse recreational planning and management by:

(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas:

(v) ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and water having recreational value consistent with public safety standards and conservation of natural resources:

(vi) Adopting water quality standards and regulations point and no point sources of pollution to protect, and where feasible, restore the recreational value of coastal waters

To all the above the discussion was "Generally, not applicable since the property does not abut the shoreline". Now is we are to truly address these we would disagree that while the project does not "abut" the shoreline it does effect the shoreline, its beaches, its beach parks and the marine aquatic environment. Moreover, these effects need to be addressed in detail as well as mitigation measures if any and alternatives to the proposed plans.

The same applies to the draft EIS discussion under (4) Coastal ecosystems;

(A) Exercise an overall conservation ethic, and practice stewardship in the protection of, use, and development of marine and coastal resources;

(C.) Preserve valuable coastal ecosystems, including reefs, of significant biological of economic importance.

(E) Promote water quality and quality planning and management practices that reflect a tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development of implementation of point and Nonpoint source water pollution control measures.

No discussion on the above, except to refer back to the discussion under "Coastal Ecosystem" Discussion: Construction of the project will temporarily increase the risk of sediment in storm water runoff. The project will be constructed using accepted best management practices to minimize potential impacts form soil erosion and other pollutants in runoff.

Response: The series of related comments address the rural center's compliance with government plans and policies for beach protection, marine resources, recreational resources and coastal ecosystems. Many of these objectives are directives to State and City government to support these policies and principles. The rural center is supportive of these policies and objectives through pro-active environmental planning for the project and implementation of control measures in the construction and operational phases, to minimize potential effects on these resources.

Comment: *Storm water runoff volume from the developed site will increase due to increased building coverage and paved area. This increased runoff volume may be controlled through diversion to landscaped areas. Excess storm waster runoff will flow into an existing storm water*

drain system, or into new piping that connects to existing storm drainage system. Pollutants in storm water will be reduced by reducing the erosion potential at the site (i.e., coverage by buildings, paving, and landscaping), and by locating most of the parking under a covered parking structure. The problem is that stormwater will surge with a high velocity and expose all residue to marine environment. Most consultant reports are unable to adequately model this problem and it is clearly ignored in the Draft EIS submitted by applicant.

Response: The drainage and storm water management studies completed for the rural center, at Final EIS Section 3.16 and Appendix G. These studies address the management of volume and the rate of runoff, as required under City drainage standards. This is separate from the evaluation of the surface water quality and the marine environment. Final EIS Sections 3.6 and 3.7 and Appendices B and C conclude that the reduction of pollutants in the storm water runoff will result in improved runoff water quality and no adverse effects to the marine environment.

Comment: *Further discussion is necessary to understand how the increase in storm water runoff which would increase from 4.9 cfs to 14.6 cfs. Will not seriously affect the area. This runoff will have the potential to threaten the coral reefs and degrade the water quality of the Pupukea Marine Life Conservation District.*

Response: The response to the prior comment applies to this comment.

Comment: *Alternative proposals need to be addressed to protect and preserve these valuable coastal ecosystems, including its reefs, and the significant biological of economic importance. Further Discussion: The Pupukea MLCD could potentially receive storm water runoff from the property. This runoff could result in a temporary influx of fresh water to the near shore: potential for pollutants, such as automotive fluids, should be reduced due to controls on the Property (e.g., erosion control, location of parking). We are concerned that the project could have an adverse impact on this important resource for the local visitor economy. Further discussion is necessary to answer the following: The center could be subject to serious flooding that is prevalent to this region of the North Shore. Please address the issue that during the rainy season cars coming into the basement parking will have varying amounts of Pupukea red dirt and other soils attached on their undercarriage, tire wells and tires. When this dirt loosens and falls onto the basement floor and the rains wash it into the drainage pipes how the pumping mechanisms handle the red dirt, siltation and sand? What back up measures are there to prevent the clogging of these pumps and rendering then useless?*

Response: The comment combines two questions relating to drainage and stormwater management, and surface water quality and the marine environment. As stated previously, the drainage and storm water management studies completed for the rural center, at Final EIS Section 3.16 and Appendix G. These studies address the management of volume and the rate of runoff, as required under City drainage standards. This is separate from the evaluation of the surface water quality and the marine environment. Final EIS Sections 3.6 and 3.7 and Appendices B and C conclude that the reduction of pollutants in the storm water runoff will result in improved runoff water quality and no adverse effects to the marine environment.

Comment: *Please discuss the impacts of the dirt and its potential siltation on the wastewater treatment plant and its effectiveness and its impacts to the groundwater sources.*

Response: The wastewater treatment plant will not receive surface runoff and suspended sediment. The drainage system addresses the stormwater and suspended sediment, as part of the low impact development measures in rain gardens, bioswales and runoff storage. Refer to Final EIS Section 3.16 and Appendix H.

Comment: *Please discuss the effects of the automotive fluids on the ground water sources.*

Response: Final EIS Section 3.5 and Appendix B address groundwater and surface water quality. There is no drinking water source at the property, and no interconnection with the deep groundwater aquifer at this location. The BWS sources for potable water for the community are at mauka well locations in Pūpūkea. Urban runoff contaminants such as automotive fluids at the parking lot are managed in the drainage system per City standards. Refer to Final EIS *Section 3.16* and *Appendix H*.

Comment: *The most common reply was stated in as "This property does not abut the shoreline". It is not sufficient to simply state that a project does not have any significant impacts or to rephrase each criteria in its negative form. The DEIS should discuss the project impacts in relation to each of these criteria in detail. Further discussion is needed on the potential effects, cumulative and secondary affects the public parks and beaches. Further discussion is needed to avoid the possibility of the project contributing to the degradation of the beach parks. Please provide evidence to support your conclusions and discussion. The final EIS [or revised Draft EIS] must discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that the proposed action will or will not result in any significant environmental impact must be included.*

Response: Potential cumulative and secondary effects are addressed in Final EIS Section 3.18. The rural center will not have adverse effects on the public beaches, as discussed in prior responses and the Final EIS Section 3. There will be on-site parking provided which will be fully compliant with the requirements of the Land Use Ordinance. The rural center cannot be responsible for supporting the needs of the users of the beach park across the highway. The future management of the beach park is matter which the City can address in planning for the projected future use levels and demands upon its support facilities.

Comment: *Section I - Public Access, the Public Parks and Parking Issues*
This development could reduce or impose restrictions upon public access to tidal and submerged lands and the beaches within the special management area. It also can involve substantial secondary impacts, such as effects on public facilities. No parking is allowed on Pahoe Road. / No parking is allowed along Kamehameha Highway. We are concerned that there will be significant negative impacts to the beach parks accessibility and these impacts will curtail the range of beneficial uses of the parks and the beaches. Two parking areas that service the Pupukea Recreation Center and Sharks Cove/Tide Pool are on weekends and summer weekdays mostly full for the majority of the day. The developer should provide

adequate parking to the patrons and employees to insure that the public parking at the beach parks will remain accessible to the public utilizing the beaches and the recreation facilities. Please supply evidence justifying that the proposed action will not result in any significant environmental impact to this area. What alternatives and mitigation measures to the project design are proposed? Please address the significant effects on the only available off street parking in the immediate area. The City and County Parks parking areas of the Pupukea and Sharks Cove beach public parking. The developer is proposing to furnish only the minimum requirement of parking spaces. Per DLU regulations, only 80 parking spaces are required. The developer has proposed only the minimum 126 spaces in their plans.

Response: Presented in Final EIS *Section 2.4*, the rural center will have 126 on-site parking spaces which will be fully compliant with the requirements of the Land Use Ordinance. The future management of parking at the beach park is matter which the City can address in planning for the projected future use levels and demands upon its support facilities. Final EIS Chapter 5 addresses alternatives, and Final EIS Chapter 3 addresses planned mitigation.

Comment: *In Hale'iwa and Turtle Bay, the majority of employees travel by personal vehicle to work. We cannot assume that the majority of the employees left out of a parking space will use alternative transportation. Since they will not know in advance that there are no employee's parking spaces available they may not have enough time to return home and find alternative transportation to work. The developer has spoken that the majority of employees in Haleiwa use public transportation or car pool to work or ride a bike. Please provide evidence to support these theories. Although riding a bike to work would make a lot of sense to local residents that may be seek employment at the project, the fact are that during the rainy season and even during summer month's rains occur daily in the lower Pupukea/Sunset Beach areas. Employees who would ride a bike would arrive soiled and soaked.*

Response: Parking areas at the rural center will include the required number of spaces for employees, per the requirements of the LUO. To further mitigate the demand for employee parking, businesses and their employees will participate in the rural center's parking management program to encourage other modes of transport to and from work, including walking, bicycling, bus, drop-off/pick-up and carpooling.

Comment: *Please describe the facilities provided to employees? Will the restrooms facilities have showers or electrical outlets? With limited tenant and employee parking, please address where the remainder of the employees will park. Please provide all alternatives and include supporting data from other shopping center employees. Will the employees and tenants know in advance that there would be no available parking?*

Response: Restrooms at the rural center will not have public showers or electrical outlets for public use. Employees at the rural center will be instructed to not use parking spaces at the beach park, and not to park illegally along the highway or side roads.

Comment: *What are the hours of parking lot? Will be consistent with foodland lot? Will the lot be locked at night? How will the lot be monitored? Will cameras be used to monitor the parking lot? Will there be a security person? What are the projections of minimum staffing requirements and work hours of staffing with regard to each establishment? With an estimated*

3300 cars daily and 295 cars per hour projected for the weekend peak hours there leaves no doubt that providing only the minimum of parking stalls will not insure that the beach parking areas will not be seriously reduced by employees using every available public parking space in the nearby parks. Please consult with the Department of Parks and Recreations for statistics to the current and projected (2018 and beyond) park users and any plans to acquire additional lands in the immediate vicinity for parking areas.

Response: Presented in Final EIS *Section 2.4*, the rural center will have 126 on-site parking spaces which will be fully compliant with the requirements of the Land Use Ordinance. The City Parks Department provided a comment letter stating their understanding that the project satisfies LUO requirements for on-site parking and will not affect the beach park. The future management of parking at the beach park is a matter which the City can address in planning for the projected future use levels and demands upon its support facilities.

Comment*: The final EIS must discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that the proposed action will or will not result in any significant environmental impact must be included.*

Section J - Storm water run-off and Nonpoint source pollution management and control
Item one, significant criteria, involves an irrevocable commitment to the loss or destruction of any natural resource. We would suggest that the possibility of pollutants entering the near shore environment of the Pupukea Marine Life Conservation District might contribute to the long-term destruction to the coral reef and loss of life to the marine animals in the area. The waters at the Pupukea Marine life Conservation District are classified as Class AA waters. Class AA marine waters are to remain in their natural pristine condition with an absolute minimum of pollution or alteration from human- caused sources or action. Class A marine waters are to be protected for recreational purposes and aesthetic enjoyment. The waters just beyond the Pupukea Marine Life Conservation District are Class A waters Please provide references to and consult with the Director of Health with regard to programs to prevent runoff of polluted water from land areas, including agricultural and urban lands, especially after heavy rains, from reaching our lakes, streams, and coastal waters.

Response: The Final EIS for the rural center includes multiple records of correspondence with the State of Hawaii Department of Health Environmental Planning Office (May 2017, December 2017). The DOH comments recommend that the rural center project team address the requirements of the Clean Water Branch, which are addressed in the Final EIS Section 6 responses to comments, and Final EIS Sections 3.6, 3.7 and *3.16*, and *Appendices B, C* and *H.*

Comment: *What are the affects to the rare, threatened, and endangered species, and its habitats?*

Response: There are no rare, threatened, or endangered species occurring in the rural center project site and immediate surrounding area. Environmental sensitivity is fully integrated with the rural center planning. Runoff controls integrated with the rural center will minimize urban runoff inputs to below existing levels. As a result, there will be no

adverse effects to the habitat of the Pupukea MLDC. Final EIS *Sections 3.4, 3.5, 3.6, 3.7* and *3.16* and *Appendices A, B, C* and *H* address the environmental conditions and measures to minimize potential impacts.

Comment: *No statistics have been provided for annual rain volumes for the Pupukea area. While we have been in drought conditions for the past 5-10 years, we cannot assume that these conditions will persist. Please consult with local and state agencies and provide rain statistics for the past 20 years for the Pupukea, Sunset Beach area. Please use this data to discuss in detail the storage tank capacity. The draft EIS includes and proposal to install an 87,000 gal. Storage tank. Please provide in more detail the your proposal, its capacity to the seasonal rains, its proposed location in relation to the nearshore waters and any back up plans in the event of a 10 yr., 5 yr., and 100- year rain storms. What happens when this storage tank is full, where does the run-off go? How will the tanks be inspected? If a tank is corroded and leaking, will this affect the groundwater or increase fresh water influx into the near shore waters? The draft EIS stated the storm water runoff volumes of the developed site would increase. It failed to adequately discuss mitigation and it failed to address the impacts to the near-shore aquatic environment, Pupukea M.L.C.D., and the National Humpback whale sanctuary. Please describe proposed mitigation measures. It is not sufficient to state that an appropriate mitigation measure will be instituted. Please describe the mitigation measures.*

Response: Final EIS *Sections 2.4, 3.16* and *Appendix H* address the drainage system and storm water management plans that calculate impacts from rainfall events anticipated at this location in compliance with City drainage standards. Additional low impact development measures are planned at the rural center to minimize potential impacts. Water quality and habitat conditions and mitigation measures are addressed in Final EIS *Sections 3.4, 3.5, 3.6, 3.7* and *3.16*, and *Appendices A, B, C* and *H.*

Comment: *Please consult with the Dept. of Wildlife and provide an inventory of the marine animals in the immediate area. Are they part of the protected species in the Sanctuary? What are the point and nonpoint sources of pollution that will be present in the construction areas? What are the effects to marine life from these pollutants? What are the effects on the marine life from the influx of fresh water? The mitigation measures proposed in the draft EIS were to increase the size of the pipes used in transporting surface runoff directly into the Marine Life Conservation District. This is not and should not be an acceptable answer as it may involve an irrevocable commitment to the loss or destruction of the natural resource. No in-depth discussion was presented as to how the significant impacts were to be mitigated. The proposed mitigation measures were not sufficient. Please provide evidence to support your theories. The final EIS must discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that the proposed action will or will not result in any significant environmental impact must be included.*

Response: The Final EIS Section 6 includes correspondence with the State of Hawaii Department of Land and Natural Resources and the US Department of the Interior, Fish and Wildlife Service. Final EIS *Sections 2.4, 3.16* and *Appendix H* address the drainage system and storm water management plans to address rainfall events anticipated at this location, in compliance with City drainage standards. Additional low impact development measures are planned at the rural center to minimize potential impacts. Water quality and habitat

conditions and mitigation measures are addressed in Final EIS *Sections 3.4, 3.5, 3.6, 3.7* and *3.16*, and *Appendices A, B, C* and *H*.

Comment*: Re: Proposed use of asphalt on the raised curb/sidewalk fronting project. Marine studies have shown that when surface water has contact with asphalt certain petroleum byproducts are released. These pollutants could potentially run off into streets, storm drains, and these drain directly into the Pupukea Marine Life Conservation District. Please describe the adverse affects of these pollutants on the newly hatched coral reef polps. Please include discussion with alternatives to asphalt in these curb/sidewalk improvements to mitigate the transmission of these pollutants to near shore waters. This area is a ground for limu, and wildlife habitats they need to be protected for the future viability of the area.*

Response: Final EIS *Sections 2.4, 3.16* and *Appendix H* address the drainage system and storm water management plans to address rainfall events anticipated at this location, in compliance with City drainage standards. Additional low impact development measures are planned at the rural center to minimize potential impacts. Water quality and marine habitat conditions and mitigation measures are addressed in Final EIS *Sections 3.5, 3.6, 3.7* and *3.16*, and *Appendices B, C* and *H*.

Comment: *Section 103 of the Marine Protection, Research and Sanctuaries Act of 1972: Prohibits transportation of dredged material for the purpose of dumping it into ocean waters without a permit from the Army Corp of Engineers. Section 404 of the Clean Water Act (33 USC1344) prohibits the discharge of dredged or fill materials into the waters of the United States without a permit from the Corps of Engineers.*

Response: These two federal acts do not apply to the construction and operation of the rural center. There will be no dredged or fill materials involving waters of the United States.

Comment: *According to maps provided by the City and County of Honolulu, indicate that the property elevation is 20 feet above sea level. During high tide and during storm surge does the sea level raise the underground water levels under your project? What are the elevations of the areas considered for the underground basement parking area? The draft EIS proposed "over excavation" of these areas due to the soil types. In the event fresh or sea water seeps into the excavation area what are the measures proposed to prevent near shore contamination, siltation or other negative effects of the excavation to the marine environment. Would a permit allow dumping into Class AA waters?*

Response: Final EIS *Sections 2.4, 3.16* and *Appendix H* describe the project development plans, grading, excavation, drainage system and storm water management plans. The development of the rural center must compliance with City site development standards. The construction of the rural center will not involve dumping of fill material into Class AA waters.

Comment: *The draft EIS has noted that the development would adversely affect water quality, this is a significant issue. Please address in detail the mitigation measures. To use repeatedly the phrase that appropriate mitigation measures will be instituted is not sufficient. The appropriate mitigation should be described. If mitigation measure is identified, the corresponding impact should also be described.*

Response: Water quality and marine habitat conditions and mitigation measures are addressed in Final EIS Sections 3.5, 3.6, 3.7 and 3.16, and Appendices B, C and H.

Comment: *In the Draft EIS, there is no mention of alternative methods or modes of your project. The area directly impacted is a rural residential community within the North Shore and includes the Country Towns of Haleiwa and Waialua, which are the North Shores centers of commercial activity. The alternative to having a high-density shopping plaza directly across from a sensitive and highly utilized Sharks Cove area should be addressed. Using an alternative site would likely result in a consensus of the affected community members. Why was no alternative proposed in the draft EIS?*

Response: Final EIS Section 5 addresses alternatives to the proposed action, consistent with content requirements of Chapter 343 HRS and Title 11-200 HAR. In the preliminary screening of alternatives, the alternative for another project location was considered. Of particular note, the four subject commercial zoned properties (including Foodland) are identified in the North Shore Sustainable Communities Plan as the Rural Community Commercial Center at Pūpūkea. This was a directed growth policy set in 2012 by the community, City planners and the Honolulu City Council. For this important reason, and the lack of other suitable commercial zoned parcels in the vicinity, the alternative location option was dismissed without further analysis.

Comment: *Could there other method lower project impact, such as declaring a limit on amount of stationary food trucks at 1 truck per parcel? Are there other methods of mitigating impact on traffic flow and requiring a crosswalk to be implemented so close to the stoplight?*

Response: As stated in the Final EIS Section 2, the number of food trucks which will regularly operate on the property was reduced to 6 food trucks. Potential impacts associated with the food trucks are address in the Final EIS, including mitigation measures. Traffic flow analysis and mitigation, including a discussion of the community's recommended highway crosswalk near Pāhoe Road, are addressed in Final EIS Section 3.14 and Appendix G.

Comment: *The draft EIS list permits, variances and approvals please list as required the status of each. C&C, Grading and other construction related permits, please list all permits necessary. DOH, Wastewater System Approval, status? Please outline the permits necessary for the drainage system connections, their status and requirements. What are the variances being proposed? Board of Water Supply, permit status and approval of projected water allocation. Fire Dept. recommendations and concerns about service area, in relation to current levels of staff. Police Dept. The recommendations and concerns to the limited amount of officers in the service area. Have they been contacted regarding a proposal to house a substation or kiosk in the project? Please include all correspondence and status of requests.*

Response: The development of the rural center requires the review and approval of a number of permits from the State of Hawaii and City and County of Honolulu. Final EIS *Section 1.8* and *Table 1-1* provides a list of required reviews and permits. The notice of availability of the EISPN and Draft EIS have been provided to the agencies and departments responsible for these permits and reviews, including those you mention. The Honolulu Fire Department and Honolulu Police Department have been contacted in the EIS process, without mention of the

need for a substation. There are copies of correspondence with these agencies in Final EIS Section 6, and the project team will maintain continued contact with these agencies as development plans progress. Most of these approvals will involve the agency review of detailed construction design plans, which will be submitted at a later stage in the development permitting process. The level of information presented in the Final EIS is detailed and more than adequate for the environmental disclosure review process.

Comment: *Section K - Public Safety. How many ways does you project affect public health? Please provide a detailed list of other specialty retail shopping centers that are located directly across from Parks and other natural and manmade attractions. I.E. Ala Moana Center. Please consult with the Dept. of Transportation and the Dept. of Health as to the volume of pedestrians in these centers that access the public beach parks and describe the measures that protect these pedestrians. Please project pedestrian traffic volumes from your project desiring to access the nearby beach parks and shoreline recreational areas of Pupukea Park, Sharks Cove and Three Tables areas. With a projected 5,000 visitors daily, will pedestrian crosswalks be proposed on Kamehameha Hwy.? How many crosswalks will be proposed? Where would these crosswalks be located? How will these crosswalks be affected by the proposed "middle turn lane"? Please describe any other proposed crosswalks improvements, i.e. flashing lights, overhead transportation structures proposed or required for crosswalks. Is a pedestrian crosswalk proposed across Pahoe Road? In comparison, Sunset Beach Support Park located across the highway from Sunset Beach has one crosswalk. It is located at its far eastern edge, quite a distance from the vehicular access to the mauka park/parking lot. The majority of pedestrians do not walk to this crosswalk but rather jaywalk at the entrance to the park. Furthermore, most tour bus operators do not guide their patrons to the safety of the crosswalk, but rather assist their passengers by directing them to jaywalk Kamehameha Highway at the entrance of the park. This is a serious public concern and only a matter of time before it results in a pedestrian fatality or serious injury. What are the statistics of pedestrian related accidents at the Sunset Beach Support Park?*

Response: Pedestrian safety is very important to the developer of the rural center and the members of the North Shore community. The Final EIS includes a discussion of the community's recommended highway crosswalk near Pāhoe Road, addressed in Final EIS Section 3.14 and Appendix G. The project team will implement the installation of the recommended crosswalk as a condition of approval at the direction of the State DOT.

Comment: *2.2.2.4.2. Access Proposed Commercial Bus Stop on Kamehameha Hwy. The traffic study (page 29 paragraph two) projected a commercial vehicle pullout with usage approx. four times an hour and indicted that this pullout will facilitate sharing of this space by two commercial vehicles. Two vehicles per space times four times per hour, estimated usage hours from 9:00 am – 11:00 pm are we to assume that 120 buses per day will be using these pull outs? Will commercial tour buses that will idle while their passengers disembark and patronize the businesses in the project use this pullout? If so what are the approx. projected lengths of stay of these buses in the pullout? Will the busses be required to turn off their engines in these areas if their stays are in excess of 15 minutes?*

Response: There is no commercial bus stop planned on the site, nor is there a commercial bus stop proposed along the highway. There is an existing City TheBUS stop located in front

of the Foodland. This City bus stop must be relocated either closer to the intersection with Pupukea Road, or to the north in front of the new rural center. The City DTS and State DOT will determine the new location. The new bus stop is not for use by commercial buses.

Comment: *What are the projected vehicle emissions of the idling buses during their length of stay? What would be the effects on the ambient air quality from these emissions? The pollutants these buses emit in the pullout during a typical stay may include diesel fuel, engine oil, transmissions fluids, and other pollutants what are the effects of these pollutants to the near shore waters of the Pupukea Marine Life Conservation District? Please describe in detail mitigation efforts to prevent these pollutants from entering the near-shore waters.*

Response: Final EIS Section 3.14 addresses air quality. Ambient air quality is very good at the subject properties, and the project is not anticipated to have a significant effect on air quality. Regular engine maintenance are schedules by the TheBUS, including engine and transmission fluids systems. Buses and commercial vehicles are not subject to emissions testing in Hawai'i. Final EIS Section 3.16 and Appendix H address the storm drainage system and urban pollutant reduction measures.

Comment: *Section L - Secondary impacts on public facilities: Litter Please consult with the Director of Health regarding is litter control program. There appears to be eight spaces for food establishments in the proposed food court. With many food establishments with "takeaway" capabilities what measures will be proposed to limit the use of Styrofoam, plastic bags, straws or other manmade materials that are potentially toxic or lethal to marine animals thru ingestion or entanglement. The projected volumes of visitor/patrons are 5,000 per day, what are the direct effects to the nearby parks in relation to litter? Would there be any restrictions placed on the take-away food court eateries to alleviate? What programs would you implement for litter control? What are the estimates of additional trash generated from take-away food containers, utensils and bags? What is the effect to the trash receptacles at these nearby parks? Please describe the trash receptacles, in detail, the number of receptacles, current schedules of trash removal in the Sharks Cove park areas. Please discuss in detail mitigation measures to prevent and control litter in the parks from the increase in takeaway food establishments. Will the developer be mandated by the City to provide litter and trash pick up to compensate for the volumes of trash that will be placed in the limited trash receptacles at Pupukea Beach Park? Will design changes to existing open garbage cans be necessary to prevent trash from blowing out of trash containers with no lids due to increased volumes of trash? The prevailing trades pass over Pupukea in a west to east, north to south pattern. They blow from the top of the park toward the ocean. What are the impacts of litter that not safely stowed inside trash receptacles flying off into the near shore waters and its effects on sea life?*

Response: Solid waste is addressed in Final EIS Section 3.16.2. Measures are planned to minimize waste at the rural center, using measures such as collecting recycling materials. Lease terms for the mobile food trucks will require take-away food containers to be non-polystyrene. Commercial grade trash receptacles with covers will be provided at key locations, and regularly maintained to minimize the generation of windblown litter. In addition, site maintenance staff will regularly patrol the property to collect litter.

Comment: *Impacts on Public Restroom and Shower Facilities. Please consult with the C&C Parks & Recreation Divisions to ascertain the wastewater capacities in the Sharks Cove and Pupukea Rec. Center public facilities. With a projected 5,000 visitors daily what are the projected visitor counts that might avail themselves to use the public facilities in the Pupukea Beach Park? What would the projected additional water usage be from the increased usage? What other effects will the additional users have to these Parks & Recreation public facilities? What is the current budget for and maintenance schedules of the Pupukea Park and Sharks Cove park areas? Will the increased usage affect the City's ability to maintain these parks? What are mitigation measures and estimated additional cost to the city to provide for adequate maintenance of these areas? The final EIS [OR REVISED Draft EIS] must discuss the project impacts in relation to each of these criteria in detail. It is not sufficient to simply state that a project does not have any significant impacts or to just restate each criteria in its negative form. Evidence justifying the determination that the proposed action will or will not result in any significant environmental impact must be included.*

Response: Potential cumulative and secondary effects are addressed in Final EIS Section 3.18. The rural center will not have adverse effects on the public beaches, as discussed in prior responses and the Final EIS Section 3. There will be on-site parking provided which will be fully compliant with the requirements of the Land Use Ordinance. The rural center cannot be responsible for supporting the needs of the users of the beach park across the highway. The future management of the beach park is matter which the City can address in planning for the projected future use levels and demands upon its support facilities

Comment: *Section M – Planning Processes: Intent and Purpose: The North Shore Sustainable Communities Plan, the O'ahu General Plan, and the Hawai'i State Plan call for the North Shore to be a rural community serving as an agricultural, recreational, and public open space area for the benefit of both residents and visitors. We would suggest that a project with potentially over 80 retail, 10 restaurants and 10 office spaces proposed could substantially affect the economy of the community and civic centers of Haleiwa & Waialua Towns. Please describe in detail and provide comparisons to other rural community commercial centers in the rural districts of the North Shore, Kuololoa, Waianae areas. Please describe the populations they serve, the services provided and the density of each center. Please include whether the existing centers that required widening or other improvements to Kamehameha Highway or Farrington Highway to support access to other commercial centers. Please include whether the existing centers have underground parking. Please provide comparisons to the immediate area to include other Conservation Districts, Beach Parks or other special natural features. Please include details of the off street parking availability to these centers. In the event the centers affect surrounding beach parks was any mitigation necessary after the implementation of these centers to compensate for any negative impacts.*

Response: The North Shore community recommended in 2012 that the subject properties at Pupukea should become the Rural Community Commercial Center, and the City planners and Honolulu City Council agreed with this. Now established in the Ordinance, the plans for the property have been carefully framed to bring the rural center to life, as described in the Final EIS Section 2. The rural center will provide goods and services to the residents of the surrounding communities of Pupukea, Sunset Beach and Kawailoa, and their visitors. There is no plan for underground parking. As required by the City, each property must meet its

on-site parking demand per the LUO standards. As required by State DOT, commercial properties developed in rural areas of the island have added turning lanes on the highway.

Comment: *The LUO states that it is a B-1 business district. The intent of the B-1 neighborhood business district is to provide relatively small areas, which serve the daily retail and other business needs of the surrounding population. It is intended that this district be generally applied to areas within or adjacent to urban residential areas, along local and collector streets, but not along major travel routes or on a large-scale basis. It would also be applied to rural and urban fringe town centers which may or may not be located along major travel routes.*

Section North Shore Sustainable Communities Plan and the designation "Rural Community Commercial Centers" In the North Shore Sustainable Communities Plan, this area is identified as a "Rural Community Commercial Center" and it should contain a "small cluster of commercial and service businesses which serve primarily the immediate community" … "and provide a range of goods and services to meet the needs of the surrounding residential communities and visitors to the North Shore…" The Plan also declares that uses in this area should be scaled to be compatible with the area's rural character and surrounding land uses. Small-scale development would imply that the projects density would be in keeping with the plan and be compatible with the surrounding land uses. According to the 2010 census, Pupukea/Sunset Beach (96712) has 7352 residents. This would imply that the Rural Community Commercial Centers primary function would be to serve the 7352 residents of Sunset Beach and Pupukea [96712]. Not to exclude the other residents from neighboring communities and visitors, but its primary function is to serve the residents in the immediate community. We have spoken with the branch managers of the Hale'iwa branches of the Bank of Hawaii, and First Hawaiian Bank as well as the Haleiwa Post Office and they have no plans at this time to relocate or open branches in the Pupukea area. The residents will still have to drive to Haleiwa, Kahuku and Laie to conduct their banking and postal needs. How many businesses can be accommodated? In the conceptional drawings there appear to be several kiosk's shown, how many kiosks can your court yard handle? Is this number included in your maximum retail establishment numbers? Could this proposal be adjusted to a more appropriate size and scale? How could the greater North Shore community sustain the viability of a project of this size and maintain the rural country atmosphere?

Response: This series of comments is primarily addressing the scale of the rural center and its compatibility with the area's rural character and surrounding land uses. Final EIS Section 2 provides background on the formation of the concept for the rural center. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. The rural center is very sensitive to the setting and project scale, with plans for modest two story wooden buildings totaling 28,300 SF net leasable floor area (34,000 SF gross). This scale represents roughly 25% of the allowable floor area under the LUO, and more in keeping with the rural country atmosphere of this community. Tenants planned for the rural center are Hawaii-based businesses, such as Island Urgent Care and Waialua Federal Credit Union, which will be focused on services for local residents and their visitors.

Comment: *Will the delivery vehicles and commercial buses be allowed to idle while in the loading area or will they be required to turn off their engines? Please provide data from the EPA Clean Air Act on the impacts to air quality to the project area and surrounding residential*

community from commercial vehicles and the projected vehicles a day to access facility? In the event that these vehicles are to idle what are the projected vehicle emissions of these vehicles and how will these emissions effect air quality? Please list the effects of these activities the residents on Pahoe Road?

Response: Final EIS Section 3.14 addresses air quality. Ambient air quality is very good at the subject properties, and the project is not anticipated to have a significant effect on air quality. Commercial vehicles are not subject to emissions testing in Hawai'i. As practical, delivery vehicles will be encouraged to turn off engines during delivery standing periods.

Comment: *What are the projected volumes of commercial delivery vehicles per day? Will commercial buses and delivery trucks be allowed to park in "que" on Pahoe Road while waiting for an available loading dock? Will the commercial vehicle be required to reverse into these loading areas? How will this affect the traffic on Pahoe Road? What is the average noise level produced by the reversing safety horns/beeps? What are the impacts to the surrounding residents by these noise levels? What mitigation measures will be in place to minimize the vehicular traffic noise to the adjacent residential neighborhood? Please address the effects of noise pollution both during construction and after construction to the immediate area. Please consult with the Director of Health on ways to prevent excessive noise from both vehicular sources and stationary sources. Please list the maximum permissible levels, and statewide rules and the permits necessary for the noise during construction and vehicular sources after construction on the immediate area. Refer to Vehicular Noise Control for Oahu and relate them to your project and their relation to the delivery vehicles, commercial buses, and increase traffic of on Pahoe Road and Kamehameha Highway. Please refer to Community Noise Control and relate them to your proposed project in relation to the proposed bar and restaurant proposed at the corner of Kamehameha Highway and Pahoe Road. What are the permissible levels of noise in this rural residential neighborhood?*

Response: This series of comments relates to construction and operational noise, which is addressed in Final EIS Section 3.15 and Appendix G. The rural center will not create adverse noise conditions due to the project access and design layout. The access to the site is via driveway off Kamehameha Highway, and vehicles and delivery trucks will not utilize Pāhoe Road. For the construction phase, State Department of Health Noise Permit will be obtained which will specify noise levels and construction work timing. HAR Sec. 11-46 Community Noise Control rules specify noise limits of 60 dBA at the property line. In the long-term, operational noise will be minimized through building design and site layout. Rules limit the exterior noise level at 45 dBA or less at the closest residence, will be complied with.

Comment: *What are the potentially detrimentally affects upon the air or water quality or ambient noise levels from the project to the immediate area? With regard to Air Pollution Control (HRS 342B) please consult with the Director of Health regarding your project and relate these to the Ambient Air Quality Standards and Air pollution control. What are the current ambient air qualities of the immediate area? What effect will your project have on the ambient air qualities? What alternatives are there to mitigate the negative effects of the air pollution caused by vehicles accessing the project?*

Response: Final EIS Section 3.14 addresses air quality. Ambient air quality is very good at the subject properties, and the project is not anticipated to have a significant effect on air quality. Commercial vehicles are not subject to emissions testing in Hawai'i. As practical, delivery vehicles will be requested to turn off engines during delivery standing periods.

Comment: *Section N - Scenic view planes. Significant Criteria # 13 Substantially affects scenic vistas and view planes identified in county or state plans or studies. In the North Shore Sustainable Community Plan 3.1.3.7 Scenic Resources and Scenic Vies, list "the lateral views from Pupukea Beach Park" as a scenic view. The draft EIS states that, "The views of the Plateau from the highway will be obscured by the proposed buildings". The proposed project will substantially affect this scenic vista and the view planes identified in the county plans. The beach park at Pupukea is located directly across from Kamehameha Highway. From the ocean and beach park, the views will also be obscured. Beach and park users in the Sharks Cove/Pupukea area will be greeted by a two- story commercial structures overlooking the tidal pool area and heavily used public beach park. These buildings will emit the feeling of being next to a "Mini- Lahaina" like resort town, not our rural community. In the artist conception drawings show the frontage of Kamehameha Highway located just off the sidewalk/promenade. With a projected visitor count of 5,000 per day, over 400 visitors and hour will be visiting the center. Beach goers and passer Byers will truly have a sense of being near a busy bustling shopping plaza. The park users and beach goers will also be looking directly at the 85" long commercial bus stop. This area in the traffic study projects eight buses per hour utilizing the proposed commercial bus pullout. Visitors to the beach parks will also get the feeling that they are not in the country any more. What are the proposed alternatives to maintain the vistas from Pupukea Beach Park as outlined in county plans?*

Response: The rural center will follow the guidelines outlined in the North Shore SCP. The site plan creates a landscaped setback from Kamehameha Highway, to establish a large central green. Unlike the requirements in Haleiwa Special District to mass buildings toward the street, the new buildings will observe a greater setback. The single-story ocean sports building is about 50 feet from the highway. The main two-story wooden building is set back about 125 feet from the highway. The face of the north building, positioned perpendicular to the highway and shoreline, is about 70 feet from the highway. Considering the generous building setbacks, and the new landscape plantings of trees and low shrubs, the rural center design elements work together to create a comfortable scale for this country environment. There is no commercial bus stop, only the City's TheBUS stop which will be repositioned closer to the Pupukea Road intersection or in front of the new rural center.

Comment: *Section - Underground Inject control program. Dept. of Health Chapter 11-19 Emergency Plan for Safe Drinking Water Chapter 11-20 Rules relating to potable water systems. Chapter 1121 Cross-connection and backflow control Chapter 11-23 Underground Injection Control. The final EIS [or revised Draft EIS] needs to address the sizing and scale of wastewater mitigation and mitigation of storm water effluent carrying food truck residue to sensitive ecosystems. The current information is extremely inadequate for the scope of a Draft EIS.*

Response: As stated in Final EIS Section 3.16 and Appendix H, the rural center will comply with Dept. of Health rules, as applicable to the project, including: Ch. 11-19 Emergency Plan for Safe Drinking Water; Ch.11-20 Rules relating to potable water systems; Ch. 1121 Cross-

connection and backflow control; and Ch. 11-23 Underground Injection Control. State DOH rules for mobile food trucks will also be complied with.

The owners have taken great strides to engage a qualified professional team to listen closely to the community and design a project which is consistent with the NSSCP policies and objectives for the Rural Community Commercial Center. It is recognized from your comments that the project brings concerns about the scale and type of development. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. We welcome your continued involvement in this planning process, as it is this community's care and attention to good planning that helps to retain the special qualities we all value.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. In closing, we thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

PRIVATE ENTITIES

From: Roger Wall <RWall@sullivanfamilyco.com>
Sent: Wednesday, January 3, 2018 3:03 PM
To: ashaw@honolulu.gov; pupukea@g70design.com; hanapohakullc@gmail.com
Subject: Proposed Pupukea development adjacent to Pupukea Foodland

The Sullivan Family Limited Partnership (SFLP) which owns the land on which Pupukea Foodland is situated has been in close contact with the principals and planning team for Hanapohaku over the past year and has participated in regular meetings to stay updated on conceptual plans for their site. With the Foodland store identified as part of the Rural Commercial Center in the 2011 North Shore Sustainable Communities plan, and as the direct neighbor to the subject properties, SFLP is generally supportive of the current plan.

SFLP is also supportive of the shared entry from Kamehameha Highway and the restriping of the Foodland parking lot which allows Foodland to gain additional parking spaces. We are prepared to coordinate with Hanapokahu to ensure that the site circulation and parking lots of both sites are complementary and conducive to efficient flow of vehicles and satisfactory customer experience.

Pupukea Foodland has proudly served residents of the North Shore Community for nearly four decades and we sincerely value the patronage and support of our customers, the residents of Sunset Beach and the Pupukea community. We look forward to actively engaging with Hanapohaku in fulfilling the community's long term vision for this land and neighborhood.

Aloha,

Roger J. Wall
Manager
The Sullivan Family Limited Partnership

*Note: This message, including any attachments, contains confidential information intended for a specific individual and purpose, and is protected by law. If you are not the intended recipient, you should destroy this message, including any attachments. Any disclosure, copying or distribution of this message, or the taking of any action based on it, is strictly prohibited.

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Roger Wall
Email: RWall@sullivanfamilyco.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Wall:

Thank you for your email dated January 3, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comments: *The Sullivan Family Limited Partnership (SFLP) which owns the land on which Pupukea Foodland is situated has been in close contact with the principals and planning team for Hanapohaku over the past year and has participated in regular meetings to stay updated on conceptual plans for their site. With the Foodland store identified as part of the Rural Commercial Center in the 2011 North Shore Sustainable Communities plan, and as the direct neighbor to the subject properties, SFLP is generally supportive of the current plan.*

SFLP is also supportive of the shared entry from Kamehameha Highway and the restriping of the Foodland parking lot which allows Foodland to gain additional parking spaces. We are prepared to coordinate with Hanapokahu to ensure that the site circulation and parking lots of both sites are complementary and conducive to efficient flow of vehicles and satisfactory customer experience.

Pupukea Foodland has proudly served residents of the North Shore Community for nearly four decades and we sincerely value the patronage and support of our customers, the residents of Sunset Beach and the Pupukea community. We look forward to actively engaging with Hanapohaku in fulfilling the community's long term vision for this land and neighborhood.

Response: Hanapohaku and the planning team appreciate SFLP's active participation in the development of planning concepts including parking and on-site circulation. SFLP's on-going support is instrumental to the success of the larger community-envisioned rural community commercial center.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Thielst, John <Thielst@coffman.com>
Sent: Sunday, December 31, 2017 3:19 PM
To: ashaw@honolulu.gov; Pupukea Rural Community Ctr
Cc: Janelle; deannsakuoka@yahoo.com; wendytsue@yahoo.com; riddled001@hawaii.rr.com; nsfishaman@yahoo.com; laurensakuoka@yahoo.com; karenokuhara@aol.com; Jeffaloha.772@gmail.com; frank.j.niimi.civ@mail.mil; falko1@me.com; controltechllc@gmail.com
Subject: Comments RE: Hanapohaku DEIS - Fr: Pahoe Rd Neighborhood Hui

To DPP and G70,

The Pahoe Rd Neighborhood Hui are very concerned with this project as we feel it is still very much too dense for this rural area. Please find the following comments:

1. The EIS shows a fence along the Sunset side of the project with no ingress to or from Pahoe road. The developer has also committed and promised that this will remain as part of the project plan. If removed the whole EIS process must start over.

2. The Pahoe Road Hui is also very concerned about the impact from the noise, lights and spill over from the business closest to the road and feel these issued must be mitigated prior to final approval and permitting.

3. While spill over traffic from the project has slowed somewhat there is still a significate amount of traffic that comes up Pahoe road looking for access to the project area and has to turn around in owners drives ways etc. Pahoe road is privately owned where many children play and the additional traffic is a potential for pedestrians to be impacted.

4. Appendix F Traffic Impact Analysis Report page 35 graph shows traffic going from A to C & D conditions along Kam hwy from Pupukea road through Pahoe road in both directions. This is very unacceptable for the local community in general
The report also uses the 2010 HCM Highway capacity model. Though this might work on the mainland and in the city like Honolulu, the NS is a rural area with big surf, tourist long weekends good beach days which are all local conditions that these models cannot account for.

TABLE 7: NEAR TERM (2021) BASELINE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control[1]	Peak Hour	Near Term Baseline		Near Term Plus Project		Delay Change
			Delay (sec/veh)[1]	LOS[2]	Delay (sec/veh)[1]	LOS[2]	
1. Kamehameha Hwy/Pupukea Rd	Signal	MID	8.1	A	9.6	A	1.5
		PM	7.6	A	9.2	A	1.6
		SAT	9.2	A	10.9	B	1.7
2. Kamehameha Hwy/Project Dwy/Foodland Dwy	Side Street Stop Control	MID	Driveway Does Not Exist Under This Scenario		24.1	C	24.1
		PM			23.5	C	23.5
		SAT			30.1	D	30.1

Source: Fehr & Peers, 2017.
Notes:
[1] Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized and all-way stop-controlled intersections. The vehicular delay for the worst movement is reported for side-street stop-controlled intersections.
[2] LOS calculations performed using the *Highway Capacity Manual (HCM) 2010* method. LOS for side street stop-controlled (SSSC) intersections is worst-case movement.

5. This traffic report admits more traffic will be generated from the project and claims "No Significate Impact" the traffic is terrible now, so how can adding more vehicles no be an "Significate Impact" to the roads, local community and pedestrians?

General Comments and questions:

1. In the water use and waste water sections it says average water use will be 8160gpd and max of 12240 gpd. Most of this might be waste of some sort and the design flow for waste is 10533 gpd. Seems to be cutting it short. The DEIS takes privilege to compare the development to 15 homes with 4 people per home and Mr. Overton pointed to and used Pupukea as the comparison. Those are acre lots and so the comparison is 15 acres to 3 acres. Four people per home equals 60 people yet the developer is saying this will employ 80 to 90 people and then there are hundreds of potential customers each day. We don't see how this is a good nor fair comparison.

2. We were told the bathroom use would most likely be controlled with a key by vendors. That is a lot of power at a location like this as we all know since septic and bathroom access has been a main issue for some time now. Will it be "No Public Bathrooms" like Foodland ? Will each lunch truck have a key? What are the plans for bathrooms and their use by all of the people this project hopes to attract?

3. Is Foodland or will Foodland be added to the conditional use permit so that all 4 lots are treated as one zoning unit?

4. The single consolidated access/exit driveway with a nearby bus stop has great potential for traffic stops and delays greater than the .9 seconds in the DEIS. The length and location of the two-way left turn lane might look like the easy way out for the developer but this is going to be an obstacle course for residents and visitors alike. One only has to watch how the Foodland access points work with a single left turn lane. Why can't Foodland keep its present entrance and possibly give up the exit? How wide is the proposed 1 entry / 2 exit access? How wide is Kamehameha Hwy right of way? There are questions as to how the turn lane will fit and work in this section not to mention trying to control pedestrians crossing randomly like they do now.

5. The DEIS states that they are required to put in 75 parking stalls but brag that they are putting in 125. They also mention allowing 8 lunch wagons to operate which also are required to have parking. If 8 trucks need 6 spaces each that is 48 spaces and that added to the 75 equals 123. WHAT'S REALLY BEING SAID? There is no mention of how many spaces are handicap and EV. Just say what it really is and keep in mind that like Haleiwa and Foodland, the employees use a lot of the parking even if some walk or bike. With all the employment being offered according to Mr. Overton one could estimate 1/3 spaces would be used by employees. Foodland can't manage beach use parking on their property. What are the plans for who uses the parking?

6. The timing of deliveries and refuse service should be clearly addressed. At present those services affiliated with the Foodland have lowered the quality of life for neighbors and community due to early morning noise and traffic stops caused by trucks blocking Pupukea Rd.

7. With the alternative of a 45,000 sf to 50,000 sf commercial shopping center mentioned in Sec.5.2, it seems possible the developer will go bigger once the approvals are given. G70 has expressed this would be approximately 40% of LUO capacity and provide a wider range of goods and services for patrons. HOW DOES THE COMMUNITY KNOW WHERE THIS IS GOING IF THE DEIS PASSES?

8. The DEIS has used a thousand words to paint a picture and in the DEIS, G70 has used drawings (pictures) to express a thousand words. They are stated to be conceptual but why can't they be more realistic. For example figure 2-4 shows 29 coconut palms and almost all are as tall as the buildings with a few much higher. In figure 2-5 Kamehameha Hwy is lined with coconut trees. Figure 2-3 shows palms in front of Foodland and figure 2-4 shows the 4 trees that are there now. Is there a landscape plan in place or is the artist making this project look more appealing with all the trees and greenery? I think much of it is just art. Foodland had hedges, nice grass, and even trees in the parking lot but very little of that survives today for a variety of reasons. The community

still has to view a large parking lot and store because Foodland finds it more important to be seen than blend in behind thicker roadside landscaping.

9. The conceptual idea is used with how the lunch trucks appear. Except for one truck shown in figure 2-5, the other drawings show what appear to be a few cars or pickup trucks parked with one or two people talking story. Where are the trucks, people, tables, umbrellas and lights at night?

10. Hanapohaku LLC does not have a good track record with everything associated with this property. Inactions and problems continued to plague project while continuing to loss the trust of the local community.

11. It is interesting how this project is being referred to as –Rural –Community – Commercial – Center. Yes most of us feel we are rural and like it that way. We have a nice community center, which G70 helped design, right down the road. The commercial centers for Paumalu (Sunset Beach), Pupukea and Kawailoa are Haleiwa / Waialua as well as Laie / Kahuku and should remain that way. Haleiwa has become a tough place to navigate with all of the autos, bused in tourists and pedestrians which are drawn in part to the new KS project of stores. This Commercial Center being planned is not going to make our rural community better and I fear just the opposite....another crowded spot in the road where life slows down but not in the rural kind of way. This development will take away much of the rural character of our area and negatively impact the lives of our residents and visitors (although most visitors don't realize it at the time).

Thank you

From: Pahoe Road Residents Hui

Members:

John W. Thielst
58-081 Pahoe Rd
Haleiwa HI 96712
thielst@coffman.com
14 year Pahoe Rd owner & resident
TMK 5-9-11-066
Pahoe Rd Neighbors Hui Representative

Dean Sakuoka, Lauren Sakuoka,
DeannSakuoka Sweet, Janelle Sakuoka
58-062 Pahoe Rd
Haleiwa HI 96712
deannsakuoka@yahoo.com
northshorecountry@msn.com
laurensakuoka@yahoo.com
60 year Pahoe Rd owner & resident
TMK 5-9-11-022

Melvin and Wendy Tsue
58-694 Kam Hwy
Haleiwa HI 96712
controltechllc@gmail.com
wendytsue@yahoo.com
67 year Pahoe Rd owner & resident
TMK 5-9-11-030

Ingo Rademacher
58-068 Pahoe Rd
Haleiwa HI 96712
falko1@me.com
10 year Pahoe Rd owner & resident
TMK 5-9-11-014

Karen and Kathy Okuhara
58-079 Pahoe Rd

Frank Niimi
58-086 Pahoe Rd

Jeff Schultz
58-071 Pahoe Rd

David Riddle
58-076 Pahoe Rd

Haleiwa HI 96712
Ktanahara05@yahoo.com
50 year Pahoe Rd owner & resident
TMK 5-9-11-064

Haleiwa HI 96712
frank.j.niimi.civ@mail.mil
30 year Pahoe Rd owner
TMK 5-9-11-012
TMK 5-9-11-008

Haleiwa HI 96712
Jeffaloha.772@gmail.com
12 year Pahoe Rd owner & resident
TMK 5-9-11-015

Haleiwa HI 96712
riddled001@hawaii.rr.com
25 year Pahoe Rd resident
TMK 5-9-11-012

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. John Thielst
Pahoe Road Residents
58-081 Pahoe Road
Haleiwa, Hawaii 96712

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Thielst:

Thank you for your comment letter dated December 31, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment 1): *The EIS shows a fence along the Sunset side of the project with no ingress to or from Pahoe road. The developer has also committed and promised that this will remain as part of the project plan. If removed the whole EIS process must start over.*

Response: The Final EIS shows a fence with no ingress to or from Pahoe Road.

Comment 2): *The Pahoe Road Hui is also very concerned about the impact from the noise, lights and spill over from the business closest to the road and feel these issued must be mitigated prior to final approval and permitting.*

Response: *Section 3.15* of the EIS includes an analysis of short-term construction noise and long-term operational noise and potential impacts relative to the State Department of Health, Hawaiʻi Administrative Rules §11-46 Community Noise Control. Long-term operational noise will be minimized through design of the buildings on the north and east sides of the project. The building design will utilize fixed windows on the exterior wall on the Pāhoe Road side and provide enclosed interior air-conditioned space. The restaurant will be acoustically designed to reduce exterior noise levels to 45 dBA or less at the closest residence. To minimize potential noise from delivery trucks, such as that of back-up alarms, deliveries to the commercial establishments during nighttime or early morning hours will be avoided. Daytime and nighttime noise limits of the State DOH will be strictly enforced at the property.

Exterior lighting at the rural community commercial center will comply with the objectives and policies of Hawaiʻi Revised Statute Chapter 205A Coastal Zone Management Section71(b), which requires all outdoor lights to be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights. Wall-mounted lights will be downlights or otherwise shielded, and lights used in open or parking areas will be full cutoff or fully shielded (EIS *Section 3.17.2*).

Comment 3): *While spill over traffic from the project has slowed somewhat there is still a significate amount of traffic that comes up Pahoe road looking for access to the project area and has to turn around in owners drives ways etc. Pahoe road is privately owned where many children play and the additional traffic is a potential for pedestrians to be impacted.*

Response: Customers to the rural center will be guided to the main entrance via clear signage (EIS *Section 2.4.1*). There will be no access to or from the privately owned Pāhoe Road.

Comment 4): *Appendix F Traffic Impact Analysis Report page 35 graph shows traffic going from A to C & D conditions along Kam hwy from Pupukea road through Pahoe road in both directions. This is very unacceptable for the local community in general. The report also uses the 2010 HCM Highway capacity model. Though this might work on the mainland and in the city like Honolulu, the NS is a rural area with big surf, tourist long weekends good beach days which are all local conditions that these models cannot account for.*

Response: LOS C and D are acceptable operating levels at intersections with Kamehameha Highway according to both HDOT and the City & County of Honolulu (EIS *Section 3.13.2*).

Comment 5): *This traffic report admits more traffic will be generated from the project and claims "No Significate* [sic] *Impact" the traffic is terrible now, so how can adding more vehicles no be an "Significate Impact" to the roads, local community and pedestrians?*

Response: The analysis methodology applied in the Transportation Impact Analysis Report (TIAR) utilizes approved models for predicting traffic flow. *Section 3.13.2* of the EIS states: "DOT and the City's Traffic Review Branch define a <u>significant intersection impact</u> when operation of an intersection changes from LOS D or better to LOS E or F" (emphasis added). Note that Table 7 of the TIAR (included in the EIS as Table 3-4) shows that the intersection of Kamehameha Highway and the project driveway will typically operate at LOS C, and possibly reach LOS D on Saturday peak hours. This does not reach the DOT and Traffic Review Branch definition of "significant impact."

Comment 1): *General Comments and questions: In the water use and waste water sections it says average water use will be 8160gpd and max of 12240 gpd. Most of this might be waste of some sort and the design flow for waste is 10533 gpd. Seems to be cutting it short. The DEIS takes privilege to compare the development to 15 homes with 4 people per home and Mr. Overton pointed to and used Pupukea as the comparison. Those are acre lots and so the comparison is 15 acres to 3 acres. Four people per home equals 60 people yet the developer is saying this will employ 80 to 90 people and then there are hundreds of potential customers each day. We don't see how this is a good nor fair comparison.*

Response: Guidance for the wastewater system capacity is provided in Hawaiʻi Administrative Rules §11-62 (Wastewater Systems), and the system must be reviewed and approved by the Department of Health (*Section 3.16.2*). The system capacity accounts for employee and patrons of the center, as well as provides an allotment for transient demand such as employees and customers of mobile food establishments. The number of employees on site will not be the same as the jobs created by the center. *Section 3.11.2* in the Final EIS has been refined to reflect 80

long-term jobs will be created (versus 86 in the Draft EIS). However, fewer employees will be on site at any one time.

Comment 2): *We were told the bathroom use would most likely be controlled with a key by vendors. That is a lot of power at a location like this as we all know since septic and bathroom access has been a main issue for some time now. Will it be "No Public Bathrooms" like Foodland ? Will each lunch truck have a key? What are the plans for bathrooms and their use by all of the people this project hopes to attract?*

Response: As noted in the response to the previous comment, the wastewater system capacity provides an allotment for transient demand such as employees and customers of mobile food establishments. Additionally, the system's ground treatment step, utilizing absorption bed disposal, will be double the required size for 100 percent redundancy. Bathrooms are intended for patrons of the rural community commercial center and will have some type of control to ensure a safe and clean facility.

Comment 3): *Is Foodland or will Foodland be added to the conditional use permit so that all 4 lots are treated as one zoning unit?*

Response: In compliance with the 1996 development agreement, the redevelopment plans for the Hanapohaku parcels included two proposed connections with the Sullivan Entities land. Depending on improvements at the boundary, a Conditional Use Permit for Joint Development may be required by the Department of Planning and Permitting for the Hanapohaku and Foodland parcels. This potential permit requirement has been added to *Table 1-1* in the Final EIS.

Comment 4): *The single consolidated access/exit driveway with a nearby bus stop has great potential for traffic stops and delays greater than the .9 seconds in the DEIS. The length and location of the two-way left turn lane might look like the easy way out for the developer but this is going to be an obstacle course for residents and visitors alike. One only has to watch how the Foodland access points work with a single left turn lane. Why can't Foodland keep its present entrance and possibly give up the exit? How wide is the proposed 1 entry / 2 exit access? How wide is Kamehameha Hwy right of way? There are questions as to how the turn lane will fit and work in this section not to mention trying to control pedestrians crossing randomly like they do now.*

Response: Based on the current DOT standards and traffic engineering practice, the existing Foodland driveways on Kamehameha Highway are located too close to the Pūpūkea Road intersection; this information has been incorporated into *Section 3.13.1* of the Final EIS. By closing the driveways and consolidating traffic to one new driveway on the highway, turning movements will occur at more of a midblock location between Pāhoe and Pūpūkea roads. The addition of a center-two way left-turn lane will provide additional capacity and storage for traffic in this corridor, expediting flow and enhancing safety for vehicles.

Comment 5): *The DEIS states that they are required to put in 75 parking stalls but brag that they are putting in 125. They also mention allowing 8 lunch wagons to operate which also are required to have parking. If 8 trucks need 6 spaces each that is 48 spaces and that added to the 75 equals 123. What's really being said? There is no mention of how many spaces are handicap and EV. Just*

say what it really is and keep in mind that like Haleiwa and Foodland, the employees use a lot of the parking even if some walk or bike. With all the employment being offered according to Mr. Overton one could estimate 1/3 spaces would be used by employees. Foodland can't manage beach use parking on their property. What are the plans for who uses the parking?

Response: Parking and loading standards are set by the City's Department of Planning and Permitting and are intended to minimize street congestion and traffic hazards, and to provide safe and convenient access to locations including residences and businesses. The parking requirements are documented in the Land Use Ordinance (ROH Chapter 21). The number of parking stalls are calculated based on gross floor area (approximately 34,500 square feet), requiring one stall per 400 square feet of retail, business, and restaurant space (applicable to this center).

Comment 6): *The timing of deliveries and refuse service should be clearly addressed. At present those services affiliated with the Foodland have lowered the quality of life for neighbors and community due to early morning noise and traffic stops caused by trucks blocking Pupukea Rd.*

Response: The following sentence has been added to *Section 3.13.2* of the Final EIS: To minimize delays caused by trucks accessing Foodland's loading dock, deliveries should be scheduled during off-peak times in the early afternoon.

Comment 7): *With the alternative of a 45,000 sf to 50,000 sf commercial shopping center mentioned in Sec.5.2, it seems possible the developer will go bigger once the approvals are given. G70 has expressed this would be approximately 40% of LUO capacity and provide a wider range of goods and services for patrons. How does the community know where this is going if the DEIS passes?*

Response: The EIS is a disclosure document. To comply with the content requirements under Hawai'i Revised Statutes (HRS) Chapter 343 and its implementing rules Chapter §11-200 Environmental Impact Statement, alternatives to the Proposed Action must be analyzed. The Proposed Action as stated in *Section 2.4* of the EIS document is the preferred alternative of the landowner: the rural community commercial center with approximately 28,300 square feet of leasable space. Once the EIS process is complete, permits will be secured based that will specify the allowable development.

Comment 8): *The DEIS has used a thousand words to paint a picture and in the DEIS, G70 has used drawings (pictures) to express a thousand words. They are stated to be conceptual but why can't they be more realistic. For example figure 2-4 shows 29 coconut palms and almost all are as tall as the buildings with a few much higher. In figure 2-5 Kamehameha Hwy is lined with coconut trees. Figure 2-3 shows palms in front of Foodland and figure 2-4 shows the 4 trees that are there now. Is there a landscape plan in place or is the artist making this project look more appealing with all the trees and greenery? I think much of it is just art. Foodland had hedges, nice grass, and even trees in the parking lot but very little of that survives today for a variety of reasons. The community still has to view a large parking lot and store because Foodland finds it more important to be seen than blend in behind thicker roadside landscaping.*

Response: The Conceptual Site Plan (*Figure 2-3*) incorporates the proposed landscape plan and includes palm trees along Kamehameha Highway.

Comment 9): *The conceptual idea is used with how the lunch trucks appear. Except for one truck shown in figure 2-5, the other drawings show what appear to be a few cars or pickup trucks parked with one or two people talking story. Where are the trucks, people, tables, umbrellas and lights at night?*

Response: The Final EIS includes a revised *Figure 2-6* shows the parking spaces that will be made available to mobile food trucks. The new center will not provide the same type of seating/eating areas as the current site; the Central Green will provide one area for those who opt to eat on-site. Please refer to the previous response regarding lighting.

Comment 10): *Hanapohaku LLC does not have a good track record with everything associated with this property. Inactions and problems continued to plague project while continuing to loss the trust of the local community.*

Response: The owners have diligently addressed the concerns of the past through the approval of an SMA Minor permit and compliance with its conditions for current operations. Information relating to permit compliance has been updated regularly on the Hanapohaku website (http://mccullyscorner.com/). The owners will continue to have a very open dialogue with the community and will continue to attend regular meetings of the Sunset Beach Community Association. By maintaining this close relationship the owners will be aware of community issues and concerns, particularly those involving the rural center, and appropriately respond to these concerns.

Comment 11): *It is interesting how this project is being referred to as –Rural –Community – Commercial – Center. Yes most of us feel we are rural and like it that way. We have a nice community center, which G70 helped design, right down the road. The commercial centers for Paumalu (Sunset Beach), Pupukea and Kawailoa are Haleiwa / Waialua as well as Laie / Kahuku and should remain that way. Haleiwa has become a tough place to navigate with all of the autos, bused in tourists and pedestrians which are drawn in part to the new KS project of stores. This Commercial Center being planned is not going to make our rural community better and I fear just the opposite….another crowded spot in the road where life slows down but not in the rural kind of way. This development will take away much of the rural character of our area and negatively impact the lives of our residents and visitors (although most visitors don't realize it at the time).*

Response: Please see *Section 2.3* of the EIS which explains that the North Shore Sustainable Communities Plan designated the parcels as the one "Rural Community Commercial Center" to consolidate commercial uses for the region. The policies and guidelines applicable to the designation are also included in Chapter 2 (*Figure 2-2*).

The owners have taken great strides to engage a qualified professional team to listen closely to the community and design a project which is consistent with the NSSCP policies and objectives for the Rural Community Commercial Center. It is recognized from your comments that the project brings concerns about the scale and type of development. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. We welcome your continued involvement in this planning process, as it is this community's care and attention to good planning that helps to retain the special qualities we all value.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. In closing, thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

cc: Thielst@coffman.com

INDIVIDUALS

January 8, 2018
ArdisShawKim,(808)7688021, ashaw@honolulu.gov
Andrew Yani, (808) 779-5733, hanapohakullc@gmail.com
Jeff Overton, AICP LEED AP, (808) 523-5866, pupukea@g70.design

Re: Pūpūkea Rural Community Commercial Center DRAFT EIS RESPONSE
regarding: TMK(s) (1) 5-9-011:068, 069, 070, 016

Aloha Kakou,

I have been a resident of the North Shore for 18 years, in Pupukea for 8 and 10 at Turtle Bay. Please find my questions, comments and concerns below. I look forward to your responses.

Thank you,
Angela Huntemer

My questions and comments cover three main topics of concern:

Ecological impacts:

No matter what kind of wastewater treatment system is employed, given the proximity of the Shark's Cove Marine Life Conservation District, this ecological gem should not be subjected to any more risk of degradation than it already is.

The "studies" carried out in the MLCD were pathetically inadequate and none of the previously published studies of the area were reviewed or included in the references.

Run off and leaching of cleaning chemicals, engine oil and other substances were not addressed. Actual usage of toilets is not accurate. Estimates of rainfall events are not accurate. The list is long on risks and questions.

Impacts on quality of life of North Shore residents:

The number of food trucks is vague, to say the least. This results in an inability to accurately forecast traffic and based on projections in the document -a parking apocalypse.

The rerouting of the entrances to Foodland and the "Center" into one, will result in perhaps being able to get into the development but will make it EXTREMELY difficult to park and then get out of the place. Especially aggravating will be trying to get in from Kahuku side and out going in the direction of Haleiwa.

Past behavior as a predictor future behavior:

Last and certainly not least is the fact that the landowners of this property and the people currently seeking to build their "Center" have operated illegally for years. They have flagrantly violated state laws. It is my understanding that they have accrued over $100,000 in fines. The DPP subsequently issuing them City's approval of SMA/2017-21 permit defies common sense.

The situation raises serious questions about the decision makers involved at the DPP.

The pictures used in DEIS are old. They do not show the illegal grubbing, grading and building on the property. Please show current status and identify all of the work done with and without existing permits.

Proposed Action Page 1-9 - Page "committed to pursuing Hawaii based businesses"
"urgent medical care services, credit union, professional services, surf shop and action sports, fitness studio, child care, health food market/deli, mobile food establishments and restaurant."
#1 There are already established alternatives to putting new entities here.
#2 Even if one could appreciate that it would be a "nice idea" one might not necessarily want such establishments in this neighborhood.
#3 Being committed to pursuing Hawaii based businesses sounds good but there is no guarantee that those are the business that would be on the property and no guarantee that they would be Hawaii-based.

"long drives to urban centers on O'ahu"? 1-14 It's OK. We are used to that. We can go to Haleiwa and/or Kahuku.

1-10 detention storage system
"the rural center's drainage system will have a significant environmental benefit in comparison to the present use ". This makes NO logical sense since the present design of Legal system was used in Over capacity and the proposed and installed system was done WITHOUT permit and cannot be accurately quantified in relationship to standards which do not address the sliding scale usage proposed.

1.4.2 Adverse Impacts
"Disposal of treated wastewater effluent will slightly increase the groundwater concentrations of nitrogen and phosphorus. The impact of the increased nutrients in groundwater will not be realized until the groundwater reaches the marine environment. The additional 4.3 percent nitrogen and additional 7 percent phosphorus would likely be undetectable in the marine environment at distances from the shoreline where marine communities occur (Refer to Section 3.7.1 Marine Environment: Probable Impacts and Mitigation Measures)."
How does the consultant, Dr. Dollar (and the author of Draft EIS), justify his inability to identify the obvious dismissal of SIGNIFICANT issues with the elevation of these components in the marine environment? The term undetectable is ambiguous and what metric will be used to determine a "true"

baseline prior to the permanent increase of the introduced components into the near shore water environment.
Even if this were true that the additional nitrogen and phosphorus would be undetectable in the marine environment at distances from the shoreline where marine communities occur - #1 your EIS lacks discussion of other contaminants, for example engine oil, cleaning products and other chemicals which will likely percolate through the soil and or runoff to the ocean. #2 What are you talking about? Marine communities occur AT the shoreline.

"An additional 1,322 net new daily vehicle trips are projected from the development of the rural center. During midday and evening peak hours, a total of 65 net new trips (29 inbound to the center and 36 outbound from the center) are anticipated; Saturday midday peak hours total 98 (51 inbound and 47 outbound). The impact of the increased traffic related to the project at the intersection of Kamehameha Highway and Pūpūkea Road would continue at level of service (LOS) A during both peak hours of traffic, with LOS B during Saturday peak hour traffic. The potential delay for a vehicle under LOS B conditions would be an additional 1.7 seconds over the near-term baseline conditions. DOT and the City's Traffic Review Branch define a significant intersection impact when operation of an intersection changes from LOS D or better to LOS E or F. The rural center construction will not significantly impact traffic in the region."
Even if your figures are correct that is 1,322 net new daily trips, that is 1,322 trips too many. Your projected delay time does not come close to the gridlock that would ensue were this misguided project actually be built. Based on the lack of parking space for the proposed development compounded by the rerouting of the entrance and exit, it would be a frustrating experience for people just trying to get in and out of Foodland.

If parking is behind the buildings – how does that cohere with the parking being in front of Foodland? Does the consultant/author of the DEIS understand the contradiction of off-street traffic flow regarding this incongruity? Several experts have voiced confusion that this asymmetrical design is being proposed as it is likely going to be a gridlock situation in the parking lot.

This parking lot integration needs a SUPPLEMENTAL Draft study to understand the interconnection of these parking areas and the future gridlock and synergistic complexities of traffic flow at this critical area on Kam. Hwy.

1-13
"The Sunset Beach/Pūpūkea community has expressed that some existing commercial operations at the property are <u>less</u> desirable, such as the disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, haphazard vehicle ingress/egress, and non-focused pedestrian access. With the City's approval of SMA/2017-21 there is authorization to continue with a conditional use of the property, with very specific actions required of the owners to manage activities to minimize effects to neighbors, the community and the environment. Importantly, it remains the stated purpose of the owners to diligently plan towards the long-term objective of creating the Rural Community Commercial Center, as they seek to achieve the common objectives of the community and government planning policy for future use of this property."
Why would the owners suddenly diligently plan towards the long-term objective of creating the Rural Community Commercial Center, as they seek to achieve the common objectives of the community and government planning policy for future use of this property? What changed? Did we miss something? They have acted in flagrant violation of DDP regulations, Department of Health regulations amongst others for years. They do not appear to have any intention of paying the City and County fines that they have accrued.

The owners might have thought to act on these intentions earlier if they had been of any real importance to them. They have not only shown themselves to be out to rake in as much cash as possible without regard for the law, they have shown themselves to be very poorly organized. This combination does not bode well for an expanded operation so close to one of the most diverse and fragile marine ecosystems and for the ability of residents to navigate the single two-lane highway that is our lifeline and environs.

"2-3 The project site currently houses a small surfboard retail and rental establishment (North Shore Surf Shop) and a beachwear/swimwear store (Seamaids), a real estate office, a commissary (servicing one food truck) with office, and five mobile food establishments (food trucks). Supporting uses currently on the property include food truck seating areas, portable toilets, portable hand-washing station, parking areas, trash dumpsters, fences, water lines, electrical lines and landscape. Drainage controls have been added to manage storm water runoff. The commercial operations on the property are entitled under Special Management Area (SMA) Use Permits, including an SMA – Minor in 2017 (2017/SMA-21). Hanapohaku is to comply with specific terms and conditions to clear past use violations. Current compliance actions include settlement of fines and obtaining site development and building permits. The existing uses will be completely removed for development for the Rural Community Commercial Center."

-Note settlement of fines as opposed to payment of fines. Does this imply that developer will attempt to evade payment of the existing accrued fines?

"Vehicle access can periodically be blocked from the hardscaped area adjacent to the central green to allow for periodic pedestrian-friendly community gatherings and cultural events, such as art shows, farmers' markets, mobile food trucks, and music and dance performances."
Periodically blocked means even less parking spaces.

Page 2-17
States that the Rural Center may include:
"• Urgent Care – small scale medical service clinic for non-emergency needs"
Kahuku Medical Hospital and outpatient center, Kaiser Permanente medical center, Haleiwa medical center and Wahiawa General have us pretty well covered as long as we can get there ie. The road is not blocked.
"• Pharmacy & Health Products – small scale pharmacy, health products, organic products"
Foodland, Longs Haleiwa and Foodland Laie, Longs Hauula and Celestial Natural Foods do a pretty good job of providing us with above named products and services.
"• Bank – small scale bank branch, financial services"
There is a BOH ATM in Foodland, there are banks in Haleiwa and Kahuku.
"• Business Center – copy services, business supply, package shipping/delivery, private post office"
Why? People who work from home here have figured out how to get these services and or do them themselves. People have scanners and printers etc.
"• Professional Services – dentistry, chiropractic, psychiatry, legal, accounting, etc.
• Real Estate Office – continue/expand an existing, on-site business
• Surf Shop, Beach Apparel & Action Sports Retail – continue/expand existing, on-site business
• Other Retail - art gallery, cultural arts, music and jewelry"
Waimea Valley, Turtle Bay and Haleiwa town all provide opportunities for "other"retail businesses.
"• Yoga & Fitness Studio – multipurpose studio, with potential for dance, hula, music" These activities are offered at Turtle Bay Resort, Sunset Beach Rec Center, Waimea Valley, Haleiwa town and elsewhere.
"• Child Care Center - day care center for families"
There is not enough parking or outside space (protected) for this.
"• Community Organization – office space for local community/environmental organization"
Really like who? Would the owners offer free office space to Malama Pupukea Waimea?
"• Quick Service Food – mobile food trucks offering different food types, affordable pricing"
Thanks but we have loads of options up here in that department. Brick and mortar restaurants that following the laws pertaining to their activities have a hard time competing with so many food trucks. Safety and sanitation in these places is not the best.
"• Health Food Market/Deli – dry goods and grab-and-go food"
Celestial Foods is a locally owned business that has been providing this for decades. The Beet Box and Killer Tacos, Sprout, Il Gelato, Kahuku Farms, Fiji Curry House among others provide pretty healthy food fast. They are locally owned.
"• Restaurant – Full service restaurant with bar, with both indoor and outdoor lanai seating"
Turtle Bay, Haleiwa and Waimea Bay all have great options for this type of establishment. I am concerned about the lighting of this business. Particularly the lanai lighting projected to be so near the MLCD.

"The permeable paving material on the lower parking area includes a design to tie the landscaped areas to the buildings (Figure 2-3)."
Actually this looks to be the parking lot for 4 of the food trucks. The other three are on the mauka side of the building.

The projected use of water is 8,160 gallons per day in when the current use 2,200 gallons per day. Not sure how they plan to run the proposed operation on so little water. It is projected that there will be 6,920 gpd out. OK, so there will be some irrigation of landscaping. Which, by the way, will not survive the trampling of people. Checkout Foodland next door. The current owner uses vast swathes of plastic grass to cover the ground because apart from a hard surface it is all that can withstand the foot traffic. Here is the kicker -The current water input is 2,200 gpd and wastewater output is 400 gpd. Where are the other 1,800 gallons per day going?

With respect to the section titled Natural Disasters please respond to the following comments.

Hurricanes are increasing in number and strength. With them will come dangerous storm surges. Kamehameha Highway will be washed out in various places.

Although the document states that the property is not with in the Tsunami Evacuation Zone it is within the Extreme Tsunami Zone. Kamehameha Highway is largely an arbitrary line that delineated the tsunami zone.

In the event of an earthquake Kamehameha Highway would be impacted and there would be possibility of a tsunami.

Regarding flooding, there is projected to be an increase in intense precipitation events and it is likely that water would overwhelm the precautions proposed. We had 6 inches of rain in 24 hours last spring in this area.

Increased coastal erosion is projected as a result of sea level rise. Again, Kamehameha Highway will be directly impacted by this along with many homes.

The short term and long term impacts of these disasters on the community and businesses remain largely unknown.

Also: Not mentioned in the section on Natural Disasters if the fact that there are lava tubes and that sink holes occur in this area.

Flora and fauna- Is there a caretaker? Yes apparently someone lives in the house that is the commissary also vagrants are allowed to stay in containers in the back of the property. This would appear to be illegal.
Lights need to be directed down and away from road/ ocean
The section on Groundwater Conditions Beneath the Project Site reveals that ocean water underlies the site at depth. This is troubling. Contaminants will find their way to the ocean and apart from phosophorus and nitrogen no other substance was mentioned. There is always the possibility that any waste water treatment system will be overwhelmed or have a spill no matter how good. We have had spills of sewage here at Turtle Bay and we have a fully fledged wastewater treatment plant reclaiming sewage back to R2 water for irrigation.
"Somewhat higher nitrogen levels in the down gradient well (B-7) may reflect input from present use of the site". This is disturbing.

Federal, State and County regulations require that receiving waters be protected from pollutants associated with land disturbance, surface hardening and land use activities using implementation and maintenance of BMPs. Pollutants of concern include sediment, nutrients, trash, pathogens, pesticides, oil, grease, hazardous and toxic waste, metals and organic compounds.
- Yes, they only talked about nitrogen and phosphorus… These issues NEED to be addressed in detail and if not adequate than the response from developer should require an ADDITIONAL round of revision until these issues are adequately considered with appropriate methods of remediation offered.

Regarding the proposed "subsurface detention chambers" they sound potentially fragile. Not only will the chambers be difficult to shore up, there will be buildings etc. on them and there are numerous underground caves and lava tubes in the area.
"Overall, the rural center's drainage system will have a significant environmental benefit in comparison the present use.."

The present use has been not abiding by regulations and laws for years.
Has the consultant obtained geotechnical and hydrological review by a licensed engineer ? If so, where are the accurate bore samples of the site that are necessary to substantiate the poorly stated assumptions?

Are the two large parking spaces for tour buses or deliveries or both?

"The pattern of increasing salinity and decreasing nutrient concentrations with distance from shore result from concentrated input of groundwater to the ocean at or near the shoreline throughout the region across Kamehameha Highway from the proposed site."
This clearly means that if the groundwater is contaminated or waste water taps into the flow, it goes straight into the ocean right there at Shark's Cove.

"The open coastal waters offshore of Pūpūkea Beach Park and in the Pūpūkea MLCD are categorized as Class AA under State Water Quality Standards under in HAR §11-54-6(b). The objective of Class AA waters is to remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alternation of water quality from any human-caused source or actions. The coastal waters beyond the MLCD are considered Class A marine waters, which are to be protected for recreational purposes and aesthetic enjoyment. Other uses are permitted as long as they are compatible with protection and propagation of marine biota and recreation."
The samples taken represent a single monitoring event. It was frankly a pathetic attempt to collect data. It is not enough data. There are numerous studies of fish, coral and other invertebrates at Shark's Cove MLCD done by various researchers at UH and beyond. Why were none of those investigated to give an accurate picture of the biodiversity and populations present in the area? The one article by Friedlander is old and is only one article.

"3-31 The rural center is in keeping with the North Shore SCP. The project will occupy the area designated in the North Shore SCP for a rural community commercial retail center and is consistent with the policy of "infill." The development plan is aligned with the goals of the North Shore SCP related to desired density, with a total floor area using only 25 percent of that allowed by the existing zoning ordinance."
Given its proximity to the Shark's Cove MLCD and the lack of space for parking, the proposed development is still too big.

"The closest medical center with 24-hour availability is the emergency room of Kahuku Medical Center, located 9.1 miles north east of the project site." and "Kahuku Public Library (13.7 miles north)."
The hospital is actually 12.6 miles away.

3-35 The rural center is not anticipated to pose adverse impacts to nearby State parks or City and County of Honolulu parks.

"Nearly all of the subject property has been cleared and developed, and the vast majority of plants present there are now landscape plantings."
There is quite a lot of hoale koa.
-They should agree to 100 native planting from now on.
-They forgot to mention illegally developed.
Regarding comments from agencies and individuals dated May 2017:
p.227 DOH Indoor Radiological Division - What about the demolition of current structures? Have they been tested for asbestos.

p.236 DNLR Engineering – I hope that the flood hazards for the area have been properly checked.

p.245 OEQC questioned the use of impervious parking near shoreline. In this document the impervious parking has been moved behind the main buildings but the result would still be the same in an intense precipitation event. The OEQC also had concerns about traffic. Traffic issues need to be reanalyzed and MORE relevant models utilized.
I do not see any resolution to the increase in traffic. 1,322 net new trips is a lot of trips.

p. 238 DLNR Conservation and Coastal Lands made no comment because the subject property is not in a conservation district. Shame on them did anyone look at a map?

p. 240 DLNR Wildlife had concerns about bats and seabirds. Any lights visible from the ocean will affect seabirds, turtles, fish, corals and other invertebrates.

250 Parks and Recreation were concerned that there was not enough parking planned.
I do not see that resolved at all.

255 Transportation were concerned about ADA compliance amongst other things. The buildings need to be ADA compliant too. The document talks about the sidewalk and some other path in the green area.

275 NSNB Kathleen Pahinui said that the North Shore Neighborhood Board voted 9-0-0 against the proposed development. She said it was attached with her letter but it was not printed in the EIS document.

Resources: The 2008 Friedlander study is relatively old already. There are site-specific studies that should have been used as resources.

Flora and fauna:
"All but perhaps 5% or less of the project area is developed as parking and numerous small shops (each of these areas landscaped to a lesser or greater degree)."
Most of this development was done illegally.

"Our survey revealed no federal jurisdictional waters (streams or wetlands) on the subject property. No federal Critical Habitat exists for any species on or adjacent to the project area. Thus, modification of habitats on all or any part of the site will not result in an impact to federally designated Critical Habitat. There is no equivalent statute under state law."
Please have your experts review:
http://dlnr.hawaii.gov/dar/marine-managed-areas/hawaii-marine-life-conservation-districts/oahu-pupukea/

O'AHU – PŪPŪKEA HAR 13-34 Established 1983
Prohibited activities: To fish for, take or injure any marine life (including eggs), or possess in the water any device that may be used for the taking of marine life, except as indicated in permitted activities above. To take or alter any sand, coral or other geological feature or specimen, or possess in the water any device that may be used for the taking or altering of a geological feature or specimen. To snag any akule while fishing from the shoreline of Waimea Bay according to "permitted" activities above.

Water
"Present use has averaged about 2500 gallons per day (GPD). Based on BWS design guidelines of 3000 GPD/acre, post development water use on the 2.72 acres of the Hanapohaku parcels may average about 8160 GPD. BWS has indicated that its system can accommodate this increase in use (Group 70, 2017). Water supply from BWS for Foodland is supplied by a 1½-inch meter. Its use has averaged about 2200 GPD. This use may increase by 15 to 20 percent to irrigate the proposed new landscaping at the makai end of its parking lot."

The combined 27,000 square feet of bed area to be installed would provide 100 percent back up capacity

Enviniti report and repeated in the Group 70 Preliminary Engineering Report is 10,533 GPD, about 30 percent greater than the 8160 GPD of projected water use. How is this disparity reconciled?

p. 382pdf

"irrigation will be about 2000 GPD per acres on 0.12 acre of grass and 1200 GPD per acre on 0.50 acres of shrubs and trees"
That's a lot of water. It does rain quite a bit here too

"A draft of the second update of the WRPP is expected to be out for public review and comment in late 2017. For the Kawailoa Aquifer, the recommendation is to reduce the aquifer's sustainable yield from 29 to 22 MGD based primarily on the recharge calculation in Engott et al, 2015, considered to be the most detailed and accurate calculation available, plus an allowance of "spillover" from the upgradient Wahiawa high level aquifer. The recommended reduction has not yet been adopted."
The final recommendation needs to be considered.

p. 389 pdf details a lot of very important information that has yet to be determined.
p. 403 Old pictures again. Please update photos.

Traffic
Can you imagine trying to come out onto Kam and turn towards Haleiwa? It would be better going through Foodland and try to exiting onto Pupukea Road. What will be the signage patterns if the two lots are coordinated and adjoined?

The document says there are 126 parking spaces but actually with four food trucks plus 5 spaces per truck, that leaves only 106 Take away 6 more for 3 ADA spots and you only have 100. That means, according to the applicant's own calculations, that there will be enough parking for the employees and a few of their family and friends.

The applicant will need a turn-in area for the bus stop. The applicant will likely want the bus stop in front of Foodland. This will impact the current landscaping in front of Foodland. There is quite a slope there too. Will likely need retaining walls, steps, ADA access. The bus will have a very difficult time getting out of that stop if it the entrance and exit to the proposed development is right in front of it. Please provide details. Will this require a NEW EIS process?

Parking control and validation. Paid Parking? Please provide details.

"During peak winter surf season and the active summer period on the North Shore, intermittent congestion is expected to continue to occur with or without the rural center."
Please provide details. Show the traffic flow.

Please Revise DRAFT EIS and resubmit to community after you work out parking lot coordination between Honopohaku and Foodland lots including the additional complexity of bidirectional flow interference of food supply trucks on Pupukea road servicing the Foodland rear entry and how complexities in traffic flow will exacerbate the allowable amount of vehicles per hour to be distributed between the proposed center and existing traffic patterns of Foodland/stoplight/Pupukea road intersection?

Air quality
There will be more cars idling. Cars will be trying to get out of the proposed parking lot. There may be issues trying to get in too.
Trying to turn in coming from the Kahuku side could be difficult. Trying to get out going towards Haleiwa – next to impossible.

Here are some cursory parking estimates
86 people employed there at least 50 cars
Each food truck has 5 more cars 40 (not sure where all the people eating at the food trucks are going to sit.)
The restaurant - How many tables? 20? One car per table 20
Shop 5
Pharmacy 5
Bank 5
Professionals 5
Yoga/fitness – class time 15
Childcare – drop off and pick time 15-20
That's 160 or so for 100 spots.

Noise Nighttime noise what time will they be closing up at?
10pm? Impact on turtles, fish and invertebrates across the road?
Lights too.

Utilities:
Current electrical demand for the existing buildings and mobile food establishments is estimated at 4,500 kWh per month.
The trucks are not supposed to hooked up to the electrical grid.

Waste Water:
infrequent special events with larger gatherings, the increased wastewater load would be supported with portable toilets and hand-washing stations. Mobile food trucks may be among the tenant mix periodically using the central gathering space. While in practice the number may be much lower, the wastewater and

parking capacity are sized to support up to eight mobile food trucks, their patrons, and employees

Runoff calculations seem a little whacky. I would say that we get 1 inch rainfall on consecutive days quite often. We had 6 inches in 24 hours in Spring 2017. There is no accounting/data for previous saturation. This is an important ommission.

Electrical Power:
"Electrical demand for the restaurant and rural center is estimated at 4,000 kilowatt hours per day."
How can it be the same as it is currently?

Solid Waste:
The document projects the generation of 296 to 345 pounds of solid waste per day. Recycling will apparently be promoted but currently most recyclables end up burned at H Power. Thank you for saying that the food containers would be non-polystyrene. They need to be compostable. The calculations in the document do not account for increased litter and it getting into the storm drains and consequently the ocean.

Apparently pictures from January 2017, are shown in Figures 3-8 and 3-9A-F. They do not look like a Jan 2017 pictures. Please address.

"This area of the North Shore is not slated for growth, according to the North Shore SCP. With little exception, other lands on the North Shore falls within the State urban or agricultural land use districts, and zoning allows residential or country uses. There are no currently proposed subdivisions, commercial or resort developments for the region. According to the Transportation Impact Analysis Report prepared for this EIS, no transportation infrastructure improvements are planned for the area around the rural center (Appendix F).The discussion of cumulative impacts in the following section identify relevant resource uses occurring in the project area to which the project may contribute to impacts."
Did someone copy and paste this into the wrong EIS? There are quite a few significant pieces of land zoned for agriculture being "repurposed" for huge houses around here. The real estate company that operates on the subject property is involved in many of them. The Turtle Bay Resort also has approval for hundreds of new units (hotel rooms and resort residential houses/condos). HRI has shifting plans to expand the number of university students at Bingham Young and build between 300 and close to 1,000 housing units and retail outlets. Further away but significant, Dillingham Ranch is planning on building hundreds of houses. Please address this disparity and how the modeling elicited this conclusion it is flawed?

Finally please address these main takeaway points:

1) No matter what kind of waste water treatment system is employed, given the proximity of the Shark's Cove Marine Life Conservation District - We can not afford to take any chances. [Is there enough data to justify this risky near shore, high volume application?]

2) The "studies" carried out in the MLCD were pathetically inadequate and none of the previously published studies of the area were reviewed or included in the references. Please revise the DRAFT EIS and resubmit for another comment period.

3) Run off and leaching of cleaning chemicals, engine oil and other substances were not addressed.
Please revise the DRAFT EIS and resubmit for another comment period.

4) The number of food trucks is vague to say the least. This results in an inability to accurately forecast traffic and a parking apocalypse.
Please revise the DRAFT EIS and resubmit for another comment period.

5) The rerouting of the entrances to Foodland and the "Center" into one, will result in perhaps being able to get into the development but will make it EXTREMELY difficult to park and then get out of the place. Especially aggravating will be trying to get in from Kahuku side and out going in the direction of Haleiwa.

6) Last and certainly not least is the fact that the landowners of this property and the people currently seeking to build their "Center" have operated illegally for years. They have flagrantly violated state laws. It is my understanding that they have accrued $150,000 in fines. What possessed the DPP to issue them a SMA permit defies common sense without satisfying the fines and remediation the existing violations?
The situation raises serious questions about the decision makers involved at the DPP.

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Angela Huntemer
57-068 Eleku Kuilima Place #136
Kahuku, Hawai'i 96731
Email: ahuntemer@aol.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Huntemer:

Thank you for your comment letter dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project.

The following responses are offered to your comments:

Comment: *My questions and comments cover three main topics of concern: Ecological impacts:*

No matter what kind of wastewater treatment system is employed, given the proximity of the Shark's Cove Marine Life Conservation District, this ecological gem should not be subjected to any more risk of degradation than it already is. The "studies" carried out in the MLCD were pathetically inadequate and none of the previously published studies of the area were reviewed or included in the references. Run off and leaching of cleaning chemicals, engine oil and other substances were not addressed. Actual usage of toilets is not accurate. Estimates of rainfall events are not accurate. The list is long on risks and questions.

Response: The purpose of the marine survey was to identify nearshore water quality and to consider potential surface runoff and groundwater influence on marine water quality, for which a comprehensive review of published studies was not relevant. EIS *Section 3.6 Surface Water and Drainage* is devoted to storm water runoff – and specifically identifies: "Pollutants of concern include sediment, nutrients, trash, pathogens, pesticides, oil, grease, hazardous and toxic waste, metals and organic compounds." *Section 3.6.2* of the EIS describes the controls to be installed as required by the City and County of Honolulu's recently enacted Water Quality Rules. The low-impact development (LID) controls (shown in EIS *Figure 3-5*) will retain as much of the storm water on-site by infiltration, evapotranspiration or harvest/reuse as feasible using appropriate best management practices, and biofilter the remaining portion that is not retained on-site to the extent practicable.

The comment relating to "actual usage of toilets" is unclear. EIS *Section 3.16.2* explains that the wastewater system will have capacity to accommodate patrons and employees of the retail, office, and restaurant operations, as well as transient demand of employees and customers of mobile food establishments.

Comment: *Impacts on quality of life of North Shore residents: The number of food trucks is vague, to say the least. This results in an inability to accurately forecast traffic and based on projections in the document -a parking apocalypse.*

Response: The Final EIS clarifies that up to six food trucks can be accommodated (*Section 2.4.1* and *Figure 2-6*). The Transportation Impact Analysis Report (TIAR) provides traffic projections based on the uses described for the site. The potential delay for a vehicle at the Kamehameha Highway and Pupukea Road intersection during Saturday peak hour traffic is projected to be an additional 1.7 seconds over the near-term baseline conditions (*Table 3-4* of the EIS).

Comment: *The rerouting of the entrances to Foodland and the "Center" into one, will result in perhaps being able to get into the development but will make it extremely difficult to park and then get out of the place. Especially aggravating will be trying to get in from Kahuku side and out going in the direction of Haleiwa.*

Response: The EIS has been clarified to note that the two existing driveways to the Foodland grocery store, adjacent to the project site, are closer in proximity to the Pūpūkea Road intersection than allowed under current DOT standards and traffic engineering practice (*Section 3.13.1*). Vehicle circulation is planned to accommodate both the Foodland and the new uses at the rural center, with a centralized access and internal driveways to flow efficiently.

Comment: *Past behavior as a predictor future behavior: Last and certainly not least is the fact that the landowners of this property and the people currently seeking to build their "Center" have operated illegally for years. They have flagrantly violated state laws. It is my understanding that they have accrued over $100,000 in fines. The DPP subsequently issuing them City's approval of SMA/2017-21 permit defies common sense.*

The situation raises serious questions about the decision makers involved at the DPP.

Response: On February 9, 2018, Hanapohaku received notice of the clearance from the City DPP for the last outstanding violation on the land. Hanapohaku remains committed to following all procedures set out by DPP in ensuring that every step forward is in full compliance.

Comment: *The pictures used in DEIS are old. They do not show the illegal grubbing, grading and building on the property. Please show current status and identify all of the work done with and without existing permits.*

Response: Improvements are being made in compliance with SMA Minor Permit 2017/SMA-21, which was issued in August 2017. Changes continue to the property as grading and building permits are issued for the permit-specific improvements. The photos provide sufficient information to portray the project site in combination with the descriptions of existing conditions and proposed conditions provided in the EIS.

Comment: *Proposed Action Page 1-9 - Page "committed to pursuing Hawaii based businesses" "urgent medical care services, credit union, professional services, surf shop and action sports,*

fitness studio, child care, health food market/deli, mobile food establishments and restaurant." #1 There are already established alternatives to putting new entities here. #2 Even if one could appreciate that it would be a "nice idea" one might not necessarily want such establishments in this neighborhood. #3 Being committed to pursuing Hawaii based businesses sounds good but there is no guarantee that those are the business that would be on the property and no guarantee that they would be Hawaii-based.

Response: We acknowledge the comments (numbered #1, 2 and 3) above.

Comment: *"long drives to urban centers on O'ahu"? 1-14 It's OK. We are used to that. We can go to Haleiwa and/or Kahuku.*

Response: We acknowledge the comment.

Comment: *1-10 detention storage system "the rural center's drainage system will have a significant environmental benefit in comparison to the present use ". This makes NO logical sense since the present design of Legal system was used in Over capacity and the proposed and installed system was done without permit and cannot be accurately quantified in relationship to standards which do not address the sliding scale usage proposed.*

Response: The comment is unclear as to what "legal" system is references as being "Over capacity." Please see EIS *Section 3.6 Surface Water and Drainage* for the existing conditions, including regulatory requirements, and the specifications of the proposed system. The future conditions – which anticipate improved storm water runoff quality and reduced quantity – are described in *Section 3.6.2*.

Comment: *1.4.2 Adverse Impacts: "Disposal of treated wastewater effluent will slightly increase the groundwater concentrations of nitrogen and phosphorus. The impact of the increased nutrients in groundwater will not be realized until the groundwater reaches the marine environment. The additional 4.3 percent nitrogen and additional 7 percent phosphorus would likely be undetectable in the marine environment at distances from the shoreline where marine communities occur (Refer to Section 3.7.1 Marine Environment: Probable Impacts and Mitigation Measures)."*

How does the consultant, Dr. Dollar (and the author of Draft EIS), justify his inability to identify the obvious dismissal of SIGNIFICANT issues with the elevation of these components in the marine environment? The term undetectable is ambiguous and what metric will be used to determine a "true" baseline prior to the permanent increase of the introduced components into the near shore water environment.

Even if this were true that the additional nitrogen and phosphorus would be undetectable in the marine environment at distances from the shoreline where marine communities occur - #1 your EIS lacks discussion of other contaminants, for example engine oil, cleaning products and other chemicals which will likely percolate through the soil and or runoff to the ocean. #2 What are you talking about? Marine communities occur at the shoreline.

Response: The marine water quality and biology assessment prepared for the EIS followed accepted scientific sampling and analytical procedures for evaluating nearshore

environmental conditions, and predictive nutrient concentration projections in conjunction with the inputs determined in the surface water and groundwater quality assessment. The typical urban runoff contaminants you describe are managed through long term on-site low impact development features and best management practices (see previous response related to storm water runoff).

Comment: *"An additional 1,322 net new daily vehicle trips are projected from the development of the rural center. During midday and evening peak hours, a total of 65 net new trips (29 inbound to the center and 36 outbound from the center) are anticipated; Saturday midday peak hours total 98 (51 inbound and 47 outbound). The impact of the increased traffic related to the project at the intersection of Kamehameha Highway and Pūpūkea Road would continue at level of service (LOS) A during both peak hours of traffic, with LOS B during Saturday peak hour traffic. The potential delay for a vehicle under LOS B conditions would be an additional 1.7 seconds over the near-term baseline conditions. DOT and the City's Traffic Review Branch define a significant intersection impact when operation of an intersection changes from LOS D or better to LOS E or F. The rural center construction will not significantly impact traffic in the region." Even if your figures are correct that is 1,322 net new daily trips, that is 1,322 trips too many. Your projected delay time does not come close to the gridlock that would ensue were this misguided project actually be built. Based on the lack of parking space for the proposed development compounded by the rerouting of the entrance and exit, it would be a frustrating experience for people just trying to get in and out of Foodland.*

Response: The 1,300-additional daily "vehicle trips" do not represent the number of additional vehicles on the road, but rather the number of vehicles turning into and exiting the site. Thirty percent of those trips (396) are assumed to be cars already on the road. Therefore, net new vehicle trips because of the project is projected to be 926 daily. The Final EIS has been updated to show the correct number of net daily trips.

The trips are distributed throughout the day, with the peak hour ("rush hour") and typical mid-day hour projected at an additional 65 additional turns during those hours (29 vehicles turning in, and 36 exiting the site). Saturday trips are projected to be slightly higher with 98 midday trips (51 turning in, and 47 exiting the site). So, the actual number of vehicles would be approximately half the net new vehicle trips.

Comment: *If parking is behind the buildings – how does that cohere with the parking being in front of Foodland? Does the consultant/author of the DEIS understand the contradiction of off-street traffic flow regarding this incongruity? Several experts have voiced confusion that this asymmetrical design is being proposed as it is likely going to be a gridlock situation in the parking lot. This parking lot integration needs a Supplemental Draft study to understand the interconnection of these parking areas and the future gridlock and synergistic complexities of traffic flow at this critical area on Kam. Hwy.*

Response: No supplemental draft study is required. The transportation analysis report (TIAR) conducted for the project used a correct technical methodology to properly assess the turning movements with projected traffic for the site taking into consideration current and future traffic related to Foodland. The guidelines of the North Shore Sustainable Communities Plan (2011) for the rural community commercial center state that parking should be located behind buildings or other methods used to visually screen parking from the street.

Comment: *1-13 "The Sunset Beach/Pūpūkea community has expressed that some existing commercial operations at the property are less desirable, such as the disorganized commercial activities, multiple tents and seating areas, nighttime lighting and noise, unauthorized parking along the highway, haphazard vehicle ingress/egress, and non-focused pedestrian access. With the City's approval of SMA/2017-21 there is authorization to continue with a conditional use of the property, with very specific actions required of the owners to manage activities to minimize effects to neighbors, the community and the environment. Importantly, it remains the stated purpose of the owners to diligently plan towards the long-term objective of creating the Rural Community Commercial Center, as they seek to achieve the common objectives of the community and government planning policy for future use of this property."*

Why would the owners suddenly diligently plan towards the long-term objective of creating the Rural Community Commercial Center, as they seek to achieve the common objectives of the community and government planning policy for future use of this property? What changed? Did we miss something? They have acted in flagrant violation of DDP regulations, Department of Health regulations amongst others for years. They do not appear to have any intention of paying the City and County fines that they have accrued.

The owners might have thought to act on these intentions earlier if they had been of any real importance to them. They have not only shown themselves to be out to rake in as much cash as possible without regard for the law, they have shown themselves to be very poorly organized. This combination does not bode well for an expanded operation so close to one of the most diverse and fragile marine ecosystems and for the ability of residents to navigate the single two-lane highway that is our lifeline and environs.

"2-3 The project site currently houses a small surfboard retail and rental establishment (North Shore Surf Shop) and a beachwear/swimwear store (Seamaids), a real estate office, a commissary (servicing one food truck) with office, and five mobile food establishments (food trucks). Supporting uses currently on the property include food truck seating areas, portable toilets, portable hand-washing station, parking areas, trash dumpsters, fences, water lines, electrical lines and landscape. Drainage controls have been added to manage storm water runoff. The commercial operations on the property are entitled under Special Management Area (SMA) Use Permits, including an SMA – Minor in 2017 (2017/SMA-21). Hanapohaku is to comply with specific terms and conditions to clear past use violations. Current compliance actions include settlement of fines and obtaining site development and building permits. The existing uses will be completely removed for development for the Rural Community Commercial Center."

Note settlement of fines as opposed to payment of fines. Does this imply that developer will attempt to evade payment of the existing accrued fines?

Response: The questions asked in the preceding paragraphs relate to the approval of plans under 2017/SMA-21 Minor Permit, and prior violations and fines. All violations have been cleared and all but one fine had been settled as of this letter response. Hanapohaku will pay the outstanding fine once it receives the settlement letter from the City. There has been no, nor will there be any, attempt to evade payment of fines. The owners have chosen to develop the rural center planned for the property as guided by the North Shore Sustainable Communities Plan.

Comment: *"Vehicle access can periodically be blocked from the hardscaped area adjacent to the central green to allow for periodic pedestrian-friendly community gatherings and cultural events, such as art shows, farmers' markets, mobile food trucks, and music and dance performances." Periodically blocked means even less parking spaces.*

Page 2-17 States that the Rural Center may include: "• Urgent Care – small scale medical service clinic for non-emergency needs" Kahuku Medical Hospital and outpatient center, Kaiser Permanente medical center, Haleiwa medical center and Wahiawa General have us pretty well covered as long as we can get there ie. The road is not blocked. "• Pharmacy & Health Products – small scale pharmacy, health products, organic products" Foodland, Longs Haleiwa and Foodland Laie, Longs Hauula and Celestial Natural Foods do a pretty good job of providing us with above named products and services. "• Bank – small scale bank branch, financial services" There is a BOH ATM in Foodland, there are banks in Haleiwa and Kahuku. "• Business Center – copy services, business supply, package shipping/delivery, private post office" Why? People who work from home here have figured out how to get these services and or do them themselves. People have scanners and printers etc. "• Professional Services – dentistry, chiropractic, psychiatry, legal, accounting, etc. • Real Estate Office – continue/expand an existing, on-site business • Surf Shop, Beach Apparel & Action Sports Retail – continue/expand existing, on-site business • Other Retail - art gallery, cultural arts, music and jewelry" Waimea Valley, Turtle Bay and Haleiwa town all provide opportunities for "other"retail businesses. "• Yoga & Fitness Studio – multipurpose studio, with potential for dance, hula, music" These activities are offered at Turtle Bay Resort, Sunset Beach Rec Center, Waimea Valley, Haleiwa town and elsewhere. "• Child Care Center - day care center for families" There is not enough parking or outside space (protected) for this. "• Community Organization – office space for local community/environmental organization" Really like who? Would the owners offer free office space to Malama Pupukea Waimea? "• Quick Service Food – mobile food trucks offering different food types, affordable pricing"

Thanks but we have loads of options up here in that department. Brick and mortar restaurants that following the laws pertaining to their activities have a hard time competing with so many food trucks. Safety and sanitation in these places is not the best. "• Health Food Market/Deli – dry goods and grab-and-go food" Celestial Foods is a locally owned business that has been providing this for decades. The Beet Box and Killer Tacos, Sprout, Il Gelato, Kahuku Farms, Fiji Curry House among others provide pretty healthy food fast. They are locally owned. "• Restaurant – Full service restaurant with bar, with both indoor and outdoor lanai seating"

Turtle Bay, Haleiwa and Waimea Bay all have great options for this type of establishment. I am concerned about the lighting of this business. Particularly the lanai lighting projected to be so near the MLCD. "The permeable paving material on the lower parking area includes a design to tie the landscaped areas to the buildings (Figure 2-3)." Actually this looks to be the parking lot for 4 of the food trucks. The other three are on the mauka side of the building.

The projected use of water is 8,160 gallons per day in when the current use 2,200 gallons per day. Not sure how they plan to run the proposed operation on so little water. It is projected that there will be 6,920 gpd out. OK, so there will be some irrigation of landscaping. Which, by the way, will not survive the trampling of people. Checkout Foodland next door. The current owner uses vast swathes of plastic grass to cover the ground because apart from a hard surface it is all that can withstand the foot traffic. Here is the kicker -The current water input is 2,200 gpd and wastewater output is 400 gpd. Where are the other 1,800 gallons per day going?

Response: The preceding comments contain questions about the need for office use and potential space offering to not-for-profit community organizations, which is reflective of input the owners have received in discussions with local residents and an on-line survey of the community. Water use and wastewater generation are based on agency standards and guidance. The technical factors will be reviewed and approved by the State and City agencies with these responsibilities.

Comment: *With respect to the section titled Natural Disasters please respond to the following comments. Hurricanes are increasing in number and strength. With them will come dangerous storm surges. Kamehameha Highway will be washed out in various places. Although the document states that the property is not with in the Tsunami Evacuation Zone it is within the Extreme Tsunami Zone. Kamehameha Highway is largely an arbitrary line that delineated the tsunami zone. In the event of an earthquake Kamehameha Highway would be impacted and there would be possibility of a tsunami. Regarding flooding, there is projected to be an increase in intense precipitation events and it is likely that water would overwhelm the precautions proposed. We had 6 inches of rain in 24 hours last spring in this area. Increased coastal erosion is projected as a result of sea level rise. Again, Kamehameha Highway will be directly impacted by this along with many homes. The short term and long term impacts of these disasters on the community and businesses remain largely unknown. Also: Not mentioned in the section on Natural Disasters if the fact that there are lava tubes and that sink holes occur in this area.*

Response: The design of the project must meet the standards set by local ordinances and building codes. Natural disaster potential is factored into the requirements for seismic building design and site drainage design.

Comment: *Flora and fauna- Is there a caretaker? Yes, apparently someone lives in the house that is the commissary also vagrants are allowed to stay in containers in the back of the property. This would appear to be illegal.*

Response: There is a caretaker for the property who cares for the overall grounds of the existing commercial property, landscape and general upkeep. The rural center will not have a live-in caretaker, rather maintenance and security personnel operating on a daily schedule.

Comment: *Lights need to be directed down and away from road/ ocean. The section on Groundwater Conditions Beneath the Project Site reveals that ocean water underlies the site at depth. This is troubling. Contaminants will find their way to the ocean and apart from phosophorus and nitrogen no other substance was mentioned. There is always the possibility that any waste water treatment system will be overwhelmed or have a spill no matter how good. We have had spills of sewage here at Turtle Bay and we have a fully fledged wastewater treatment plant reclaiming sewage back to R2 water for irrigation. "Somewhat higher nitrogen levels in the down gradient well (B-7) may reflect input from present use of the site". This is disturbing.*

Federal, State and County regulations require that receiving waters be protected from pollutants associated with land disturbance, surface hardening and land use activities using implementation and maintenance of BMPs. Pollutants of concern include sediment, nutrients,

trash, pathogens, pesticides, oil, grease, hazardous and toxic waste, metals and organic compounds. Yes, they only talked about nitrogen and phosphorus… These issues need to be addressed in detail and if not adequate than the response from developer should require an additional round of revision until these issues are adequately considered with appropriate methods of remediation offered.

Regarding the proposed "subsurface detention chambers" they sound potentially fragile. Not only will the chambers be difficult to shore up, there will be buildings etc. on them and there are numerous underground caves and lava tubes in the area. "Overall, the rural center's drainage system will have a significant environmental benefit in comparison the present use.." The present use has been not abiding by regulations and laws for years. Has the consultant obtained geotechnical and hydrological review by a licensed engineer? If so, where are the accurate bore samples of the site that are necessary to substantiate the poorly stated assumptions?

Response: The project will comply with the City requirements for lighting, and direct lighting downward to avoid effects to seabirds. The wastewater system will be designed and operated according to the State Department of Health (DOH) requirements. The drainage system will be designed and operated in accordance with City drainage standards. Licensed geotechnical and civil engineers have been engaged by the owners for the studies and project plans.

Comment: *Are the two large parking spaces for tour buses or deliveries or both?*

Response: No tour bus parking areas are provided. Delivery loading spaces are provided as required under the City Land Use Ordinance (LUO).

Comment: *"The pattern of increasing salinity and decreasing nutrient concentrations with distance from shore result from concentrated input of groundwater to the ocean at or near the shoreline throughout the region across Kamehameha Highway from the proposed site."*

This clearly means that if the groundwater is contaminated or waste water taps into the flow, it goes straight into the ocean right there at Shark's Cove.

"The open coastal waters offshore of Pūpūkea Beach Park and in the Pūpūkea MLCD are categorized as Class AA under State Water Quality Standards under in HAR §11-54-6(b). The objective of Class AA waters is to remain in their natural pristine state as nearly as possible with an absolute minimum of pollution or alternation of water quality from any human-caused source or actions. The coastal waters beyond the MLCD are considered Class A marine waters, which are to be protected for recreational purposes and aesthetic enjoyment. Other uses are permitted as long as they are compatible with protection and propagation of marine biota and recreation."

The samples taken represent a single monitoring event. It was frankly a pathetic attempt to collect data. It is not enough data. There are numerous studies of fish, coral and other invertebrates at Shark's Cove MLCD done by various researchers at UH and beyond. Why were none of those investigated to give an accurate picture of the biodiversity and populations present in the area? The one article by Friedlander is old and is only one article.

Response: The marine biota investigation findings and analysis are reported in EIS Appendix C. The findings published by Dr. Dollar are very similar to the reported information published by Coral Reef Assessment and Monitoring Program conducted by researchers Dr. Paul Jokiel and colleagues at the Hawaii Institute of Marine Biology. http://cramp.wcc.hawaii.edu/LT_Montoring_files/lt_study_sites_Oahu_Pūpūkea.htm.

The conclusions of the assessment indicate that based on the limited material inputs to the nearshore ocean from the project, the inputs would not be of a detectable magnitude. Thus, if there are no changes to water chemistry, there will be no changes to the marine biotic communities.

Comment: *"3-31 The rural center is in keeping with the North Shore SCP. The project will occupy the area designated in the North Shore SCP for a rural community commercial retail center and is consistent with the policy of "infill." The development plan is aligned with the goals of the North Shore SCP related to desired density, with a total floor area using only 25 percent of that allowed by the existing zoning ordinance." Given its proximity to the Shark's Cove MLCD and the lack of space for parking, the proposed development is still too big.*

Response: The rural center as planned complies with the guidelines established by this community, DPP and the Honolulu City Council for the Rural Community Commercial Center.

Comment: *"The closest medical center with 24-hour availability is the emergency room of Kahuku Medical Center, located 9.1 miles north east of the project site." and "Kahuku Public Library (13.7 miles north)." The hospital is actually 12.6 miles away.*

Response: The EIS has been reworded to acknowledge that the distances to the Kahuku Hospital and Wahiawa General Hospital from the Foodland site are approximate at 9.1 miles 14.7 miles, respectively.

Comment: *3-35 The rural center is not anticipated to pose adverse impacts to nearby State parks or City and County of Honolulu parks. "Nearly all of the subject property has been cleared and developed, and the vast majority of plants present there are now landscape plantings." There is quite a lot of hoale koa. -They should agree to 100 native planting from now on. -They forgot to mention illegally developed.*

Response: Thank you for the recommendation to include native plants in the landscape, which is the plan for the rural center.

Comment: *Regarding comments from agencies and individuals dated May 2017: p.227 DOH Indoor Radiological Division - What about the demolition of current structures? Have they been tested for asbestos.*

Response: Due to the age of the structures, the demolition of the existing structures will require the proper consideration of inspection and, if warranted, testing for asbestos.

Comment: *p.236 DNLR Engineering – I hope that the flood hazards for the area have been properly checked. p.245 OEQC questioned the use of impervious parking near shoreline. In this document the impervious parking has been moved behind the main buildings but the result would still be the same in an intense precipitation event.*

Response: The drainage system will be designed and operated in conformance with City Drainage standards.

Comment: *The OEQC also had concerns about traffic. Traffic issues need to be reanalyzed and more relevant models utilized. I do not see any resolution to the increase in traffic. 1,322 net new trips is a lot of trips.*

Response: The 1,300-additional daily "vehicle trips" do not represent the number of additional vehicles on the road, but rather the number of vehicles turning into and exiting the site. Thirty percent of those trips (396) are assumed to be cars already on the road. Therefore, net new vehicle trips because of the project is projected to be 926 daily. The Final EIS has been updated to show the correct number of net daily trips.

Comment: *p. 238 DLNR Conservation and Coastal Lands made no comment because the subject property is not in a conservation district. Shame on them did anyone look at a map?*

p. 240 DLNR Wildlife had concerns about bats and seabirds. Any lights visible from the ocean will affect seabirds, turtles, fish, corals and other invertebrates. p. 250 Parks and Recreation were concerned that there was not enough parking planned. I do not see that resolved at all.

Response: The project is within the State's Urban District; there are no Conservation District lands within the project area. The DLNR comments to the EIS Preparation Notice, published on the pdf page 240 of the Draft EIS, include standard language applicable to all projects on O'ahu. *Section 3.4 Flora and Fauna* documents the precautions the project will take to minimize impacts to bats and seabirds. The comment letter from the City Parks Department on the Draft EIS, which is included in Chapter 6 of the Final EIS, states that the project will have no effect on parks facilities due to adequate parking provisions for the rural community commercial center.

Comment: *255 Transportation were concerned about ADA compliance amongst other things. The buildings need to be ADA compliant too. The document talks about the sidewalk and some other path in the green area.*

Response: The project will be designed to meet requirements for accessibility.

Comment: *275 NSNB Kathleen Pahinui said that the North Shore Neighborhood Board voted 9-0-0 against the proposed development. She said it was attached with her letter but it was not printed in the EIS document.*

Response: The attachment to the North Shore Neighborhood Board (NSNB) letter on the EIS Preparation Notice is included in the Final EIS. Additionally, the NSNB submitted its November 2017 meeting minutes as its comments to the Draft EIS; the Final EIS contains responses to each of the comments.

Comment: *Resources: The 2008 Friedlander study is relatively old already. There are site-specific studies that should have been used as resources. Flora and fauna: "All but perhaps 5% or less of the project area is developed as parking and numerous small shops (each of these areas landscaped to a lesser or greater degree)." Most of this development was done illegally.*

"Our survey revealed no federal jurisdictional waters (streams or wetlands) on the subject property. No federal Critical Habitat exists for any species on or adjacent to the project area. Thus, modification of habitats on all or any part of the site will not result in an impact to federally designated Critical Habitat. There is no equivalent statute under state law."

Please have your experts review:http://dlnr.hawaii.gov/dar/marine-managed-areas/hawaii-marine-life- conservation-districts/oahu-pupukea/

O'AHU – PŪPŪKEA HAR 13-34 Established 1983 Prohibited activities: To fish for, take or injure any marine life (including eggs), or possess in the water any device that may be used for the taking of marine life, except as indicated in permitted activities above. To take or alter any sand, coral or other geological feature or specimen, or possess in the water any device that may be used for the taking or altering of a geological feature or specimen. To snag any akule while fishing from the shoreline of Waimea Bay according to "permitted" activities above.

Response: Thank you for providing a reference to the MLCD areas, and HAR 13-34 prohibited activities for those visiting the MLCD. The EIS contains relevant language from HAR 13-34 under "Marine Managed Areas" in *Section 3.7.1*.

Comment: *Water "Present use has averaged about 2500 gallons per day (GPD). Based on BWS design guidelines of 3000 GPD/acre, post development water use on the 2.72 acres of the Hanapohaku parcels may average about 8160 GPD. BWS has indicated that its system can accommodate this increase in use (Group 70, 2017). Water supply from BWS for Foodland is supplied by a 1½-inch meter. Its use has averaged about 2200 GPD. This use may increase by 15 to 20 percent to irrigate the proposed new landscaping at the makai end of its parking lot."*

Response: The engineering plans and design for water use at the rural center follow standards set by the BWS, and projected calculations of future demand for domestic consumption and irrigation.

Comment: *The combined 27,000 square feet of bed area to be installed would provide 100 percent back up capacity. Enviniti report and repeated in the Group 70 Preliminary Engineering Report is 10,533 GPD, about 30 percent greater than the 8160 GPD of projected water use. How is this disparity reconciled?*

Response: The calculation of design flows and disposal system sizing are based on conservative requirements of the State DOH standards. The higher numbers represent the design capacity requirement as provided in Hawai'i Administrative Rules §11-62 (Wastewater Systems), versus the anticipated water use and wastewater output. Technical specification of the system must be reviewed and approved by the Department of Health (*Section 3.16.2*).

Comment: *p. 382pdf "irrigation will be about 2000 GPD per acres on 0.12 acre of grass and 1200 GPD per acre on 0.50 acres of shrubs and trees" That's a lot of water. It does rain quite a bit here too.*

Response: Water demand calculations follow standards set by Board of Water Supply and irrigation demands are based on the water demand of the anticipated landscape elements.

Comment: *"A draft of the second update of the WRPP is expected to be out for public review and comment in late 2017. For the Kawailoa Aquifer, the recommendation is to reduce the aquifer's sustainable yield from 29 to 22 MGD based primarily on the recharge calculation in Engott et al, 2015, considered to be the most detailed and accurate calculation available, plus an allowance of "spillover" from the upgradient Wahiawa high level aquifer. The recommended reduction has not yet been adopted." The final recommendation needs to be considered.*

Response: Water supply for the project is managed by the Honolulu BWS. The information on the aquifer is current.

Comment: *p. 389 pdf details a lot of very important information that has yet to be determined. p. 403 Old pictures again. Please update photos.*

Response: Information and photographs provided in the appendices you cite are appropriate to the investigation and assessment conducted for this EIS.

Comment: *Traffic. Can you imagine trying to come out onto Kam and turn towards Haleiwa? It would be better going through Foodland and try to exiting onto Pupukea Road. What will be the signage patterns if the two lots are coordinated and adjoined?*

Response: The traffic pattern inside the rural center will be coordinated between the two properties. The new refuge lane/center turn lane on the restriped highway will help to facilitate traffic flow, consistent with recommendations from the State Dept. of Transportation.

Comment: *The document says there are 126 parking spaces but actually with four food trucks plus 5 spaces per truck, that leaves only 106 Take away 6 more for 3 ADA spots and you only have 100. That means, according to the applicant's own calculations, that there will be enough parking for the employees and a few of their family and friends.*

Response: The Final EIS presents the provision of 126 parking spaces at the rural center, with the required LUO parking spaces including accessible spaces and loading, and revised plans for up to 6 food trucks following the new ordinance for Haleiwa Special District.

Comment: *The applicant will need a turn-in area for the bus stop. The applicant will likely want the bus stop in front of Foodland. This will impact the current landscaping in front of Foodland. There is quite a slope there too. Will likely need retaining walls, steps, ADA access. The bus will have a very difficult time getting out of that stop if it the entrance and exit to the proposed development is right in front of it. Please provide details. Will this require a new EIS process? Parking control and validation. Paid Parking? Please provide details.*

Response: TheBUS stop relocation is being planned in coordination with the City Department of Transportation Services. The specific design factors raised in your comments will be addressed in the design process with the City. There is adequate space to properly locate the bus stop along the project frontage on Kamehameha highway, and the City is advising the development team to assure proper standards are met.

Comment: *"During peak winter surf season and the active summer period on the North Shore, intermittent congestion is expected to continue to occur with or without the rural center." Please provide details. Show the traffic flow.*

Response: Traffic flow is shown in diagrams provided in the Final EIS *Section 3.13* and *Appendix F* Transportation Impact Assessment Report, which includes all the substantial detail you've requested. This analysis has been reviewed by the State DOT and City agencies responsible for the transportation design review and approval.

Comment: *Please revise Draft EIS and resubmit to community after you work out parking lot coordination between Honopohaku and Foodland lots including the additional complexity of bidirectional flow interference of food supply trucks on Pupukea road servicing the Foodland rear entry and how complexities in traffic flow will exacerbate the allowable amount of vehicles per hour to be distributed between the proposed center and existing traffic patterns of Foodland/stoplight/Pupukea road intersection?*

Response: The provisions for internal circulation and driveway traffic in the redevelopment of the commercial properties at the rural center is presented in the Final EIS *Section 3.13* and *Appendix F*. This information is under review by the State DOT and City agencies responsible for the transportation design review and approval.

Comment: *Air quality. There will be more cars idling. Cars will be trying to get out of the proposed parking lot. There may be issues trying to get in too. Trying to turn in coming from the Kahuku side could be difficult. Trying to get out going towards Haleiwa – next to impossible. Here are some cursory parking estimates 86 people employed there at least 50 cars. Each food truck has 5 more cars 40 (not sure where all the people eating at the food trucks are going to sit.) The restaurant - How many tables? 20? One car per table 20 Shop 5 Pharmacy 5 Bank 5 Professionals 5 Yoga/fitness – class time 15 Childcare – drop off and pick time 15-20 That's 160 or so for 100 spots.*

Response: Access to the rural center by both pedestrians (including bicycles) and vehicles has been carefully planned to address your concerns. Parking meets the City LUO and provides for transient use of food truck patrons. Site design has taken all users into consideration. Pedestrian safety will be improved with the provision of a walkway along the Kamehameha Highway frontage.

Air quality is addressed in Final EIS *Section 3.14*. The traffic analysis is presented in the Final EIS *Section 3.13* and *Appendix F*. The estimate of 86 long-term jobs created by the project has been updated in the Final EIS to 80 long-term jobs. The number represents the total jobs created; it does not represent the number of employees on site at any one time. The number of parking spaces to be provided will meet the requirements under the LUO, Revised Ordinances of Honolulu, Chapter 21.

Comment: *Noise. Nighttime noise what time will they be closing up at? 10pm? Impact on turtles, fish and invertebrates across the road? Lights too.*

Response: Existing and future conditions for noise at the rural center has been addressed in Final EIS *Section 3.15* and *Appendix G*. The project is not anticipated to affect turtles, fish and invertebrates in nearshore waters 500 feet or more distant from the rural center boundary. Lighting is addressed in responses to earlier comments.

Comment: *Utilities: Current electrical demand for the existing buildings and mobile food establishments is estimated at 4,500 kWh per month. The trucks are not supposed to hooked up to the electrical grid.*

Response: The provision of outlets for electrical service to mobile food establishments is accounted in the future electrical demand, as allowed under the code and ordinance.

Comment: *Waste Water: infrequent special events with larger gatherings, the increased wastewater load would be supported with portable toilets and hand-washing stations. Mobile food trucks may be among the tenant mix periodically using the central gathering space. While in practice the number may be much lower, the wastewater and parking capacity are sized to support up to eight mobile food trucks, their patrons, and employees.*

Response: This statement is correct, with a revision to the project plans reflected in the Final EIS stating that the regular operations will include up to six mobile food trucks.

Comment: *Runoff calculations seem a little whacky. I would say that we get 1 inch rainfall on consecutive days quite often. We had 6 inches in 24 hours in Spring 2017. There is no accounting/data for previous saturation. This is an important omission.*

Response: The drainage analysis for the rural center is presented in Final EIS *Section 3.6* and *Section 3.16* and *Appendix H*. There are strict requirements in the City rules for site development and drainage controls, which obligate the rural center to accommodate the design storm rainfall events.

Comment: *Electrical Power: "Electrical demand for the restaurant and rural center is estimated at 4,000 kilowatt hours per day." How can it be the same as it is currently?*

Response: EIS *Section 3.16.1 Existing Conditions* estimates the current electrical power demand at 4,500 kilowatt hours (kWh) <u>per month</u>; *Section 3.16.2* describes future conditions with the rural community commercial center as an estimated power demand for 4,000 kWh <u>per day</u> (emphasis added). On-site power generation through photovoltaic panels are anticipated to provide approximately one-third of the power demand.

Comment: *Solid Waste: The document projects the generation of 296 to 345 pounds of solid waste per day. Recycling will apparently be promoted but currently most recyclables end up burned at H Power. Thank you for saying that the food containers would be non- polystyrene. They need to be compostable. The calculations in the document do not account for increased litter and it getting into the storm drains and consequently the ocean.*

Response: The project will do its part to recycle materials and minimize contributions to the waste stream. Proper management of the site and waste containers will minimize litter on the property and potential for this material to enter the drainage system.

Comment: *Apparently pictures from January 2017, are shown in Figures 3-8 and 3-9A-F. They do not look like a Jan 2017 pictures. Please address.*

Response: The aerial photograph in Figure 3-8 is from 2016. Site photos were taken in 2017.

Comment: *"This area of the North Shore is not slated for growth, according to the North Shore SCP. With little exception, other lands on the North Shore falls within the State urban or agricultural land use districts, and zoning allows residential or country uses. There are no currently proposed subdivisions, commercial or resort developments for the region. According to the Transportation Impact Analysis Report prepared for this EIS, no transportation infrastructure improvements are planned for the area around the rural center (Appendix F). The discussion of cumulative impacts in the following section identify relevant resource uses occurring in the project area to which the project may contribute to impacts." Did someone copy and paste this into the wrong EIS? There are quite a few significant pieces of land zoned for agriculture being "repurposed" for huge houses around here. The real estate company that operates on the subject property is involved in many of them. The Turtle Bay Resort also has approval for hundreds of new units (hotel rooms and resort residential houses/condos). HRI has shifting plans to expand the number of university students at Bingham Young and build between 300 and close to 1,000 housing units and retail outlets. Further away but significant, Dillingham Ranch is planning on building hundreds of houses. Please address this disparity and how the modeling elicited this conclusion it is flawed?*

Response: The discussion of cumulative impacts addresses known new developments in the vicinity of the project. The proposed projects you mention are located at distances of 5 to 10 miles from the project site and are not certain to be advanced. These proposals do not change the specified intent in the NS SCP for the development of the Rural Community Commercial Center on the properties zoned B-1 neighborhood commercial district.

Comment: *Finally, please address these main takeaway points:*

1) *No matter what kind of waste water treatment system is employed, given the proximity of the Shark's Cove Marine Life Conservation District - We cannot afford to take any chances. [Is there enough data to justify this risky near shore, high volume application?]*

2) *The "studies" carried out in the MLCD were pathetically inadequate and none of the previously published studies of the area were reviewed or included in the references. Please revise the DRAFT EIS and resubmit for another comment period.*

3) *Run off and leaching of cleaning chemicals, engine oil and other substances were not addressed. Please revise the Draft EIS and resubmit for another comment period.*

Response: The project team is well aware of the sensitivity of this location with regard to surface runoff, treated wastewater disposal and the nearshore marine environment, and that is exactly why the land plan, drainage and wastewater systems, and Final EIS addresses each of these subjects.

Comment: *(Continued)*

4) *The number of food trucks is vague to say the least. This results in an inability to accurately forecast traffic and a parking apocalypse. Please revise the Draft EIS and resubmit for another comment period.*

Response: The Final EIS is revised to state that typical operations will involve up to six food trucks with parking provided per City requirements for the commercial uses including the food trucks.

Comment: *(Continued)*

5) *The rerouting of the entrances to Foodland and the "Center" into one, will result in perhaps being able to get into the development but will make it extremely difficult to park and then get out of the place. Especially aggravating will be trying to get in from Kahuku side and out going in the direction of Haleiwa.*

Response: The EIS has been clarified to note that the two existing driveways to the Foodland grocery store, adjacent to the project site, are closer in proximity to the Pūpūkea Road intersection than allowed under current DOT standards and traffic engineering practice (*Section 3.13.1*). Vehicle circulation is planned to accommodate both the Foodland and the new uses at the rural center, with a centralized access and internal driveways to flow efficiently.

Comment: *(Continued)*

6) *Last and certainly not least is the fact that the landowners of this property and the people currently seeking to build their "Center" have operated illegally for years. They have flagrantly violated state laws. It is my understanding that they have accrued $150,000 in fines. What possessed the DPP to issue them a SMA permit defies common sense without satisfying the fines and remediation the existing violations? The situation raises serious questions about the decision makers involved at the DPP.*

Response: The SMA Minor Permit (2017/SMA-21) addresses the issues with a current plan that eliminates the prior violations and fines settlement. The new rural center will replace the current uses on the property and be subject to conditions of approval of an SMA Use Permit - Major.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Becky Faunce <beckyfaunce907@gmail.com>
Sent: Tuesday, November 28, 2017 1:38 PM
To: ashaw@honolulu.gov
Cc: hanapohakullc@gmail.com; Pupukea Rural Community Ctr
Subject: 2.7 acres Sharks Cove intersection

Aloha,
Thanks for letting readers know about this proposed development as described in this morning's Star Advertiser. It appears that this might help to move the food trucks and their customers from the sides of Kamehameha Highway near Sharks Cove into a safer spot.

Based on the illustration published and my own knowledge of the area as one who enjoys visits to the North Shore, a third entry/exit point seems sensible. Traffic is often tangled at that intersection with some drivers turning and looking at the surf or looking for access to the small Sharks Cove parking area, while others are stopping to visit Foodland, while others are anxious to move forward in either direction. Add to this a fire station and its important needs, and the ingress/egress of a residential area with an increasingly popular ancient Hawaiian historic site which is used as a stop by tour vans as a visitor attraction.

Before further development of this real estate is authorized, a public safety review might indicate that the intersection of Kamehameha and Pupukea and Sharks Cove merits a substantial safety upgrade with dedicated turning lanes to support these uses.

At a minimum, for traffic safety reasons the development under consideration should include an additional exit/entry that does not go directly to Kamehameha Highway or Pupukea Road. The developer should make improvements to Pahoe and use a portion of the parcel for an entry/exit onto Pahoe Road. An entry/exit from the back of the parcel onto Pahoe seems most appropriate. It would help to avoid further backups on Kamehameha and avoid exacerbating the risk of rear end collisions on both Pupukea Road and Kamehameha Highway.

Thanks for your consideration.

Becky (Hommon) Faunce
1645 Ala Wai Blvd #1306
Honolulu HI 96815

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Becky (Hommon) Faunce
1645 Ala Wai Blvd #1306
Honolulu, HI 96815
Email: beckyfaunce907@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Faunce:

Thank you for your comments provided via email on November 28, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *Thanks for letting readers know about this proposed development as described in this morning's Star Advertiser. It appears that this might help to move the food trucks and their customers from the sides of Kamehameha Highway near Sharks Cove into a safer spot.*

Response: The EIS describes the proposed rural commercial community center to expand the mix of goods and services available to residents of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors. Section 2.4 of the EIS describes the small-scale clustered buildings to be set back from the highway, with parking sited behind. A pathway within the property will provide a pedestrian route to the adjacent Foodland, bus stops and the primary intersection of Kamehameha Highway and Pūpūkea Road.

At the request of the City and County Department of Planning and Permitting, an installation of a sidewalk along the mauka side of Kamehameha Highway will define the shoulder area along Kamehameha Highway and should eliminate space for illegal parking fronting the property.

Comment: *Based on the illustration published and my own knowledge of the area as one who enjoys visits to the North Shore, a third entry/exit point seems sensible. Traffic is often tangled at that intersection with some drivers turning and looking at the surf or looking for access to the small Sharks Cove parking area, while others are stopping to visit Foodland, while others are anxious to move forward in either direction. Add to this a fire station and its important needs, and the ingress/egress of a residential area with an increasingly popular ancient Hawaiian historic site which is used as a stop by tour vans as a visitor attraction.*

Response: The Transportation Impact Analysis Report (TIAR) prepared to project future traffic from anticipated growth in the region as well as new vehicle trips due to the rural center's development has shown that the project will not significantly add to traffic in the region. The existing multiple entry and exit points along Kamehameha Highway create hazards for pedestrians. The proposal consolidated driveway for both the center and Foodland will minimize the points where pedestrians interact with vehicles entering or exiting to Kamehameha Highway to create a safer walking environment.

Traffic volumes continue to grow due to the ambient island-wide traffic growth and increasing visitor attention to the North Shore's towns, beaches, and mountain trails. Regional traffic mitigation solutions have been suggested, such as establishing beach shuttles with organized public parking at lands in Haleʻiwa and Turtle Bay. The intersection of Kamehameha Highway at Pūpūkea Road is one of only three with traffic lights along the 10-mile stretch of two-lane highway between Kuilima Drive and Haleʻiwa. Until regional solutions are reached, the existing traffic congestion problems on the North Shore are likely to continue.

Comment: *Before further development of this real estate is authorized, a public safety review might indicate that the intersection of Kamehameha and Pupukea and Sharks Cove merits a substantial safety upgrade with dedicated turning lanes to support these uses.*

Response: The Hawaiʻi Department of Transportation (HDOT) Highways Division reviewed the TIAR prepared for the project and met with the project team. The agency's comment letter regarding its internal review is contained in Chapter 6 of the EIS and states:

> "After HDOT internal consultation, it has been determined that the proposed traffic mitigation and improvements proposed for the development largely satisfy our concerns. The current remaining issue relates to a proposed crosswalk crossing Kamehameha Highway at Pahoe Street. The HDOT finds a crosswalk desirable but still has concerns related to pedestrian safety. The project traffic consultant, Fehr & Peers, is developing a course of action to address those concerns."

The TIAR concludes that the existing stretch of Kamehameha Highway fronting the project, with the added capacity from a center two-way left-turn lane, will accommodate additional vehicle trips to the rural center without substantially increasing delays for existing users on Kamehameha Highway.

Comment: *At a minimum, for traffic safety reasons the development under consideration should include an additional exit/entry that does not go directly to Kamehameha Highway or Pupukea Road. The developer should make improvements to Pahoe and use a portion of the parcel for an entry/exit onto Pahoe Road. An entry/exit from the back of the parcel appropriate. It would help to avoid further backups on Kamehameha and avoid exacerbating the risk of rear end collisions on both Pupukea Road and Kamehameha Highway.*

Response: Pāhoe Road is privately-owned, and its maintenance is the responsibility of a "resident hui" (association). Early in the project's planning, Hanapohaku and G70 met with the Pāhoe Road Residents Hui and heard its objection to allowing customer access along Pāhoe Road. As such, Hanapohaku agreed to not create a public access to the Center along Pāhoe Road. A fence will be installed to remove the temptation to park on Pāhoe Road and access the center from the north.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: maliaarts@hawaii.rr.com
Sent: Sunday, January 7, 2018 3:39 PM
To: ashhaw@honolulu.gov
Cc: Pupukea Rural Community Ctr
Subject: Hanapohaku North Shore project

Aloha,

I'm writing in support of this project. I am veteran and a home owner at KEE. I've lived on the North Shore since 1975 and have seen a lot of changes, good bad and ugly. I opposed the last project for this area. After seeing the transformation of this property from a illegal dump with homeless and criminal problems to something useful to my family and an asset to the community. I've seen the landowner address community concerns and mitigate problems as best he could and I believe this will continue as this project proceeds. After reviewing this proposal, I believe it is ecologically and functionally sound while keeping a "country look and feel", it will support community needs, infrastucture and an opportunity for our small business to serve us and our visitors without creating the disaster that is now Haleiwa. It seems as though they are building on far less than they are permitted. I and my family will use the center and it will benefit us and the community. I think w have a responsible land owner and developer for this community asset and I hope this project will be able to proceed. Thank you for your considering my comments.

Mahalo,
Bernard Rzeplinski

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Bernard Rzeplinski
Email: maliaarts@hawaii.rr.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Rzeplinski:

Thank you for your email dated January 7, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I'm writing in support of this project. I am veteran and a home owner at KEE. I've lived on the North Shore since 1975 and have seen a lot of changes, good bad and ugly. I opposed the last project for this area. After seeing the transformation of this property from a illegal dump with homeless and criminal problems to something useful to my family and an asset to the community. I've seen the landowner address community concerns and mitigate problems as best he could and I believe this will continue as this project proceeds. After reviewing this proposal, I believe it is ecologically and functionally sound while keeping a "country look and feel", it will support community needs, infrastucture and an opportunity for our small business to serve us and our visitors without creating the disaster that is now Haleiwa. It seems as though they are building on far less than they are permitted. I and my family will use the center and it will benefit us and the community. I think w have a responsible land owner and developer for this community asset and I hope this project will be able to proceed. Thank you for your considering my comments.*

Response: We appreciate that you made the time to voice your support for the proposed rural community commercial center at Pūpūkea. The owners are committed to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

The proposed development is of a scale prescribed in the North Shore Sustainable Communities Plan (NSSCP) for the parcels and will utilize just 25 percent of the floor area ratio (FAR) allowed under City land use ordinance for this property.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Blake D. McElheny <blakemcelheny@yahoo.com>
Sent: Monday, January 8, 2018 11:29 PM
To: ashaw@honolulu.gov; Pupukea Rural Community Ctr
Subject: Re: Pupukea "Rural Community Commercial Center" DEIS Comments

January 8, 2018

Ardis Shaw-Kim, (808) 768-8021, ashaw@honolulu.gov
Jeff Overton, AICP LEED AP, (808) 523-5866, pupukea@g70.design

Dear Ms. Shaw-Kim and Mr. Overton:

I am a founder of the organization Malama Pupukea-Waimea (MPW). MPW has worked since 2005 "to replenish and sustain the natural and cultural resources of the Pupukea and Waimea ahupuaa for present and future generations through active community stewardship, education, and partnerships."

MPW was founded in response to the serious threats to the community and marine ecosystem in these ahupuaa that arose from the commercial "mall" development by the Honu Group on the same parcels on which Hanapohaku (HP) is proposing another tourist-focused shopping mall that is the subject of this DEIS and a proposed Special Management Area (SMA) "Major" Permit. It was also founded as part of a global community-based movement to restore community-based management to near shore fisheries and marine protected areas.

It is clear this DEIS is substantively flawed and must be renoticed/resubmitted as a full Chapter 343 EIS.

It is unfortunate that the landowner and its consultants have chosen to disrespect this community and the legally required processes with inadequate, shoddy, and misleading representations of the impacts this development is already having (and will have) on this special community.

The developer and the consultant ask us to believe a lie - that this will be a rural community commercial center primarily serving residents.

While it makes little sense to deal with the other important questions that a serious review of the DEIS presents until this lie is addressed, one still must ask the developer and the consultant:

1.
What are the true impacts on the groundwater and the impacts on the near shore waters given the tidal influences already observed? Given the findings on Maui of contamination of the near shore waters by waste water treatment plants and injection wells - are the developer's waste water plans sensible given the requirements of the Clean Water Act, the sensitivity of this area, and the unique geology and hydrogeology?
2.
What are the true impacts of the surface water runoff on the near shore waters?
3.
Where is all of the "grey water" from the existing trucks going - and why does it smell at some of the food trucks?

4.
What is an objective way to determine if a rural community commercial center is primarily serving area residents?
5.
How is it conscionable to further add traffic to the already overburdened Kamehameha Highway?
6.
Is this really the most sensible use of this area given the surrounding resources and the already overburdened and underfunded infrastructure in this neighborhood?

A community testifier summed up a question on many community members' minds at the North Shore Neighborhood Board when he told the Honu Group in 2005 "I have a question for you - why don't you beat it?"

Until such time that the developer and consultant "beat it" - this commercial development should be recognized and labeled as what it truly will become (and has already to some degree been) – the **Sharks Cove Commercial Mall for Tourists** – not what conveniently looks and sounds benign and pleasing in an DEIS.

The proposed Project will attract more tourism, more traffic, and more pollution to this small sensitive area resulting in major impacts to the Pupukea community and environment. The serious flaws in the procedure and content of the DEIS outlined in the questions and comments above (and also referred to in the comments submitted by MPW, the Save Sunset Beach Coalition, and other concerned community organizations and residents) require that the process be started fresh, with a new EISPN, then new DEIS, and full compliance with HRS Chapter 343.

Thank you for the opportunity to comment.

Sincerely,
Blake McElheny
Haleiwa, HI 96712

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Blake D. McElheny
Email: blakemcelheny@yahoo.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. McElheny:

Thank you for your comment letter dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I am a founder of the organization Malama Pupukea-Waimea (MPW). MPW has worked since 2005 "to replenish and sustain the natural and cultural resources of the Pupukea and Waimea ahupuaa for present and future generations through active community stewardship, education, and partnerships." MPW was founded in response to the serious threats to the community and marine ecosystem in these ahupuaa that arose from the commercial "mall" development by the Honu Group on the same parcels on which Hanapohaku (HP) is proposing another tourist-focused shopping mall that is the subject of this DEIS and a proposed Special Management Area (SMA) "Major" Permit. It was also founded as part of a global community-based movement to restore community-based management to near shore fisheries and marine protected areas.*

Response: We acknowledge the information provided regarding the formation and activities of Mālama Pūpūkea-Waimea (MPW). As stated in the EIS *Section 2.4* Proposed Action, the rural center will expand the services and goods available to residents of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors, and add services not otherwise available in the vicinity. The landowner's vision includes creating a place where local businesses can conduct operations to serve the Sunset Beach-Pūpūkea community and its visitors.

Comment: *It is clear this DEIS is substantively flawed and must be renoticed/resubmitted as a full Chapter 343 EIS. It is unfortunate that the landowner and its consultants have chosen to disrespect this community and the legally required processes with inadequate, shoddy, and misleading representations of the impacts this development is already having (and will have) on this special community. The developer and the consultant ask us to believe a lie - that this will be a rural community commercial center primarily serving residents. While it makes little sense to deal with the other important questions that a serious review of the DEIS presents until this lie is addressed, one still must ask the developer and the consultant:*

Response: The EIS inside cover page states: "The environmental document is prepared pursuant to the Revised Ordinances of Honolulu, Chapter 25, Special Management Area, and consistent with Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health, Environmental Impact State Rules." The EIS documents meet the content and procedural requirements of Chapter 343 HRS and Title 11-200 HAR.

Comment 1: *What are the true impacts on the groundwater and the impacts on the near shore waters given the tidal influences already observed? Given the findings on Maui of contamination of the near shore waters by waste water treatment plants and injection wells - are the developer's waste water plans sensible given the requirements of the Clean Water Act, the sensitivity of this area, and the unique geology and hydrogeology?*

Response: The rural center will utilize a highly advanced wastewater treatment process that will employ aeration and separation of waste with additional ground treatment through absorption beds. The absorption bed disposal system will be double the required size for 100 percent redundancy. No injection well is proposed; the State Department of Health (DOH) Wastewater Branch (WWB) has expressed its support for the project to utilize absorption beds instead of injection wells (see DOH WWB letter regarding Draft EIS included in EIS Chapter 6).

Two technical evaluations were conducted to examine groundwater and marine water interaction; the full reports are published as *Appendix B* and *Appendix C* in the EIS. The findings of the evaluations are contained in EIS *Section 3.5 Groundwater* and *Section 3.7 Marine Environment*. The existing groundwater quality conditions at the site, as measured through monitoring wells established for the EIS analyses, identified nutrient levels in the groundwater that reflect contributions directly upgradient including fertilizer applied for agricultural and landscaping, along with agricultural and domestic animal waste. (*Section 3.5.1*).

For context, it is important to note that nearly all North Shore businesses and residents utilize on-site disposal systems (OSDS), as City sewer systems are limited to a small subdivision in the Waialua area. According to a 2009 study of OSDS, Pūpūkea, Sunset Beach has the second highest density of OSDS in O'ahu communities with 123.3 units per square mile. More than 500 onsite wastewater disposal systems (cesspool and septic systems) serve homes in Pūpūkea and Sunset Beach upgradient of the project site including 279 cesspools, plus 159 aerobic, septic, and soil treatment systems. Using a conservative estimate of 250 gpd of wastewater production per residence, the total wastewater volume being disposed daily through this 3,000-foot wide corridor is more than 100,000 gallons per day, all of which ultimately reaches the ocean (see *Figure 3-4* in the EIS).

The potential effect from the rural community commercial center's wastewater system is quantified in *Section 3.5.2*. The incremental increase in nutrient contributions is calculated at 4 percent (nitrogen) and 7 percent (phosphorus). Adding the potential groundwater increase to the current marine nearshore water quality (*Section 3.7.2*), the change represents less than 1 μM for total nitrogen and 0.2 μM for total phosphorus, which is not significant given the composition of groundwater released along this shoreline.

Comment 2: *What are the true impacts of the surface water runoff on the near shore waters?*

Response: *Section 3.5* of the EIS describes the site conditions under the SMA-minor permit and the conditions designed for the rural community commercial center. Long-term management of storm water will comply with the recently enacted City and County Water Quality Rules. Methods include installation of low impact development (LID) post-construction treatment controls to retain as much storm water on the site through infiltration as feasible, and to filter and treat storm water released off site to the maximum extent practicable.

The installation of LID best management practices (BMPs) will include a subsurface storm water detention on the three parcels that will substantially reduce the suspended and bedload sediment that is currently carried into the marine environments by surface runoff (*Figure 3.5* of the EIS). The detention storage will also reduce both the volume and flow rate of storm water from the parcels. For more frequent, small storm events with rainfall amounts of up to four inches, all runoff would be retained in the detention storage system and eventually percolate back to groundwater. Overall, the rural center's drainage system will have a significant environmental benefit in comparison the present use of the subject parcels (*Section 3.6.2* and *Appendix B*).

Comment 3: *Where is all of the "grey water" from the existing trucks going - and why does it smell at some of the food trucks?*

Response: The food trucks will be fully mobile and compliant with DOH and City and County of Honolulu Department of Planning and Permitting (DPP) regulations. The trucks will not be connected to, nor utilize, the on-site wastewater system. Per current DOH rules, food trucks are required to have liquid wastes removed at an approved waste servicing area or by a licensed commercial pumping contractor. Wastewater capacity for transient demand including employees and customers of mobile food establishments by the rural community commercial center's wastewater treatment and disposal system is discussed in *Appendix H*.

Comment 4: *What is an objective way to determine if a rural community commercial center is primarily serving area residents?*

Response: The existing commercial use of the area across Kamehameha Highway, Foodland grocery store, supports the Pūpūkea, Waimea and Kawailoa communities and visitors. The increase in visitor numbers over the past decade State- and island-wide is well documented by multiple sources, and cannot be attributed to a single development. The DPP determined that the uses of the property are consistent with the guidelines for a Rural Community Commercial Center as defined by the NS Sustainable Communities Plan. There is no requirement to quantify the number of patrons or their place of residence. The rural center will introduce several businesses with services for the local community, including Island Urgent Care and Waialua Federal Credit Union.

Comment 5: *How is it conscionable to further add traffic to the already overburdened Kamehameha Highway?*

Response: A Transportation Impact Assessment Report (TIAR) by Fehr & Peers was conducted for the EIS. Traffic flow will not be adversely affected by the rural center operations. The State Department of Transportation Highways Division, the City Department of Planning and Permitting Traffic Review Branch, and the City Department of Transportation Services have reviewed the traffic report and Draft EIS. The State and City have recommended mitigation measures be implemented in association with the public transportation facilities.

Comment 6: *Is this really the most sensible use of this area given the surrounding resources and the already overburdened and underfunded infrastructure in this neighborhood?*

Response: The North Shore Sustainable Communities Plan (NSSCP) guides development for the region and was prepared with years of input from community members. Among the land uses defined in the NSSCP, the 4.56 acres within the existing B-1 Neighborhood Business District that includes the existing Foodland grocery store was identified as the

location to consolidate existing and future commercial use. The modest development plan utilizes approximately 25 percent of the floor area ratio (FAR) allowed under City Land Use Ordinance for this property and is consistent with the guidelines set by the NSSCP.

Comment 7: *A community testifier summed up a question on many community members' minds at the North Shore Neighborhood Board when he told the Honu Group in 2005 "I have a question for you - why don't you beat it?" Until such time that the developer and consultant "beat it" - this commercial development should be recognized and labeled as what it truly will become (and has already to some degree been) – the Sharks Cove Commercial Mall for Tourists – not what conveniently looks and sounds benign and pleasing in an DEIS.*

The proposed Project will attract more tourism, more traffic, and more pollution to this small sensitive area resulting in major impacts to the Pupukea community and environment. The serious flaws in the procedure and content of the DEIS outlined in the questions and comments above (and also referred to in the comments submitted by MPW, the Save Sunset Beach Coalition, and other concerned community organizations and residents) require that the process be started fresh, with a new EISPN, then new DEIS, and full compliance with HRS Chapter 343.

Response: See response to previous comment regarding the project's full compliance with HRS Chapter 343 and Chapter 25 Revised Ordinances of Honolulu. As shown in the EIS *Section 3.10.2* and mentioned in the previous response, the scale of the rural community commercial center is designed to utilize just 25 percent of the allowable floor area ratio. The previous landowner's 2004 proposal was for a development more than twice the size of the current proposal. The comment cited from the previous proposal misrepresents the current landowners' vision: to create a place where local businesses can conduct operations to serve the Sunset Beach-Pūpūkea community and its visitors.

The owners have taken great strides to engage a qualified professional team to listen closely to the community and design a project which is consistent with the NSSCP policies and objectives for the Rural Community Commercial Center. It is recognized from your comments that the project brings concerns about the scale and type of development. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. We welcome your continued involvement in this planning process, as it is this community's care and attention to good planning that helps to retain the special qualities we all value.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Bob Leinau <leinaur001@hawaii.rr.com>
Sent: Monday, January 8, 2018 1:49 PM
To: hanapohakullc@gmail.com; Pupukea Rural Community Ctr
Subject: Comments to Draft Environmental Impact Statement- Hanapohaku
Attachments: Comments to Draft Environmental Impact Statement final 1.8.2018.docx

With sincere hope for a really great project!
Malama pono, Bob Leinau
P.S. Please acknowledge receipt of this email.

Comments to Draft Environmental Impact Statement

for Pupukea Rural Community Commercial Center from

Bob Leinau 1/7/2018

Impacts Not Adequately Assessed In DEIS

Stewardship of the Pupukea Marine Life Conservation District and whole North Shore is an ongoing need. How does this proposed development benefit the surrounding public assets and amenities? How will this project be compatible with the goals and objective of the Coastal Zone Management area in which it is located? Since the probability of negative impacts to the natural environment and human environment are high, there should be some stipulated, unconditional, positive offsets. How will this development offset the loss of available public park-user parking that is taken up by the development customers? Due, impart to existing development on the property and Foodland's customers, it is not uncommon for there to be no parking left along Kamehameha Hwy and the frontage road for local people and visitors alike to enjoy the public beach park. What will the developer do if and when this area becomes a significant traffic slowdown node [similar to Laniakea or the commercial areas in Haleiwa with inadequate parking]? More parking is critical! If the past is any indicator of the future this area will be a traffic nightmare in the years to come. It should be scaled back or retail operations that succeed on low traffic turnover should be the focus.

A clear understanding of the dynamics associated with people flow between the Hanapohaku development and the very popular Pupukea City Park, the Pupukea Marine Life Conservation District, and the Ke Ala Pupukea Bike Path is critical to understanding what the positive and negative impacts will be from both the developers point of view and the public assets users and the general community at large. There are serious concerns about several significant negative impacts related to the environment, general public usage of this area and its adjacencies.

Insufficient Parking Analysis

Loss of currently available public parking spaces is one of major concern. Specifically how many of the existing parking spaces will be lost due to new parking signage, restrictions and/or restriping? A diagram showing these lost spaces would be appropriate. How many of the public parking spaces for beach park users will be lost to employees of the development? How many of the new development customers will utilize beach park parking spaces rendering them unavailable to beach park users? These real negative impacts must be considered and accounted for. Furthermore, on busy summer days there are already no parking spaces in the general area. One must drive several hundred yards beyond Sharks Cove in the North direction. Will Park users be allowed to park at the new development or in Foodland's parking lot as they are allowed to do today? If not, that factors into more lost parking stalls for Park users due to this project. What is the potential total number of parking stall spaces to be lost to the general public that only wanted to go to the Park?

The Transportation Impact Analysis Report shows a parking diagram on page 8 that is very different from the artistic renderings. The open space turned into parking stalls. Also this parking lay out shows parking stalls on top of the Foodland leach field where there is currently no parking. Was this area engineered to accommodate the traffic/parking load that the diagram on page 8 shows?

The DEIS has no parking stalls or areas designed for tour buses – which currently disgorge customers onto the property in the summer months to enjoy snorkeling at the Pupukea MLCD? Where is any analysis on current or future tour bus planning or future impacts?

On page 18 [near the bottom] there is reference to "no parking" signs which imply that there is no parking on the makai side of Kamehameha Hwy. This is not true. It is legal and regularly used for parking on busy days. The no parking signs are for the mauka side of the parallel frontage road between the Park and Kamehameha Hwy. This one-way frontage road is important for safety response. Parking is a big deal, especially for police, fire, and lifeguard safety and rescue response times.

Parking on the maikai side of Kamehameha Hwy is a valuable parking area and any realignment and/or restriping of Kamehameha Hwy should not reduce the number of parking stalls currently located.

Note page 42 regarding parking of cars immediately adjacent to Pahoe road. More information needs to be provided about this statement. The study needs real numbers. Please note the law that requires a significant distance between an intersection and where a car may park.

Existing parking is a wholly inadequate exploration of a very serious concern. Real numbers clearly delineated on a map would be meaningful showing all of the available parking on the property and the parking stalls that service the adjacent Pupukea Park, Sharks Cove, Kamehameha Hwy., and frontage road. It is all related and a true cumulative impact analysis must be completed. A before and after would be appropriate along with a projection for the future.

There should be a separate well-defined set aside section accounting for where the employees for Foodland and the new development will park. This accounting should include the parking spaces utilized off of the property as well as its impact on the Park users. When calculations for the number of employees was made was it on a FTE basis? If part-time employees will be hired, then the total number of employees will go up as will the impacts attendant there to.

General consideration regarding Maintenance: Often developers do not plan in adequate space for facilities support personnel and /or contractors to store their equipment and supplies. Be smart about this space allocation so that your parking lot does not become a container storage eye sore/illegal use.

The Project Does Not Comply With B-1 Zoning

Since the entire development is defined as being primarily a community commercial area, terms should be specifically defined so that it is clear if, and/or when this criteria [tourists percent verse residents ratio] is exceeded. An agreed upon percentage, expressed over an agreed amount of time might be useful. Also

it should be clear what remedies [bureaucratic/ordinance and/or legal] may be available to keep this project from morphing into a tourist oriented commercial enterprise that exceeds the primarily local community commercial criteria. How much is too much? A big negative impact is the time, energy, and resources that the community must put into trying to help control a development that operates in noncompliance.

Insufficient Traffic Analysis and Mitigation

Traffic congestion is a very real potential problem. Residents do not like to get stuck in traffic nor find that there is no place near to park. The potential for this area becoming a traffic problem needs to be thoroughly explored. Complicating the prognostications are delivery trucks, and peak traffic times at Foodland coinciding with meal times that may be busy at the new proposed development. DEIS needs to explain what the recourses are if the traffic develops a less favorable rating from the State Department of Transportation. How much is too much? What will operations do when the parking lot is full? And, how will this affect the public facilities in the area such as beach park users? Plus being the cause of traffic complications is not only un-neighborly, it can result in very bad PR and negative economic impacts.

Noted that this Traffic study is predicated on permission from the state DOT for improvements – permits for which have not been granted. At what point will changes on property invalidate this Traffic study requiring a new current one?

On page 6 the Traffic Analysis assumes that there may be "four to six food trucks." Other parts of the DIES mention a higher number of trucks such as 8. Did the Traffic Analysis only consider a maximum of 6 trucks? More trucks equals greater impacts, yet this not considered in DEIS analysis.

The Traffic Analysis, due to its narrow scope of data collection, may not be an accurate assessment due to the strong seasonal shifts. From an inconvenience perspective the Traffic Analysis should address what the traffic impacts are on peak days [i.e. what might the three busiest days of the year look like?] The assumption that the traffic may have been busier on a day when there was a surf contest in Haleiwa may well be a false conclusion [page 21] as many cars would have stayed in Haleiwa and not come to this specific area.

Lack of Analysis on Pedestrian and Bicycle Impacts

A clear study of pedestrian mobility during the summer months when it is the highest would give a much more accurate picture of the developments impacts.

Regarding Pedestrian and Bicycle Circulation: the frontage of the property along Kamehameha Hwy should be designed to accommodate and incorporate a "Bike Path" 10 feet wide. See page 17. The current project has rented bicycles in the past and well may in the future. Cars, people, and bicycles all moving around in high numbers needs space in order to provide an appropriate amount of safety. Note many of the employees we have been told will be commuting to work on a bicycle. Landscaped barriers should be well defined.

Note that when addressing pedestrian crossings in should incorporate anywhere along the length of Kamehameha Hwy from the traffic light to Pahoa road, and not just at specific spots. The whole picture should be well understood, now and in the future.

Impacts to Beach Park Use

The increase in park recreation utilization due to the proposed project needs to be understood along with what the increased negative impacts would be added to the already busy pedestrian traffic at the Park. Foot traffic erosion is a problem now. This will only increase. The increased erosion causes increases in suspended solids and turbidity counts. The conditions are dangerous after rain has turned the dirt paths into muddy conditions. There will be more utilization of the restroom facilities and therefore more waste stream. And, of course, more trash to pick up and haul away. Increased utilization of the Park also increases the burden of public services provided: the life guards need to patrol this area, the police, the DOCARE and Fire Department and Park staff. These impacts were not properly considered.

Incomplete Wastewater Analysis

Increased utilization by the customers of the new development will generate both more impact on the park restroom and increase in the liquid flow of treated wastewater in the ground water to the ocean from the Projects own facilities. Pollution can take many forms. A clear understanding of what is not removed from the wastewater that goes into the proposed leach field should be clearly stated. Removal or reduction of pathogens is one thing but it does not address the many chemicals that are also in the waste stream. Often a single chemical in minute concentration will be highly toxic to certain types of marine life [toxic effects in some species occur at 1 nano-gram per liter of water, a quote from Wikipedia regarding TBT]. What other chemicals end up in the water? What might the negative impacts be to coral, limu, and other animals that were not addressed adequately in the DEIS marine survey report?

Insufficient Water Pollution Analysis

Regarding ocean pollution it would be advisable to get the State Department of Health-Clean Water Branch to commit to testing the water on a regular basis in the area where pollution numbers are most likely to reflect contaminated conditions. High utilization to the tide pool area and low flushing rates in the summer months, and now with a potential increased ground water discharge from the proposed development, strongly suggests the need for official scheduled monitoring and control.

Wastewater Treatment Issues

One of the things that could go wrong with the proposed system is if, at peak times, the volume of the waste stream exceeds the design capacity. This could be a problem on the front end and it could be a problem if there is not enough detention time prior to seepage. Another problem could be if the electricity stops, how will the pumps move the waste water uphill? Will there be a backup generator? How large are the holding /pre-loader tanks and if/when clogging happens, to where will the waste stream flow?

Regarding the treated wastewater discharge that finds it way into the water table and ultimately flows into the ocean: The test wells show that there are nitrates and phosphates, but what else is in the ground water now that could be detrimental to the environment at/in the Pupukea MLCD?

Regarding the calculated rate of discharge of the ground water: are there seasonal fluctuations and what might be the nature of those fluctuations? Given that the pollutants flowing into the ocean get diluted rapidly losing some of the chemical impact, how would one best numerically describe the difference between a discharge into the shallow tide pool system across the street from the project with diminished currents and dilution potential as compared to a standard beach seepage area? What would be the environmental impacts associated with this differential?

What assurance does the public have that the developers will employ BMP procedures that will reduce pollutants of concern including sediment, nutrients, trash, pathogens, pesticides, oil, grease, hazardous/toxic waste, metals and organic compounds? Who enforces this subject matter?

Note page 3-19 refers to a retention capacity of 4 inches – per what unit of time? No analysis of how holding capacity can be affected by the variable nature of recent rain events.

Regarding water demand: Are the projections of usage, including the food trucks and the increases they will make, in restroom utilization? And, are the projections designed to accommodate projected maximum peak customer days [three busiest days of the year for example]?

Increased Tourism Associated with the Project Not Assessed

It is likely that the proprietors of the new development will be advertising the amenities in this area including the Pupukea MLCD and that the increased number of customers may well be arriving on buses. What provisions are made to accommodate this type of volume of visitors. Hanauma Bay requires an orientation. Commercial operators have an obligation to inform their customers

about risks, do's and don'ts that affect a MLCD along with the significant risks associated with the ocean along this stretch of coastline.

Impacts of Food Trucks Not Adequately Assessed

When one looks at the significant impacts associated with the food trucks that have operated on the property since Hanapohaku took possession of the land, it is apparent that this business activity should not be considered an optional/if/ afterthought /maybe. The figure 2-6 is not an adequate representation of what might come to pass if the food truck business is exercised. The "open green space" that the developer likes to talk about could very well, to a large extent, be used up due to this option. One can only imagine what that might look like if the past is any prediction of the future. A square foot allocation and a map with some realistic outlines reflecting the size and spacing would be appropriate. The food truck option needs to be addressed, incorporated, and honestly analyzed by the full plans so that all of the fixed assets, building code requirements are made clear and applicable, related to parking, size of trucks/foot print, covered seating [which it should be ... temporary tents are generally not temporary], rest rooms, electricity, water, waste water handling, gas, generators, frequency of mobilization, vehicular traffic, etc. The cumulative/total impacts need to be assessed of both the fixed building businesses and the mobile food truck businesses. A clear reference to the City and State codes that they will be operating under needs to be understood and enforced. There has been "confusion" regarding compliance in the past.

The Marine Survey is Defective and Must be Redone

Assessment of Marine Water Chemistry is insufficient. Selection of the “Transect five” as a control was improper as there are several factors that make this an atypical site. This area has a considerable amount of ground water discharges. The up gradient for this area is high density housing including the Back Packers facility which I'm told can accommodate 125 guests. This area is also downstream/current from all of the previous transects. Most of the time the trade winds drive the current toward Haleiwa. Being just downstream from the major storm drain [transect 4] from Pupukea is a significant factor. Frequently, after a rain, this drainage creates a significant brown plume. If the control transect were to the North of Sharks Cove the results would likely be a significantly different set of numbers ... cleaner. Why was a control site chosen that in all probability would reflect less clean water now and in the future? Further as it's related to the water sampling, what would be the average and mean be if more samples were taken in different seasons and weather conditions? I suspect that the variability might be considerable. It is known that coliform bacteria fluctuate wildly after storm water events. There was no rain or drainage occurring the one-day water samples were taken.

Regarding the ocean biotic communities: page 10 suggests that there is very little diversity in Sharks Cove in “Transect One.” This is not borne out by most other people’s observations. Same comment relative to page 16 suggesting " ... reef fish in general were not overly abundant ...." There is a plethora of data, studies, and reports challenging these unsupported assertions. A base line with no numbers is way too subjective for any meaningful future reference.

“Transect Two” is very much alive as a nursery and at night many creatures come out in abundance. Limu is abundant on the intertidal reef flats. Where is any of this analysis in the faulty marine survey?

“Transects Three, Four, and Five” have abundant fish and limu . Much more life than similar areas outside of the MLCD. None of this was mentioned let alone analyzed in the incomplete marine survey.

Real counts with real numbers should support a marine survey of this importance. Benthic observations are not the whole story. There are fish just below the surface and in the water column. There is so much that is not in this report that one wonders if there was poor visibility on this day. I get the feeling that these observations are a setup for some future observations when there may in fact be less biota to observe.

Although the survey may not have observed any monk seals, there is plenty of documentation available with regard to these endangered species using and being observed in this area. Resting seals at kaula o Maua and within the tide

pools are relatively frequent occurrences. There is lots of food around for them to eat. The Pupukea MLCD is one of the NOAA whale counting sites and they have lots of data available. None of this was included in the lacking marine survey.

"[P]otential impacts to the marine environment can only be considered from activities on the land" fails to mention that the proposed development will be sending their customers across the street to enjoy the Pupukea MLCD and the Pupukea Beach Park. *See* page 12. These people do impact the MLCD. They increase erosion with foot traffic, walk of the living reef, walk on the limu covered reef flats, some feed the fish, and some net the fish in the tide pool. The project human use currently has impacts on the biota and with more people from the development there will be more stressors – assuming that ocean recreation continues to be one of the products that the development features.

For the reasons discussed in detail above, I believe that the DEIS fails to meet legal requirements and does so in such a way that the failures cannot be remedied through the issuance of a final EIS. Accordingly, I believe that the document must be thoroughly revised and reissued as a draft for further public review and comment.

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Bob Leinau
Email: leinaur001@hawaii.rr.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Leinau:

Thank you for your comment letter dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *Impacts Not Adequately Assessed In DEIS. Stewardship of the Pupukea Marine Life Conservation District and whole North Shore is an ongoing need. How does this proposed development benefit the surrounding public assets and amenities? How will this project be compatible with the goals and objective of the Coastal Zone Management area in which it is located? Since the probability of negative impacts to the natural environment and human environment are high, there should be some stipulated, unconditional, positive offsets. How will this development offset the loss of available public park-user parking that is taken up by the development customers? Due, in part to existing development on the property and Foodland's customers, it is not uncommon for there to be no parking left along Kamehameha Hwy and the frontage road for local people and visitors alike to enjoy the public beach park.*

RESPONSE: *Table 4-3* in Chapter 4 of the EIS describes the project's compliance with the State Coastal Zone Management (Hawaiʻi Revised Statues Chapter 205A) and *Table 4-4* addresses the review guidelines for City Council when considering proposals in the City and County of Honolulu Special Management Area per Revised Ordinances of Honolulu (ROH) 25-3.2. The members of the Honolulu City Council will be tasked with gauging the potential benefits for the community versus risks in light of the City's SMA ordinance.

Parking has long been an issue at Pūpūkea Beach Park. The 2015 *Pūpūkea Beach Park Master Plan* states: "The City recognizes that demand for shoreline parks may exceed their capacity at times. For parks, capacity is often limited by the availability of parking, although the perception of 'crowdedness' may impact user experience and discourage use." One of the key planning implications of the Master Plan's Resource Use section is: "The current levels of use seems to be hovering at the balance point between satisfying demand for shoreline recreation and becoming overused and thus impacting user experience and natural resources. Access to the Park (i.e., parking availability) should be maintained as is."

Correspondence with the City Parks Department indicated no concerns to the future effects of the rural center on parks facilities and recreational resources (see EIS Chapter

6 *Agencies and Parties Consulted)*. The Parks Department cited the project's provisions for on-site parking per City LUO requirements.

Comment: *What will the developer do if and when this area becomes a significant traffic slowdown node [similar to Laniakea or the commercial areas in Haleiwa with inadequate parking]? More parking is critical! If the past is any indicator of the future this area will be a traffic nightmare in the years to come. It should be scaled back or retail operations that succeed on low traffic turnover should be the focus.*

A clear understanding of the dynamics associated with people flow between the Hanapohaku development and the very popular Pupukea City Park, the Pupukea Marine Life Conservation District, and the Ke Ala Pupukea Bike Path is critical to understanding what the positive and negative impacts will be from both the developers point of view and the public assets users and the general community at large. There are serious concerns about several significant negative impacts related to the environment, general public usage of this area and its adjacencies.

Response: The Sunset Beach and Pūpūkea communities actively participated with the residents of the North Shore in establishing the Pūpūkea Rural Community Commercial Center in the North Shore Sustainable Communities Plan. With this backdrop, the community has also witnessed growth in North Shore highway traffic and beach park demands. With the improvements planned for the rural center now coming to life, it requires a balanced plan which meet the requirements of the City's Land Use Ordinance for allowed commercial uses. Measures to support traffic flow are being integrated in the plans in coordination with the State and City transportation agencies. Environmental concerns must be addressed through the implementation of low impact development measures on the property. The owners acknowledge the issues of high levels of use at the City beach park and look forward to coordinating with the City and the community to manage the respective landowner operations to best accommodate future conditions.

Comment: *Loss of currently available public parking spaces is one of major concern. Specifically, how many of the existing parking spaces will be lost due to new parking signage, restrictions and/or restriping? A diagram showing these lost spaces would be appropriate. How many of the public parking spaces for beach park users will be lost to employees of the development? How many of the new development customers will utilize beach park parking spaces rendering them unavailable to beach park users? These real negative impacts must be considered and accounted for. Furthermore, on busy summer days there are already no parking spaces in the general area. One must drive several hundred yards beyond Sharks Cove in the North direction. Will Park users be allowed to park at the new development or in Foodland's parking lot as they are allowed to do today? If not, that factors into more lost parking stalls for Park users due to this project. What is the potential total number of parking stall spaces to be lost to the general public that only wanted to go to the Park?*

Response: Parking for the rural center must meet the requirements of the City's Land Use Ordinance for the planned commercial uses. There is a plan to manage the parking spaces at the new rural center, to avoid non-patron parking for beach park access. It is anticipated that some beach users will patronize the rural center, but the owners have no ability to manage these users. For pedestrians crossing this highway in either direction, the Sunset

Beach residents and State DOT have stated that the possible installation of a highway crosswalk at Pahoe Road could help future pedestrian safety.

Comment: *The Transportation Impact Analysis Report shows a parking diagram on page 8 that is very different from the artistic renderings. The open space turned into parking stalls. Also this parking lay out shows parking stalls on top of the Foodland leach field where there is currently no parking. Was this area engineered to accommodate the traffic/parking load that the diagram on page 8 shows?*

Response: The parking diagram for the Rural Community Commercial Center has been updated and is included as *Figure 3-8* in the Final EIS. The new diagram is used in the revised Transportation Impact Analysis Report (TIAR). The parking lot will be appropriately engineered to allow parking on leach field areas, with access available for maintenance of the systems.

Comment: *The DEIS has no parking stalls or areas designed for tour buses – which currently disgorge customers onto the property in the summer months to enjoy snorkeling at the Pupukea MLCD? Where is any analysis on current or future tour bus planning or future impacts?*

Response: No bus parking spaces have been, or will be, provided on the site.

Comment: *On page 18 [near the bottom] there is reference to "no parking" signs which imply that there is no parking on the makai side of Kamehameha Hwy. This is not true. It is legal and regularly used for parking on busy days. The no parking signs are for the mauka side of the parallel frontage road between the Park and Kamehameha Hwy. This one-way frontage road is important for safety response. Parking is a big deal, especially for police, fire, and lifeguard safety and rescue response times.*

Response: The reference in the TIAR regarding parking on the makai side has been corrected. According to the HDOT, parking along the shoulder of the State highway is not allowed as a matter of policy. However, this policy may not be enforced at this rural location.

Comment: *Parking on the makai side of Kamehameha Hwy is a valuable parking area and any realignment and/or restriping of Kamehameha Hwy should not reduce the number of parking stalls currently located.*

Response: The highway restriping and the addition of asphalt pavement on the mauka side will not eliminate the grass shoulder where cars currently park on the makai side.

Comment: *Note page 42 regarding parking of cars immediately adjacent to Pahoe Road. More information needs to be provided about this statement. The study needs real numbers. Please note the law that requires a significant distance between an intersection and where a car may park.*

Response: Please refer to our response to your first comment. Additionally, Section 8.3 of the TIAR has been reworded. Aside from satisfying the LUO requirements for the

properties, no separate study or estimate of adjacent parking is required. We acknowledge your advisory of parking prohibitions near an intersection.

Comment: *Existing parking is a wholly inadequate exploration of a very serious concern. Real numbers clearly delineated on a map would be meaningful showing all of the available parking on the property and the parking stalls that service the adjacent Pupukea Park, Sharks Cove, Kamehameha Hwy., and frontage road. It is all related and a true cumulative impact analysis must be completed. A before and after would be appropriate along with a projection for the future.*

Response: Delineation of the parking spaces and pedestrian provisions for the project are shown on *Figure 3-8* in the Final EIS. The number of parking spaces created for the rural center fulfill the requirements of the City LUO and are calculated based on gross floor area. One stall per 400 square feet of retail, business, and restaurant space is the applicable requirement for this center. With approximately 34,500 gross square feet, 87 parking spaces are required. The mobile food truck parking requirement for Haleiwa of six stalls per food truck has also been applied to the center to accommodate up to six food trucks (an additional 36 spaces). The total parking required with six food trucks is 123 spaces; the total parking provided on site is 126 spaces. In addition, the restriping of the Foodland parking lot is anticipated to increase their parking lot capacity by 7 parking spaces.

Comment: *There should be a separate well-defined set aside section accounting for where the employees for Foodland and the new development will park. This accounting should include the parking spaces utilized off of the property as well as its impact on the Park users. When calculations for the number of employees was made was it on a FTE basis? If part-time employees will be hired, then the total number of employees will go up as will the impacts attendant there to.*

Response: The parking meets the City LUO requirements and includes spaces for food truck patronage, as anticipated to be codified by the City Council. At the North Shore Neighborhood Board meeting held on November 28, 2017, one business owner stated that parking concerns can be mitigated with alternatives such as biking and carpooling. He mentioned that he will encourage his employees to find alternative means to getting to work instead of driving. The manager of the rural center will develop a program to encourage employers and employees to minimize the use of onsite parking.

Comment: *General consideration regarding Maintenance: Often developers do not plan in adequate space for facilities support personnel and /or contractors to store their equipment and supplies. Be smart about this space allocation so that your parking lot does not become a container storage eye sore/illegal use.*

Response: We acknowledge your recommendation.

Comment: *The Project Does Not Comply With B-1 Zoning. Since the entire development is defined as being primarily a community commercial area, terms should be specifically defined so that it is clear if, and/or when this criteria [tourists percent verse residents ratio] is exceeded. An agreed upon percentage, expressed over an agreed amount of time might be useful. Also it should be clear what remedies [bureaucratic/ordinance and/or legal] may be*

available to keep this project from morphing into a tourist oriented commercial enterprise that exceeds the primarily local community commercial criteria. How much is too much? A big negative impact is the time, energy, and resources that the community must put into trying to help control a development that operates in noncompliance.

Response: The rural center is being designed to comply with the B-1 Neighborhood Commercial zoning district. EIS *Section 3.10* describes the applicable Honolulu City and County zoning ordinances. The Land Use Ordinance (LUO) General Development Standards, Chapter 21, includes the B-1 Neighborhood Business District zoning parameters for development such as the maximum density floor area ration (FAR) and maximum height. The North Shore SCP was amended to Ordinance Chapter 24, Article 8, providing a vision for future development and to serve as a policy guide with more detailed zoning maps and regulations. The policies and guidelines from the North Shore Sustainable Communities Plan are therefore incorporated into ordinance including:

- Range of Goods & Services to Meet the Needs of Surrounding Residential Communities
- Center attracts <u>Visitors & Residents from Outside the Immediate Community</u>
- Commercial Establishments May Include: Grocery Stores, Sundries Stores, Restaurants, and Other Services and Shops Catering to <u>Residents and Visitors</u>

(emphasis added). These same points are included in EIS Chapter 2. As stated in the EIS *Section 2.4* Proposed Action, the rural center will expand the services and goods available to residents of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors, and add services not otherwise available in the vicinity. The landowner's vision includes creating a place where local businesses can conduct operations to serve the Sunset Beach-Pūpūkea community and its visitors.

The increase in visitor numbers over the past decade State- and island-wide is well documented by multiple sources and are not attributable to a single development. The rural community commercial center will support the same communities as Foodland, and visitors from other communities on O'ahu or from out-of-state that come to see the famed North Shore beaches and snorkel the popular Sharks Cove.

Comment: *Insufficient Traffic Analysis and Mitigation. Traffic congestion is a very real potential problem. Residents do not like to get stuck in traffic nor find that there is no place near to park. The potential for this area becoming a traffic problem needs to be thoroughly explored. Complicating the prognostications are delivery trucks, and peak traffic times at Foodland coinciding with meal times that may be busy at the new proposed development. DEIS needs to explain what the recourses are if the traffic develops a less favorable rating from the State Department of Transportation. How much is too much? What will operations do when the parking lot is full? And, how will this affect the public facilities in the area such as beach park users? Plus being the cause of traffic complications is not only un-neighborly, it can result in very bad PR and negative economic impacts.*

Response: It is acknowledged that the community has witnessed growth in North Shore highway traffic and beach park demands. With the improvements planned for the rural center now coming to life, it requires a balanced plan which meet the requirements of the City's Land Use Ordinance for allowed commercial uses. Measures to support traffic flow

are being integrated in the plans in coordination with the State and City transportation agencies. The EIS notes that the State DOT and the City DPP's Traffic Review Branch (TRB) define a significant intersection impact when operation of an intersection changes from LOS D or better to LOS E or F. *Table 3-4* shows the current and projected service level for the area with the project; there is no projection of LOS E or F.

Comment: *Noted that this Traffic study is predicated on permission from the state DOT for improvements – permits for which have not been granted. At what point will changes on property invalidate this Traffic study requiring a new current one?*

Response: Both HDOT and City DPP-TRB and City DTS have been consulted and will continue to be engaged throughout the permitting process. Comment letters received from the agencies can be found in *Chapter 6* of the Final EIS. The TIAR utilizes standard analysis methodology based on approved models for predicting traffic flow.

Comment: *On page 6 the Traffic Analysis assumes that there may be "four to six food trucks." Other parts of the DIES mention a higher number of trucks such as 8. Did the Traffic Analysis only consider a maximum of 6 trucks? More trucks equals greater impacts, yet this not considered in DEIS analysis.*

Response: The Final EIS has clarified that up to six mobile food trucks may be on site at any one time. Refer to *Figure 2-6*, which was updated for the Final EIS. The associated impacts related to traffic are discussed in Final EIS *Section 3.13 and Appendix F.* The associated impacts related to wastewater are discussed in Final EIS *Section 3.16.2*:

> DOH WWB requires regular monitoring and reporting to demonstrate system performance. In the case of infrequent special events with larger gatherings, the increased wastewater load would be supported with portable toilets and hand-washing stations. Mobile food trucks may be among the tenant mix periodically using the central gathering space. While in practice the number may be much lower, the wastewater ~~and parking~~ capacity ~~are~~ is sized to support ~~up to eight mobile food trucks,~~ the~~ir~~ patrons~~,~~ and employees of the center, including up to six mobile food trucks. The food trucks will be fully mobile and compliant with DOH and DPP regulations. The trucks will not be connected to, nor utilize, the on-site wastewater system. Per current DOH rules, food trucks are required to have liquid wastes removed at an approved waste servicing area or by a licensed commercial pumping contractor.

Comment: *The Traffic Analysis, due to its narrow scope of data collection, may not be an accurate assessment due to the strong seasonal shifts. From an inconvenience perspective the Traffic Analysis should address what the traffic impacts are on peak days [i.e. what might the three busiest days of the year look like?] The assumption that the traffic may have been busier on a day when there was a surf contest in Haleiwa may well be a false conclusion [page 21] as many cars would have stayed in Haleiwa and not come to this specific area.*

Response: The days selected for counts and the use of those counts in the study were intended to provide operations on a typical day during the high-traffic surf season. It was not the intent of the analysis to provide worst-case conditions. A comparison of annual

data from the State DOT for the Joseph P. Leong Bypass west of the project site shows that the variation over the course of the year is not substantial. The November 2016 monthly average daily traffic (ADT) volume is only 1.5% less than (and essentially the same as) the total monthly average. In addition, November is 6% less than the peak month of July, and the next highest month is June – which is higher than November by 3%. Lastly, it is important to note that traffic counts can vary from day-to-day by five (5)% or more depending on the location. Thus, November data is representative of typical conditions in this corridor over 10 to 11 months of the year. Even if a worst-case evaluation was completed based on this information (which is not typical), a 3% to 6% change in the traffic volumes used in the analysis would not result in any significant change to the identified impacts or proposed mitigation.

Comment: *Lack of Analysis on Pedestrian and Bicycle Impacts. A clear study of pedestrian mobility during the summer months when it is the highest would give a much more accurate picture of the developments impacts.*

Regarding Pedestrian and Bicycle Circulation: the frontage of the property along Kamehameha Hwy should be designed to accommodate and incorporate a "Bike Path" 10 feet wide. See page 17. The current project has rented bicycles in the past and well may in the future. Cars, people, and bicycles all moving around in high numbers needs space in order to provide an appropriate amount of safety. Note many of the employees we have been told will be commuting to work on a bicycle. Landscaped barriers should be well defined.

Note that when addressing pedestrian crossings in should incorporate anywhere along the length of Kamehameha Hwy from the traffic light to Pahoe Road, and not just at specific spots. The whole picture should be well understood, now and in the future.

Response: The project has been refined to incorporate a shared-use path (typically six-feet wide) along the project frontage that will extend to the corner of Pūpūkea Road. The designated bike path for the region is on the makai side of the highway and can be accessed by crossing Kamehameha Highway at the existing or proposed crosswalks. A vegetated strip between the curb and the path will deter pedestrians from crossing from the pedestrian path into the highway except at marked locations.

Comment: *Impacts to Beach Park Use. The increase in park recreation utilization due to the proposed project needs to be understood along with what the increased negative impacts would be added to the already busy pedestrian traffic at the Park. Foot traffic erosion is a problem now. This will only increase. The increased erosion causes increases in suspended solids and turbidity counts. The conditions are dangerous after rain has turned the dirt paths into muddy conditions. There will be more utilization of the restroom facilities and therefore more waste stream. And, of course, more trash to pick up and haul away. Increased utilization of the Park also increases the burden of public services provided: the life guards need to patrol this area, the police, the DOCARE and Fire Department and Park staff. These impacts were not properly considered.*

Response: It is unknown if patrons of the rural center will create recreational impacts at the beach park. Parking at the rural center solely for the purposes of beach park access will be prohibited. The existing commercial uses of the project site and Foodland

grocery store currently support the Pūpūkea, Waimea and Kawailoa communities and visitors. Some users of the beach park undoubtedly cross the highway to patronize the commercial offerings at the rural center. Island-wide growth and increasing visitor attention to the North Shore's towns, beaches and mountain trails must be addressed on a multitude of levels that includes City, State and non-profit organizations.

Comment: *Incomplete Wastewater Analysis. Increased utilization by the customers of the new development will generate both more impact on the park restroom and increase in the liquid flow of treated wastewater in the ground water to the ocean from the Projects own facilities. Pollution can take many forms. A clear understanding of what is not removed from the wastewater that goes into the proposed leach field should be clearly stated. Removal or reduction of pathogens is one thing but it does not address the many chemicals that are also in the waste stream. Often a single chemical in minute concentration will be highly toxic to certain types of marine life [toxic effects in some species occur at 1 nano-gram per liter of water, a quote from Wikipedia regarding TBT]. What other chemicals end up in the water? What might the negative impacts be to coral, limu, and other animals that were not addressed adequately in the DEIS marine survey report?*

Response: The rural center is located next to the Foodland grocery across the Kamehameha Highway about 500 feet at its closest point. Given the North Shore community's high sensitivity to protecting ocean water quality, the project team has been especially thorough in its planning for the project's drainage system, and measures for surface water quality protection and wastewater management. There is an existing setting of over 500 cesspools and septic systems serving residences in the subarea which discharges in excess of 100,000 gpd into the shallow groundwater in the Sharks Cove area. These existing contributors produce a substantial nutrient load to nearshore waters, and may also input some chemicals.

Utilizing the most current technical approach to aerobic wastewater treatment and ground disposal, the rural center will represent a model approach to sensitive environmental planning and design. Nutrients and pathogens will be removed with much greater efficacy than those systems currently serving our community. The State Department of Health Wastewater Branch has stated their agreement with the planned approach to wastewater management at the rural center, with future review and approval of the system design and operational plans to be required in the future. The manager of the rural center can institute signage and tenant/employee education as an additional measure to minimize inputs to the system which could pose environmental risks.

Comment: *Insufficient Water Pollution Analysis. Regarding ocean pollution it would be advisable to get the State Department of Health-Clean Water Branch to commit to testing the water on a regular basis in the area where pollution numbers are most likely to reflect contaminated conditions. High utilization to the tide pool area and low flushing rates in the summer months, and now with a potential increased ground water discharge from the proposed development, strongly suggests the need for official scheduled monitoring and control.*

Response: The EIS (*Section 3.7.1*) describes the Federal BEACH program and its implementation by the State Department of Health Clean Water Branch (CWB). Pūpūkea

Sharks Cove is not identified as a Tier 1 or Tier 2 beach by CWB and is not routinely monitored by CWB. Citizen advocacy may help persuade CWB to include the area in its monitoring, but funding limitations are generally an overriding factor in CWB's ability to fulfill its mission.

Comment: *Wastewater Treatment Issues. One of the things that could go wrong with the proposed system is if, at peak times, the volume of the waste stream exceeds the design capacity. This could be a problem on the front end and it could be a problem if there is not enough detention time prior to seepage. Another problem could be if the electricity stops, how will the pumps move the waste water uphill? Will there be a backup generator? How large are the holding /pre-loader tanks and if/when clogging happens, to where will the waste stream flow?*

Response: The preliminary design of the wastewater system is described in the EIS Chapter 3 Infrastructure and Utilities (*Section 3.16.2*). Please note that the Final EIS has a refined design flow number.

> Wastewater design flow for the rural center was based on guidance from the DOH Appendix D, HAR §11-62 (Wastewater Systems). System design includes accessible bathrooms for patrons and employees of the retail, office, and restaurant operations, as well as capacity for transient demand such as employees and customers of mobile food establishments. The design flow is estimated to be ~~10,533~~ 10,900 gpd based on projected uses (*Appendix H*). There will be no industrial wastewater generated or discharged by tenants. Note that the system design size is conservative to ensure adequate capacity; the estimated wastewater flow is anticipated to be less (*Section 3.6*).

As also stated in the EIS, the absorption bed area will be sized at double the design flow to provide for full redundancy of the effluent disposal capacity. In the case of infrequent special events with larger gatherings, the increased wastewater load would be supported with portable toilets and hand-washing stations. Emergency back-up generator power will be available to operate the pump system if needed due to a power outage.

The State DOH Wastewater Branch (WWB) will review and approve the final design and system to be installed. DOH WWB requires regular monitoring and reporting to demonstrate system performance.

Comment: *Regarding the treated wastewater discharge that finds its way into the water table and ultimately flows into the ocean: The test wells show that there are nitrates and phosphates, but what else is in the ground water now that could be detrimental to the environment at/in the Pupukea MLCD?*

Response: The ground water sampling for the project was specific to the potential impact of nutrients from a wastewater system. This sensitive coastal environment is affected by human waste inputs. There are over 500 onsite wastewater disposal systems (cesspool and septic systems) directly upgradient of the project site; these existing residential wastewater systems release a wastewater volume in excess of 100,000 gpd into the groundwater, all of which ultimately reaches the ocean.

The rural center will have a low volume and high quality on-site wastewater treatment system employing ground disposal demonstrating the highest level of sensitivity to this important concern of protecting nearshore water quality.

Comment: *Regarding the calculated rate of discharge of the ground water: are there seasonal fluctuations and what might be the nature of those fluctuations? Given that the pollutants flowing into the ocean get diluted rapidly losing some of the chemical impact, how would one best numerically describe the difference between a discharge into the shallow tide pool system across the street from the project with diminished currents and dilution potential as compared to a standard beach seepage area? What would be the environmental impacts associated with this differential?*

Response: The aquifer's total groundwater flow rate is 50 MGD, equivalent to 5.5 MGD per coastal mile (see *Appendix H*). At the coastline, groundwater from the site will impact at least 760 feet along the shoreline due to lateral dispersion (EIS *Section 3.5.2*). The best way to depict the changes in groundwater discharging at the shoreline as a result of activities on land is by a mixing line analysis. When looking at the impact on marine water quality, comparison of the curves produced by the distribution of data with conservative mixing lines provides an indication of the origin and fate of the material in question. If the parameter in question displays purely conservative behavior (i.e., no input or removal from any process other than physical mixing), data points should fall on, or near, the conservative mixing line. If, however, external material is added to the system through processes such as leaching of fertilizer nutrients to groundwater, data points will fall above the mixing line. If material is being removed from the system by processes such as biological uptake, data points will fall below the mixing line.

The mixing lines show plots of TN and TP as functions of distance from shore (EIS Figure 2 of Appendix C) reveal that within 5 m of the shoreline, the concentrations of all nutrients drops from the peak values at the shoreline to essentially constant open coastal ocean values across the rest of the reef tract. These steep declines are the result of rapid mixing and dilution of the relatively small amount of groundwater discharging at the shoreline with large volumes of coastal ocean water. The small increases in groundwater nutrient concentrations attributable to the project would be mixed to background ocean levels in a narrow zone near the shoreline that is essentially devoid of benthic biota owing to other physical factors, primarily wave energy (EIS Appendix C).

These conclusions indicate that the proposed Pūpūkea Rural Community Commercial Center will not have a measurable effect on water quality in the coastal ocean offshore of the project. Such projected increases would not alter the existing situation with respect to compliance with area specific DOH limits. This is particularly true in the region of Transect 2 (Sharks Cove), where presently there are groundwater nitrogen subsidies from land on the order of 100% over background conditions.

Comment: *What assurance does the public have that the developers will employ BMP procedures that will reduce pollutants of concern including sediment, nutrients, trash, pathogens, pesticides, oil, grease, hazardous/toxic waste, metals and organic compounds? Who enforces this subject matter?*

Response: Best Management Practices (BMPs) are employed in the construction phase to minimize soil erosion and suspended sediment in runoff. Long term site water quality BMPs are part of an overall management plan, which includes an engineered system of low impact development features such as rain gardens and bioswales. The operation of these features is conducted by the manager of the rural center, with regular inspection by their site management team and environmental engineer.

Comment: *Note page 3-19 refers to a retention capacity of 4 inches – per what unit of time? No analysis of how holding capacity can be affected by the variable nature of recent rain events.*

Response: EIS Section 3.16 and Appendix H address drainage and stormwater management. design of the rural center's drainage system is required to meet drainage standards of the City and County of Honolulu. The predicted 2-year 24-hour rainfall event produces 4.8 inches (EIS Table 3-5). Based on the Rules Relating to Storm Drainage Standards dated January 2017 by the City and County DPP, sizing for the sub-surface infiltration chamber has been calculated to capture the 10-year, 1-hour recurrence storm with a maximum capacity of 26,600 cubic feet. Storm water that may leave the site will be slowed to the pre-project flow rate, with sediment and pollutants removed to the maximum extent practicable.

Comment: *Regarding water demand: Are the projections of usage, including the food trucks and the increases they will make, in restroom utilization? And, are the projections designed to accommodate projected maximum peak customer days [three busiest days of the year for example]?*

Response: Water demand for the rural center is calculated for average daily demand and peak demands, based on the standards set by the Honolulu Board of Water Supply. It is recognized that there will be peak demand periods and the water and wastewater systems are sized to accommodate these peak periods. As a contingency measure, the State DOH requires that the wastewater system is designed to provide for proper treatment and disposal with capacity of twice the average daily demand.

Comment: *Increased Tourism Associated with the Project Not Assessed. It is likely that the proprietors of the new development will be advertising the amenities in this area including the Pupukea MLCD and that the increased number of customers may well be arriving on buses. What provisions are made to accommodate this type of volume of visitors. Hanauma Bay requires an orientation. Commercial operators have an obligation to inform their customers about risks, do's and don'ts that affect a MLCD along with the significant risks associated with the ocean along this stretch of coastline.*

Response: The owners and manager of the rural center are very interested in supporting a healthy Marine Life Conservation District. Environmental education can be integrated with the rural center to advise both residents and visitors about the sensitive resources of the nearshore area, and ways they can help to preserve and protect its health and future.

Comment: *Impacts of Food Trucks not Adequately Assessed. When one looks at the significant impacts associated with the food trucks that have operated on the property since*

Hanapohaku took possession of the land, it is apparent that this business activity should not be considered an optional/if/ afterthought /maybe. The figure 2-6 is not an adequate representation of what might come to pass if the food truck business is exercised. The "open green space" that the developer likes to talk about could very well, to a large extent, be used up due to this option. One can only imagine what that might look like if the past is any prediction of the future. A square foot allocation and a map with some realistic outlines reflecting the size and spacing would be appropriate. The food truck option needs to be addressed, incorporated, and honestly analyzed by the full plans so that all of the fixed assets, building code requirements are made clear and applicable, related to parking, size of trucks/foot print, covered seating [which it should be ... temporary tents are generally not temporary], rest rooms, electricity, water, waste water handling, gas, generators, frequency of mobilization, vehicular traffic, etc. The cumulative/total impacts need to be assessed of both the fixed building businesses and the mobile food truck businesses. A clear reference to the City and State codes that they will be operating under needs to be understood and enforced. There has been "confusion" regarding compliance in the past.

Response: Past violations have been cleared by Hanapohaku, and currently the project site is completing improvements allowed under the SMA Minor Permit. For the rural community commercial center, the current uses on the property will be completely removed. Food truck operations will be very organized at the new rural center, as described in the Final EIS, which includes an update to *Figure 2-6* showing mobile food truck locations. There will dedicated locations with proper spacing for food truck operations and associated activities, tied into the open central green which serves as a gathering place along with adjoining walkways and landscape. Water supply and electricity will be provided directly to these sites, with no wastewater connections. Individual power generator use will not be allowed. Parking spaces are allocated in the overall parking plan for the rural center. Section 2.4 of the EIS describes that ". . . vehicle access can periodically be blocked <u>from the hardscaped area adjacent to</u> the central green to allow for periodic pedestrian-friendly community gatherings . . ." (emphasis added).

Comment: *The Marine Survey is Defective and Must be Redone. Assessment of Marine Water Chemistry is insufficient. Selection of the "Transect five" as a control was improper as there are several factors that make this an atypical site. This area has a considerable amount of ground water discharges.*

The up gradient for this area is high density housing including the Back Packers facility which I'm told can accommodate 125 guests. This area is also downstream/current from all of the previous transects. Most of the time the trade winds drive the current toward Haleiwa. Being just downstream from the major storm drain [transect 4] from Pupukea is a significant factor. Frequently, after a rain, this drainage creates a significant brown plume. If the control transect were to the North of Sharks Cove the results would likely be a significantly different set of numbers ... cleaner. Why was a control site chosen that in all probability would reflect less clean water now and in the future?

Further as it's related to the water sampling, what would be the average and mean be if more samples were taken in different seasons and weather conditions? I suspect that the variability might be considerable. It is known that coliform bacteria fluctuate wildly after storm water events. There was no rain or drainage occurring the one-day water samples were taken.

Regarding the ocean biotic communities: page 10 suggests that there is very little diversity in Sharks Cove in "Transect One." This is not borne out by most other people's observations. Same comment relative to page 16 suggesting " ... reef fish in general were not overly abundant ...." There is a plethora of data, studies, and reports challenging these unsupported assertions. A base line with no numbers is way too subjective for any meaningful future reference. "Transect Two" is very much alive as a nursery and at night many creatures come out in abundance. Limu is abundant on the intertidal reef flats. Where is any of this analysis in the faulty marine survey? "Transects Three, Four, and Five" have abundant fish and limu . Much more life than similar areas outside of the MLCD. None of this was mentioned let alone analyzed in the incomplete marine survey.

Real counts with real numbers should support a marine survey of this importance. Benthic observations are not the whole story. There are fish just below the surface and in the water column. There is so much that is not in this report that one wonders if there was poor visibility on this day. I get the feeling that these observations are a setup for some future observations when there may in fact be less biota to observe.

Although the survey may not have observed any monk seals, there is plenty of documentation available with regard to these endangered species using and being observed in this area. Resting seals at kaula o Maua and within the tide pools are relatively frequent occurrences. There is lots of food around for them to eat. The Pupukea MLCD is one of the NOAA whale counting sites and they have lots of data available. None of this was included in the lacking marine survey.

"[P]otential impacts to the marine environment can only be considered from activities on the land" fails to mention that the proposed development will be sending their customers across the street to enjoy the Pupukea MLCD and the Pupukea Beach Park. See page 12. These people do impact the MLCD. They increase erosion with foot traffic, walk of the living reef, walk on the limu covered reef flats, some feed the fish, and some net the fish in the tide pool. The project human use currently has impacts on the biota and with more people from the development there will be more stressors – assuming that ocean recreation continues to be one of the products that the development features.

Response: The marine survey conducted for the EIS represents a proper scientific assessment conducted following proper technical and analytical procedures to assess existing water quality conditions and biota character, with a conservative evaluation of future ocean water quality with the operation of the future rural center. The conclusions of the assessment indicate that the limited material inputs to the nearshore ocean from the project would not be of a detectable magnitude. Thus, if there are no changes to water chemistry, there will be no changes to the marine biotic communities.

The findings published by Dr. Dollar are very similar to the reported information published by Coral Reef Assessment and Monitoring Program conducted by researchers Dr. Paul Jokiel and colleagues at the Hawaii Institute of Marine Biology. http://cramp.wcc.hawaii.edu/LT_Montoring_files/lt_study_sites_Oahu_Pūpūkea.htm

The findings by Dr. Dollar match the information presented relative to the Pūpūkea MLCD in the 2006 study by NOAA. Friedlander, Alan M. and Brown, Eric and Monaco, Mark

E. and Clarke, Athline (2006) *Fish Habitat Utilization Patterns and Evaluation of the Efficacy of Marine Protected Areas in Hawaii: Integration of NOAA Digital Benthic Habitat Mapping and Coral Reef Ecological Studies.* Silver Spring, MD, NOAA/NOS/National Centers for Coastal Ocean Science/Center for Coastal Monitoring and Assessment (NOAA Technical Memorandum NOS NCCOS, 23) http://aquaticcommons.org/2118/

The findings by Dr. Dollar also match the generalized biota information published on the Mālama Pūpūkea Waimea website:
http://Pūpūkeawaimea.org/Pūpūkea-waimea-mcld/biologically-special/

Comment: *For the reasons discussed in detail above, I believe that the DEIS fails to meet legal requirements and does so in such a way that the failures cannot be remedied through the issuance of a final EIS. Accordingly, I believe that the document must be thoroughly revised and reissued as a draft for further public review and comment.*

Response: The owners have taken great strides to engage a qualified professional team to listen closely to the community and design a project which is consistent with the NSSCP policies and objectives for the Rural Community Commercial Center. It is recognized from your comments that the project brings concerns about the scale and type of development. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. We welcome your continued involvement in this planning process, as it is this community's care and attention to good planning that helps to retain the special qualities we all value.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/Alltems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Candes Meijide Gentry <candesmg@hotmail.com>
Sent: Wednesday, January 3, 2018 1:27 PM
To: andrew@hanapohakullc.com; Pupukea Rural Community Ctr; ashaw@honolulu.gov
Subject: Sharks cove development

To whom this may concern,
I was born and raised here on Oahu and have always spent a considerable amount of time on the North Shore. My family owned a home by Alligator rock for over 30 years and my sister and I are now homeowners at sunset beach colony. We love the north shore and are very excited about the prospect of having a respectfully constructed and designed commercial development at sharks cove. The proposed Center will provide much needed services such as an urgent care center and restaurants which this area and its residents could greatly benefit from. As we all know, the traffic has only gotten worse and worse over the years and I am hopeful that additional services such as those proposed by the sharks cove center will help to alleviate some of that traffic and provide much needed amenities not only to the residents of the north shore but also the many tourists that visit our slice of heaven.
Thank you for your time and consideration.
Mahalo, Candes

Aloha
Candes Meijide Gentry, MBA
Choi International, RA
CMG Records
https://na01.safelinks.protection.outlook.com/?url=www.candesitsmytime.com&data=02%7C01%7Cpupukea%40g70.design%7C451dc93efe094261760408d553018405%7C69e712341e9d4d86abde1c80f4dbfcd4%7C1%7C0%7C636506188352366515&sdata=ULSdKrdoAfoRYHMvsAydkBPR%2BrTFrwvClG%2BP00%2FZBuI%3D&reserved=0
https://na01.safelinks.protection.outlook.com/?url=www.candeslovegame.com&data=02%7C01%7Cpupukea%40g70.design%7C451dc93efe094261760408d553018405%7C69e712341e9d4d86abde1c80f4dbfcd4%7C1%7C0%7C636506188352366515&sdata=Pg%2B44ZcVT8Awe02htv0akybqXgZxE16bnH0hn%2F7zIc8%3D&reserved=0

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Candes Meijide Gentry
Email: candesmg@hotmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Meijide Gentry:

Thank you for your email dated January 3, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I was born and raised here on Oahu and have always spent a considerable amount of time on the North Shore. My family owned a home by Alligator rock for over 30 years and my sister and I are now homeowners at sunset beach colony. We love the north shore and are very excited about the prospect of having a respectfully constructed and designed commercial development at sharks cove. The proposed Center will provide much needed services such as an urgent care center and restaurants which this area and its residents could greatly benefit from. As we all know, the traffic has only gotten worse and worse over the years and I am hopeful that additional services such as those proposed by the sharks cove center will help to alleviate some of that traffic and provide much needed amenities not only to the residents of the north shore but also the many tourists that visit our slice of heaven.*

Response: We appreciate that you made the time to voice your support for the proposed rural community commercial center at Pūpūkea. The owners are committed to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

ARCHITECTURE // CIVIL ENGINEERING // INTERIOR DESIGN // PLANNING & ENVIRONMENT

January 3, 2018

SUJECT: Hanapohaku DEIS - Pupukea Rural Community Commercial Center

Aloha Sir(s),

The following are some of my comments and concerns in the Hanapohaku LLC DEIS.

In the water use and waste water sections it says average water use will be 8160gpd and max of 12240 gpd. Most of this might be waste of some sort and the design flow for waste is 10533 gpd. Seems to be cutting it short. The DEIS takes privilage to compare the development to 15 homes with 4 people per home and Mr. Overton pointed to and used Pupukea as the comparison. Those are acre lots and so the comparison is 15 acres to 3 acres. Four people per home equals 60 people yet the developer is saying this will employ 80 to 90 people and then there are hundreds of potential customers each day. I don't see how this is a good nor fair comparison. CAN YOU BE MORE REALISTIC?

We were told the bathroom use would most likely be controlled with a key by vendors. That is a lot of power at a location like this as we all know since septic and bathroom access has been a main issues for some time now. Will it be "No Public Bathrooms" like Foodland ? Will each lunch truck have a key? What are the plans for bathrooms and their use by all of the people this project hopes to attract?

How is traffic calculated…by the day or hour? Were the estimates done in 2004 and being used here 13 years later?

Is Foodland or will Foodland be added to the conditional use permit so that all 4 lots are treated as one zoning unit? The community has not heard from 'Foodland' ie The Sullivan Family regarding this development and the various changes indicated on the parcel they own. **If and when will the community get to meet and discuss their position in all of this?** After all they have been a fixture on the property for many years and used to send the store manager to SBCA meetings to address negative impacts residents were expressing. Delivery trucks and septic overflow and smell have been issues residents remember.

The single consolidated access/exit driveway with a nearby bus stop has great potential for traffic stops and delays greater than the .9 seconds in the DEIS. The length and location of the two-way left turn lane might look like the easy way out for the developer but this is going to be an obstacle course for residents and visitors

alike. One only has to watch how the Foodland access points work with a single left turn lane. Why can't Foodland keep its present entrance and possibly give up the exit? How wide is the proposed 1 entry / 2 exit access? How wide is Kamehameha Hwy right of way? I'm not sure those drawings are to scale. There are questions as to how the turn lane will fit and work in this section not to mention trying to control pedestrians crossing randomly like they do now.

The DEIS states that they are required to put in 75 parking stalls but Mr. Overton brags that they are putting in 125. They also mention allowing 8 lunch wagons to operate which also are required to have parking. If 8 trucks need 6 spaces each that is 48 spaces and that added to the 75 equals 123. WHAT'S REALLY BEING SAID? There is no mention of how many spaces are handicap and EV. Just say what it really is and keep in mind that like Haleiwa and Foodland, the employees use a lot of the parking even if some walk or bike. With all the employment being offered according to Mr. Overton one could estimate 1/3 spaces would be used by employees. Foodland can't manage beach use parking on their property. What are the plans for who uses the parking?

The timing of deliveries and refuse service should be clearly addressed. At present those services affiliated with the Foodland have lowered the quality of life for neighbors and community due to early morning noise and traffic stops caused by trucks blocking Pupukea Rd. HOW WILL THIS BE ADDRESSED?

Night lighting and noise after the sun sets will also be a big factor for community and neighbors to deal with? There have been evenings when I drive by and it has looked like EK Fernandez has set up a mid-way. How will these concerns be addressed?

With the alternative of a 45,000 sf to 50,000 sf commercial shopping center mentioned in Sec.5.2, it seems possible the developer will go bigger once the approvals are given. G70 has expressed this would be approximately 40% of LUO capacity and provide a wider range of goods and services for patrons. HOW DOES THE COMMUNITY KNOW WHERE THIS IS GOING IF THE DEIS PASSES?

The DEIS has used a thousand words to paint a picture and in the DEIS, G70 has used drawings (pictures) to express a thousand words. They are stated to be conceptual but why can't they be more realistic. For example figure 2-4 shows 29 coconut palms and almost all are as tall as the buildings with a few much higher. In figure 2-5 Kamehameha Hwy is lined with coconut trees. Figure 2-3 shows palms in front of Foodland and figure 2-4 shows the 4 trees that are there now. Is there a landscape plan in place or is the artist making this project look more appealing with all the trees and greenery? I think much of it is just art. Foodland had hedges, nice grass, and even trees in the parking lot but very little of that survives today for a variety of reasons. The community still has to view a large parking lot and store because Foodland finds it more important to be seen than blend in behind thicker roadside landscaping.

The conceptual idea is used with how the lunch trucks appear. Except for one truck shown in figure 2-5, the other drawings show what appear to be a few cars or pickup trucks parked with one or two people talking story. Where are the trucks, people, tables, umbrellas and lights at night?

Hanapohaku LLC does not have a good track record with everything associated to this property. Mr. Overton and G70 have been trying to massage most of the problems but misrepresentations and false statements and inaction have continued to plague Hanapohaku.

It is interesting how this project is being referred to as –Rural –Community – Commercial – Center. Yes most of us feel we are rural and like it that way. We have a nice community center, which G70 helped design, right down the road. The commercial centers for Paumalu (Sunset Beach), Pupukea and Kawailoa are Haleiwa / Waialua as well as Laie / Kahuku and should remain that way. Haleiwa has become a tough place to navigate with all of the autos, bused in tourists and pedestrians which are drawn in part to the new KS project of stores. This Commercial Center being planned is not going to make our rural community better and I fear just the opposite….another crowded spot in the road where life slows down but not in the rural kind of way. This development will take away much of the rural character of our area and negatively impact the lives of our residents and visitors (although most visitors don't realize it at the time).

Mahalo for the opportunity to comment on and question some of the points in this DEIS.

Chip Hartman

59-208 Kamehameha Hwy., Apt B

Haleiwa, Hawaii 96712

seachip@yahoo.com PH: 638-7210

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Chip Hartman
59-208 B Kamehameha Hwy.
Haleiwa, HI 96712-8625
Email: seachip@yahoo.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Hartman:

Thank you for your comment letter dated January 3, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *The following are some of my comments and concerns in the Hanapohaku LLC DEIS. In the water use and waste water sections it says average water use will be 8160gpd and max of 12240 gpd. Most of this might be waste of some sort and the design flow for waste is 10533 gpd. Seems to be cutting it short. The DEIS takes privilage* [sic] *to compare the development to 15 homes with 4 people per home and Mr. Overton pointed to and used Pupukea as the comparison. Those are acre lots and so the comparison is 15 acres to 3 acres. Four people per home equals 60 people yet the developer is saying this will employ 80 to 90 people and then there are hundreds of potential customers each day. I don't see how this is a good nor fair comparison. Can you be more realistic?*

Response: The calculation of design flows and disposal system sizing are based on conservative requirements of the State DOH standards. The higher numbers represent the design capacity requirement as provided in Hawai'i Administrative Rules §11-62 (Wastewater Systems), versus the anticipated water use and wastewater output. Technical specification of the system must be reviewed and approved by the Department of Health (Section 3.16.2). The number of employees on site will not be the same as the jobs created by the center. *Section 3.11.2* has been updated to note the long-term jobs to be created will be 80 (versus 86 in the Draft EIS). Regardless, fewer employees will be on site at any one time.

Comment: *We were told the bathroom use would most likely be controlled with a key by vendors. That is a lot of power at a location like this as we all know since septic and bathroom access has been a main issues for some time now. Will it be "No Public Bathrooms" like Foodland ? Will each lunch truck have a key? What are the plans for bathrooms and their use by all of the people this project hopes to attract?*

Response: As noted in the response to the previous comment, the wastewater system capacity provides an allotment for transient demand such as employees and customers of mobile food establishments. Visitors to the center and patrons of the food trucks will be allowed to utilize the bathrooms.

Comment: *How is traffic calculated by the day or hour? Were the estimates done in 2004 and being used here 13 years later?*

Response: A transportation impact analysis was conducted for the project as presented in the EIS. Traffic counts were recorded during the analysis; the data is included in the Transportation Impact Assessment Report (TIAR) included as *Appendix F* and summarized in EIS *Section 3.13*. The report addresses existing traffic conditions and future traffic conditions for the rural center.

Comment: *Is Foodland or will Foodland be added to the conditional use permit so that all 4 lots are treated as one zoning unit? - Additional Items Of Concern With Foodland: [1] Large Food Delivery trucks accessing rear of store creating traffic obstructions on Pupukea Road; [2] On- going sewage and greywater issues from Foodland store and lack of acceptable mitigation efforts to solve these concerns [3] parking integration concerns based on scheduling of the separate business opening and closing times and sharing parking lot access.*

Response: In compliance with the 1996 development agreement, the redevelopment plans for the Hanapohaku parcels included two proposed connections with the Sullivan Entities land. Depending on improvements at the boundary, a Conditional Use Permit for Joint Development may be required by the Department of Planning and Permitting for the Hanapohaku and Foodland parcels. This potential permit requirement has been added to *Table 1-1* in the Final EIS.

Comment: *The single consolidated access/exit driveway with a nearby bus stop has great potential for traffic stops and delays greater than the .9 seconds in the DEIS. The length and location of the two-way left turn lane might look like the easy way out for the developer but this is going to be an obstacle course for residents and visitors alike. One only has to watch how the Foodland access points work with a single left turn lane. Why can't Foodland keep its present entrance and possibly give up the exit? How wide is the proposed 1 entry / 2 exit access? How wide is Kamehameha Hwy right of way? There are questions as to how the turn lane will fit and work in this section not to mention trying to control pedestrians crossing randomly like they do now.*

Response: Based on the current DOT standards and traffic engineering practice, the existing Foodland driveways on Kamehameha Highway are located too close to the Pūpūkea Road intersection; this information has been incorporated into *Section 3.13.1* of the Final EIS. By closing the driveways and consolidating traffic to one new driveway on the highway, turning movements will occur at more of a midblock location between Pāhoe and Pūpūkea roads. The addition of a center-two way left-turn lane will provide additional capacity and storage for traffic in this corridor, expediting flow and enhancing safety for vehicles.

High visibility pedestrian crosswalks are proposed for the pedestrian path to be installed at the project frontage along Kamehameha Highway and for on-site pedestrian safety. See *Section 3.13.2* and *Figure 3-8* of the Final EIS.

Comment: *The DEIS states that they are required to put in 75 parking stalls but Mr. Overton brags that they are putting in 125. They also mention allowing 8 lunch wagons to operate which also are required to have parking. If 8 trucks need 6 spaces each that is 48 spaces and that added to the 75 equals 123. What's really being said? There is no mention of how many spaces are handicap and EV. Just say what it really is and keep in mind that like Haleiwa and Foodland, the employees use a lot of the parking even if some walk or bike. With all the employment being offered according to Mr. Overton one could estimate 1/3 spaces would be used by employees. Foodland can't manage beach use parking on their property. What are the plans for who uses the parking?*

Response: Parking and loading standards are set by the City's Department of Planning and Permitting and are intended to minimize street congestion and traffic hazards, and to provide safe and convenient access to locations including residences and businesses. The parking requirements are documented in the Land Use Ordinance (ROH Chapter 21). The number of parking stalls are calculated based on gross floor area (approximately 34,500 square feet), requiring one stall per 400 square feet of retail, business, and restaurant space (applicable to this center).

The requirement for the proposed center is 87 parking stalls. The requirement for parking associated with mobile food trucks in designated areas of the Haleʻiwa Special District is six parking stalls per mobile food truck. This ratio is anticipated to be codified in the LUO outside of the Haleʻiwa Special District and is being applied to the project. With a total of 126 parking stalls enabled by the design, 6 mobile food trucks can be accommodated with the required 36 total stalls.

As noted in your comment, the commercial properties activities on the mauka side of the highway already exist and are burdened by the overflow of vehicles associated with park users. Parking for the private businesses will be managed at the rural center, including Foodland Pūpūkea, to restrict people from parking vehicles solely for beach park access.

Comment: *The timing of deliveries and refuse service should be clearly addressed. At present those services affiliated with the Foodland have lowered the quality of life for neighbors and community due to early morning noise and traffic stops caused by trucks blocking Pupukea Rd.*

Response: The following sentence has been added to *Section 3.13.2* of the Final EIS: To minimize delays caused by trucks accessing Foodland's loading dock, deliveries should be scheduled during off-peak times in the early afternoon.

Comment: *With the alternative of a 45,000 sf to 50,000 sf commercial shopping center mentioned in Sec.5.2, it seems possible the developer will go bigger once the approvals are given. G70 has expressed this would be approximately 40% of LUO capacity and provide a wider range of goods and services for patrons. How does the community know where this is going if the DEIS passes?*

Response: The EIS is a disclosure document. To comply with the content requirements under Hawaiʻi Revised Statutes (HRS) Chapter 343 and its implementing rules Chapter §11-

200 Environmental Impact Statement, alternatives to the Proposed Action must be analyzed. The Proposed Action as stated in *Section 2.4* of the EIS document is the preferred alternative of the landowner: the rural community commercial center with approximately 28,300 square feet of leasable space. Once the EIS process is complete, permits will be secured based that will specify the allowable development.

Comment: *The DEIS has used a thousand words to paint a picture and in the DEIS, G70 has used drawings (pictures) to express a thousand words. They are stated to be conceptual but why can't they be more realistic. For example figure 2-4 shows 29 coconut palms and almost all are as tall as the buildings with a few much higher. In figure 2-5 Kamehameha Hwy is lined with coconut trees. Figure 2-3 shows palms in front of Foodland and figure 2-4 shows the 4 trees that are there now. Is there a landscape plan in place or is the artist making this project look more appealing with all the trees and greenery? I think much of it is just art. Foodland had hedges, nice grass, and even trees in the parking lot but very little of that survives today for a variety of reasons. The community still has to view a large parking lot and store because Foodland finds it more important to be seen than blend in behind thicker roadside landscaping.*

Response: The Conceptual Site Plan (*Figure 2-3*) incorporates the proposed landscape plan and includes palm trees along Kamehameha Highway.

Comment: *The conceptual idea is used with how the lunch trucks appear. Except for one truck shown in figure 2-5, the other drawings show what appear to be a few cars or pickup trucks parked with one or two people talking story. Where are the trucks, people, tables, umbrellas and lights at night?*

Response: The Final EIS includes a revised *Figure 2-6* shows the parking spaces that will be made available to mobile food trucks. The new center will not provide the same type of seating/eating areas as the current site; the Central Green will provide one area for those who opt to eat on-site. Exterior lighting at the rural community commercial center will comply with the objectives and policies of Hawaiʻi Revised Statute Chapter 205A Coastal Zone Management Section71(b), which requires all outdoor lights to be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights. Wall-mounted lights will be pointed down and otherwise shielded, and lights used in open or parking areas will be full cutoff or fully shielded (EIS *Section 3.17.2*).

Comment: *Hanapohaku LLC does not have a good track record with everything associated to this property. Mr. Overton and G70 have been trying to massage most of the problems but misrepresentations and false statements and inaction have continued to plague Hanapohaku.*

Response: The owners have diligently addressed the concerns of the past through the approval of an SMA Minor permit and compliance with its conditions for current operations. Information relating to permit compliance has been updated regularly on the Hanapohaku website (http://mccullyscorner.com/). The owners will continue to have a very open dialogue with the community and will continue to attend regular meetings of the Sunset Beach Community Association. By maintaining this close relationship the owners will be aware of community issues and concerns, particularly those involving the rural center, and appropriately respond to these concerns.

Comment: *It is interesting how this project is being referred to as –Rural –Community – Commercial – Center. Yes most of us feel we are rural and like it that way. We have a nice community center, which G70 helped design, right down the road. The commercial centers for Paumalu (Sunset Beach), Pupukea and Kawailoa are Haleiwa / Waialua as well as Laie / Kahuku and should remain that way. Haleiwa has become a tough place to navigate with all of the autos, bused in tourists and pedestrians which are drawn in part to the new KS project of stores. This Commercial Center being planned is not going to make our rural community better and I fear just the opposite....another crowded spot in the road where life slows down but not in the rural kind of way. This development will take away much of the rural character of our area and negatively impact the lives of our residents and visitors (although most visitors don't realize it at the time).*

Response: Please see *Section 2.3* of the EIS which explains that the North Shore Sustainable Communities Plan designated the parcels as the one "Rural Community Commercial Center" to consolidate commercial uses for the region. The policies and guidelines applicable to the designation are also included in Chapter 2 (*Figure 2-2*).

Mahalo for the opportunity to comment on and question some of the points in this DEIS.

The owners have taken great strides to engage a qualified professional team to listen closely to the community and design a project which is consistent with the NSSCP policies and objectives for the Rural Community Commercial Center. It is recognized from your comments that the project brings concerns about the scale and type of development. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. We welcome your continued involvement in this planning process, as it is this community's care and attention to good planning that helps to retain the special qualities we all value.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/Allltems.aspx. In closing, we thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Dawn Bruns <dawnbbruns@gmail.com>
Sent: Sunday, January 7, 2018 6:29 PM
To: ashaw@honolulu.gov
Cc: Andrew Yani; Pupukea Rural Community Ctr
Subject: Chris and Dawn Bruns, Sunset Beach Residents, Comments on Pupukea Rural Community Commercial Center DEIS

Aloha Ardis Shaw-Kim, Below please find our comments on the 11/2/2017 "Pupukea Rural Community Commercial Center Draft Environmental Impact Statement"

Worsening of Existing Unacceptable Traffic Delays: We notice the current food truck development has resulted in traffic delays: East-bound, traffic backs up when a driver stops in the middle of Kamehameha Highway waiting to turn left into the food truck development because there is no left-turn stacking turn lane. West-bound, in the evening at dinner time (6 – 8 pm), traffic backs up to the entrance to Waimea Valley and it's not possible to get through the Pupukea traffic light without waiting several light cycles because (based on what I see driving by the food truck site) pedestrians are walking across Kamehameha Highway. The EIS's assertion that the additional 1,322 net daily vehicle trips (vs today) and the additional 1.7 second delay (above baseline conditions) "will not significantly impact traffic in the region" is ridiculous in light of the current traffic backups caused by the project already causing us to bear totally unacceptable delays in our vehicular egress through the main arterial road, Kamehameha Highway. The development must not be permitted unless there is a very long left-turn stacking lane installed so west-bound Kamehameha Highway traffic can get through without a backup. In addition, the pedestrian crossing in front of the development site must stop – pedestrians must walk half a block to the existing traffic light with giant existing crosswalk – in front of Foodland and connecting to flat, accessible ground in front of the Fire Station. The pedestrian crosswalk proposed will slow the flow of east-bound traffic at dinner time – when many North Shore residents have just driven an hour and 20 minutes from Honolulu in rush-hour traffic, and we just want to get home. The current delays caused by this food truck lot are totally unacceptable to us. If this project were, indeed, for local residents, all this foot traffic to the ocean side of the highway wouldn't be occurring – this project is clearly primarily to service tourists. We are disappointed the current situation has been allowed to have such a negative effect on our commute through the area and we are very concerned the proposal appears to exacerbate an already unacceptable situation.

Inadequate Sewage Treatment for Adjacent Crucially Important Marine Environment: The EIS states the proposed project is not anticipated to pose adverse impacts to the nearby City and County Park – yet according to their consultant's presentation to Sunset Beach Community Association, they plan to have limited on-site access to restrooms, offering keys to locked restrooms limited to the clients of only a subset of the businesses. Here's a tip – if you don't want us to completely oppose your project, beef up your septic system to handle the existing massive traffic to the site, plus the occupants of the additional 1,322 vehicles that will, primarily, be eating at your food trucks. Lava tubes and porous soil at the site and its proximity to the sensitive marine site make increased sewer treatment of greatest concern to us.

Overflow of chemicals due to cleaning of food trucks: Chemicals used for sanitation of the food trucks that are cleaned on site, and cleaning of the ground to deter flies, introduces contaminants into the marine environment. These food trucks owners have admitted they are permanent structures on the property - they don't go to a home base for evening

refurbishment (which relates to inadequate sewage concerns above, because by permitting these food trucks without requiring their interior and exterior seating area square footage and number of plates served to be included in sewage treatment calculations makes us oppose this project.)

If traffic problems were addressed (with construction of the stacking/turn lane and pedestrians limited to using existing crosswalk at the fire station) and sewage/chemicals were properly addressed (see above), this project would not adversely affect our family. As it currently stands, our sincere hope is that the developer please coordinate with an entity such as the North Shore Community Land Trust to broker a conservation organization's purchase of the lot for conservation purposes – to assure the conservation of the Shark's Cove marine environment and conservation of the functioning of our arterial access road.

Thank you,
Chris and Dawn Bruns, Sunset Beach Residents, Haleiwa, HI 96712

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. & Mrs. Chris and Dawn Bruns
Email: dawnbbruns@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. & Mrs. Bruns:

Thank you for your comment letter dated January 7, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *Worsening of Existing Unacceptable Traffic Delays: We notice the current food truck development has resulted in traffic delays: East-bound, traffic backs up when a driver stops in the middle of Kamehameha Highway waiting to turn left into the food truck development because there is no left-turn stacking turn lane. West-bound, in the evening at dinner time (6 – 8 pm), traffic backs up to the entrance to Waimea Valley and it's not possible to get through the Pupukea traffic light without waiting several light cycles because (based on what I see driving by the food truck site) pedestrians are walking across Kamehameha Highway. The EIS's assertion that the additional 1,322 net daily vehicle trips (vs today) and the additional 1.7 second delay (above baseline conditions) "will not significantly impact traffic in the region" is ridiculous in light of the current traffic backups caused by the project already causing us to bear totally unacceptable delays in our vehicular egress through the main arterial road, Kamehameha Highway. The development must not be permitted unless there is a very long left-turn stacking lane installed so west-bound Kamehameha Highway traffic can get through without a backup. In addition, the pedestrian crossing in front of the development site must stop – pedestrians must walk half a block to the existing traffic light with giant existing crosswalk – in front of Foodland and connecting to flat, accessible ground in front of the Fire Station. The pedestrian crosswalk proposed will slow the flow of east-bound traffic at dinner time – when many North Shore residents have just driven an hour and 20 minutes from Honolulu in rush-hour traffic, and we just want to get home. The current delays caused by this food truck lot are totally unacceptable to us. If this project were, indeed, for local residents, all this foot traffic to the ocean side of the highway wouldn't be occurring – this project is clearly primarily to service tourists. We are disappointed the current situation has been allowed to have such a negative effect on our commute through the area and we are very concerned the proposal appears to exacerbate an already unacceptable situation.*

Response: The 1,300-additional daily "vehicle trips" do not represent the number of additional vehicles on the road, but rather the number of vehicles turning into and exiting the site. Thirty percent of those trips (396) are assumed to be cars already on the road. Therefore, net new vehicle trips because of the project is projected to be 926 daily.

The trips are distributed throughout the day, with the peak hour ("rush hour") and typical mid-day hour projected at an additional 65 additional turns during those hours (29 vehicles turning in, and 36 exiting the site). Saturday trips are projected to be slightly higher with 98 midday trips (51 turning in, and 47 exiting the site). So, the actual number of vehicles would be approximately half the net new vehicle trips.

The statement of significance is explained in EIS *Section 3.13.2*. The State Department of Transportation (DOT) and the City's Traffic Review Branch define a significant intersection impact when operation of an intersection changes for LOS D or better to LOS E or F. LOS C and D do not constitute serious operational problems from a traffic perspective.

Comment: *Inadequate Sewage Treatment for Adjacent Crucially Important Marine Environment: The EIS states the proposed project is not anticipated to pose adverse impacts to the nearby City and County Park – yet according to their consultant's presentation to Sunset Beach Community Association, they plan to have limited on-site access to restrooms, offering keys to locked restrooms limited to the clients of only a subset of the businesses. Here's a tip – if you don't want us to completely oppose your project, beef up your septic system to handle the existing massive traffic to the site, plus the occupants of the additional 1,322 vehicles that will, primarily, be eating at your food trucks. Lava tubes and porous soil at the site and its proximity to the sensitive marine site make increased sewer treatment of greatest concern to us.*

Response: According to a 2009 study of OSDS, Pūpūkea/Sunset Beach has the second highest density of OSDS in O'ahu communities with 123.3 units per square mile. More than 500 onsite wastewater disposal systems (cesspool and septic systems) serve homes in Pūpūkea and Sunset Beach upgradient of the project site including 279 cesspools, plus 159 aerobic, septic, and soil treatment systems. Using a conservative estimate of 250 gpd of wastewater production per residence, the total wastewater volume being disposed daily through this 3,000-foot wide corridor is more than 100,000 gallons per day, all of which ultimately reaches the ocean (see *Figure 3-4* in the EIS).

The rural center will have a low volume and high quality on-site wastewater treatment system employing ground disposal demonstrating the highest level of sensitivity to this important concern of protecting nearshore water quality. Two technical studies – one for groundwater and one for marine resources including water quality – were conducted for the EIS (*Appendices B* and *C*, respectively). The design capacity of the wastewater system will accommodate transient demand of food truck patrons and employees in addition to the patrons and employees of the retail, office, and restaurant operations. The systems' absorption bed area will be double to provide for full redundancy of the effluent disposal capacity.

Comment: *Overflow of chemicals due to cleaning of food trucks: Chemicals used for sanitation of the food trucks that are cleaned on site, and cleaning of the ground to deter flies, introduces contaminants into the marine environment. These food trucks owners have admitted they are permanent structures on the property - they don't go to a home base for evening refurbishment (which relates to inadequate sewage concerns above, because by permitting these food trucks without requiring their interior and exterior seating area square footage and number of plates served to be included in sewage treatment calculations makes us oppose this project.)*

Response: All mobile food truck vendors on site are now fully compliant with the State Department of Health (DOH) rules related to food trucks. Mobile food trucks at the rural community commercial center will utilize hardscaped area and will not be connected to, nor utilize, the on-site wastewater system. Per current DOH rules, food trucks are required to have liquid wastes removed at an approved waste servicing area or by a licensed commercial pumping contractor.

Comment: *If traffic problems were addressed (with construction of the stacking/turn lane and pedestrians limited to using existing crosswalk at the fire station) and sewage/chemicals were properly addressed (see above), this project would not adversely affect our family. As it currently stands, our sincere hope is that the developer please coordinate with an entity such as the North Shore Community Land Trust to broker a conservation organization's purchase of the lot for conservation purposes – to assure the conservation of the Shark's Cove marine environment and conservation of the functioning of our arterial access road.*

Response: The North Shore Sustainable Communities Plan (NSSCP) guides development for the region and was prepared with years of input from community members. Among the land uses defined in the NSSCP, the 4.56 acres with existing B-1 Neighborhood Business District that includes the existing Foodland grocery store was identified as the location to consolidate existing and future commercial use. The center will create a place where local businesses can serve the Sunset Beach-Pūpūkea community and its visitors. Business and employment opportunities for area residents will provide additional jobs within the community and help some avoid long commutes to job centers in urban areas of O'ahu.

The owners have taken great strides to engage a qualified professional team to listen closely to the community and design a project which is consistent with the NSSCP policies and objectives for the Rural Community Commercial Center. It is recognized from your comments that the project brings concerns about the scale and type of development. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. We welcome your continued involvement in this planning process, as it is this community's care and attention to good planning that helps to retain the special qualities we all value.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Chris Eldridge <celdridgehawaii@gmail.com>
Sent: Friday, January 5, 2018 11:37 AM
To: ashaw@honolulu.gov; Pupukea Rural Community Ctr; andrew@hanapohakullc.com
Subject: Support for the HanaPohaku Project

To Whom It May Concern:

I am writing to express my support for the proposed HanaPohaku development on the North Shore. My family has a home nearby and would welcome a project that would provide new services to the community. It is also important to us that the project be sized appropriately for the North Shore and it appears that the project is. We look forward to seeing this move forward.

Regards,

Chris Eldridge

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Chris Eldridge
Email: celdridgehawaii@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Eldridge:

Thank you for your email dated January 5, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I am writing to express my support for the proposed HanaPohaku development on the North Shore. My family has a home nearby and would welcome a project that would provide new services to the community. It is also important to us that the project be sized appropriately for the North Shore and it appears that the project is. We look forward to seeing this move forward.*

Response: We appreciate that you made the time to voice your support for the proposed rural community commercial center at Pūpūkea. The owners are committed to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Chula Harrison <chulaharrison@gmail.com>
Sent: Thursday, November 30, 2017 8:49 AM
To: ashaw@honolulu.gov; hanapohakullc@gmail.com; Pupukea Rural Community Ctr
Subject: Sharks Cove plan draws skepticism

I am definitely NOT in favor of this project, though it feels like they're pretending it's for the residents; it's definitely going to bring tourists and will obviously exacerbate the traffic problem now ('more than 1,300 more vehicles') that they cite will increase daily (which they say 'won't seriously compound traffic woes') will certainly compound traffic woes, which is already happening for the entire winter!!

And every resident there and nearby that I know want to keep the country country!

Chula Harrison, a part Haw'n. living on north and south shores for 73 years

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Chula Harrison
Email: chulaharrison@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Harrison:

Thank you for your comment letter dated November 30, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I am definitely NOT in favor of this project, though it feels like they're pretending it's for the residents; it's definitely going to bring tourists and will obviously exacerbate the traffic problem now ('more than 1,300 more vehicles') that they cite will increase daily (which they say 'won't seriously compound traffic woes') will certainly compound traffic woes, which is already happening for the entire winter!! And every resident there and nearby that I know want to keep the country country!*

Response: The increase in visitor numbers over the past decade State- and island-wide is well documented by multiple sources and are not attributable to a single development. The rural community commercial center will support the same communities as Foodland, and visitors from other communities on Oʻahu or from out-of-state that come to see the famed North Shore beaches and snorkel the popular Sharks Cove.

The 1,300-additional daily "vehicle trips" do not represent the number of additional vehicles on the road, but rather the number of vehicles turning into and exiting the site. Thirty percent of those trips (396) are assumed to be cars already on the road. Therefore, net new vehicle trips because of the project is projected to be 926 daily.

The project has supporters from the community as well; please see the comment letters included in *Chapter 6* of the EIS. The supporters value the owners' commitment to pursue Hawaiʻi-based businesses as tenants and see jobs opportunity for themselves or their children closer to home. Among the owners' objectives are support of local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

Comments and Questions on the Pupukea Rural Community Commercial Center Draft Environmental Impact Statement prepared by G70 on behalf of Applicant Hanapohaku LLC, November 2017

submitted by: Dean Hamer, Haleiwa, Hawai'i (DeanHamer@aol.com)

I request to be a consulted party on all matters related to this development project.

The prosed commercial center lies in the middle of the fabled north shore of Oahu, approximately midway between the towns of Kahuku and Haleiwa. This stretch of the coast consists of a mixture of undeveloped, developed and public beachfront, agricultural land, pockets of housing, and minor commercial activities. It is an area that is much beloved by the people who live there for its simplicity and rural character.

Prior to the developers arrival in 2014, the 2.7 acre lot adjacent to Foodland (the largest commercial activity in the stretch) was a quiet little area with a small surf shop, a single food truck, and two small professional offices. There was no noticeable traffic and no congestion. There were no lights or large signage. There was no music or loud sounds. At night, the area became completely quiet.

This completely changed with the arrival of Hanapohaku. A comparison of photos and video show how dramatic the alteration is. Quickly the area became a carnival-like tourist attraction. There are hordes of people. There is traffic. There are bright lights and loud music. All of this is immediately adjacent to the highway, impossible to ignore.

This has resulted in a qualitative change to the north shore. Hanapohaku has bifurcated the region into two segments separated by a commercial hotspot. The net effect is to drive away residents and attract transient visitors.

Although the developers made some minor adjustments in response to widespread community complaints and DPP fines, the overall character of the spot continues to be an affront to the local population. I**f DPP approves this request for yet more development on this spot, it will send a clear and unmistakeable signal to North Shore residents that our government cares more about increasing tourist business than about the quality of life for local people.**

I am especially skeptical of the developers' claims that the commercial center will “meet the needs of the surrounding residential communities,” as required by the North Shore Sustainable Communities Plan.

The draft EIS provides no convincing information that this is the case. Furthermore, some of the renderings and information seems designed to conceal the true function of the center, which is as a tourist site.

To wit, the plans show a pharmecy, but is there a signed agreement for one? Which pharmacy? How long is the proposed lease? Even if there is a pharmacy, is there a requirement for another one if they leave? And what power does DPP have to enforce that there will be a pharmacy? (The DPP cannot even enforce their own rules, as we have seen by sad experience.)

The plans also show a credit union. Has an agreement been signed? If there is no credit union what will take its place? How do we know that this isn't complete bull? (Based on the developer's past behavior, this is a reasonable likelihood.)

It is essential that is this areas continues to be developed, it should meet our needs, not those of tourists and the developers. There need to be concrete, evidence-baseed precitions into the customer base of the center.

The developers already have data on who is using the current development at Sharks Cove. Why is that not included in the EIS???

I believe it is because they know that their center is for tourists, and they are trying to conceal this fact.

The plans do NOT show all the food trucks that will be parked at the site – up to 8, the number already there!!!! We already know that these food trucks cater to tourists, not local residents.

Unfortunately, the DPP has no way of assuring that the developer's claims about providing residential services will actually be met. Nor is there any way to make sure that businesses stay there. Unless the developers can prove that they have local businesses coming in that will stay there, this part of just a front.
xpected at the site of the development? How are these numbers determined and modeled, and for what specific times periods?

I also have environmental concerns. There is considerable debate among marine conservationists about the appropriate means to measure and predict the environmental impacts of developments such as the prosed Sharks Cove commercial center that will exist and probably grow for many years past the immediate permitting period. For example, while the immediate effects of the development on water quality might be quantifiable, what about the long term effects of years and decades of car exhaust, runoff from commercial areas, etc etc?

Given Hanapohaku's recent history of ignoring the law, there is justifiable concern that they will select environmental evaluators that place more value of giving a “clean” recommendation than on those that have more long-term concerns and approaches. The evaluation should be performed by the DPP and paid for by the developer, otherwise there is a disqualifying conflict of interest.

I hope these comments will be useful as the DPP decides whether to approve Hanapohaku's application to permanently change the character of the rural north shore of O'ahu. It would be nice if, for a change, we could depend on our administration rather than the courts to enforce the true meaning and intent of the law.

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Dean Hamer
Email: deanhamer@aol.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Hamer:

Thank you for your comment letter dated November 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I request to be a consulted party on all matters related to this development project.*

Response: We have added your name and email address to the list for future communication regarding the project.

Comment: *The prosed* [sic] *commercial center lies in the middle of the fabled north shore of Oahu, approximately midway between the towns of Kahuku and Haleiwa. This stretch of the coast consists of a mixture of undeveloped, developed and public beachfront, agricultural land, pockets of housing, and minor commercial activities. It is an area that is much beloved by the people who live there for its simplicity and rural character. Prior to the developers arrival in 2014, the 2.7 acre lot adjacent to Foodland (the largest commercial activity in the stretch) was a quiet little area with a small surf shop, a single food truck, and two small professional offices. There was no noticeable traffic and no congestion. There were no lights or large signage. There was no music or loud sounds. At night, the area became completely quiet.*

This completely changed with the arrival of Hanapohaku. A comparison of photos and video show how dramatic the alteration is. Quickly the area became a carnival-like tourist attraction. There are hordes of people. There is traffic. There are bright lights and loud music. All of this is immediately adjacent to the highway, impossible to ignore. This has resulted in a qualitative change to the north shore. Hanapohaku has bifurcated the region into two segments separated by a commercial hotspot. The net effect is to drive away residents and attract transient visitors. Although the developers made some minor adjustments in response to widespread community complaints and DPP fines, the overall character of the spot continues to be an affront to the local population. If DPP approves this request for yet more development on this spot, it will send a clear and unmistakeable signal to North Shore residents that our government cares more about increasing tourist business than about the quality of life for local people.

I am especially skeptical of the developers' claims that the commercial center will "meet the needs of the surrounding residential communities," as required by the North Shore Sustainable Communities Plan. The draft EIS provides no convincing information that this is the case. Furthermore, some of the renderings and information seems designed to conceal the true function of the center, which is as a tourist site.

To wit, the plans show a pharmecy [sic], *but is there a signed agreement for one? Which pharmacy? How long is the proposed lease? Even if there is a pharmacy, is there a requirement for another one if they leave? And what power does DPP have to enforce that there will be a pharmacy? (The DPP cannot even enforce their own rules, as we have seen by sad experience.) The plans also show a credit union. Has an agreement been signed? If there is no credit union what will take its place? How do we know that this isn't complete bull? (Based on the developer's past behavior, this is a reasonable likelihood.)*

It is essential that is this areas continues to be developed, it should meet our needs, not those of tourists and the developers. There need to be concrete, evidence-baseed precitions [sic] *into the customer base of the center. The developers already have data on who is using the current development at Sharks Cove. Why is that not included in the EIS??? I believe it is because they know that their center is for tourists, and they are trying to conceal this fact.*

Response: The existing Foodland grocery store supports the Pūpūkea, Waimea and Kawailoa communities and visitors. The increase in visitor numbers over the past decade State- and island-wide is well documented by multiple sources, and cannot be attributed to a single development. The rural community commercial center will support the same communities as Foodland, and visitors from other communities on O'ahu or from out-of-state that come to see the famed North Shore beaches and snorkel the popular Sharks Cove.

The owners of the rural center have prioritized local Hawai'i based businesses for the leasing of tenant spaces, particularly those with North Shore roots. The specific businesses committed with letter of intent for the rural center include Waialua Federal Credit Union, Island Urgent Care, North Shore Surf Shop, Seamaids, The Spot, North Shore Tacos and others are in discussion. These are all Hawai'i based enterprises, with some from the North Shore community.

Comment: *The plans do NOT show all the food trucks that will be parked at the site – up to 8, the number already there!!!! We already know that these food trucks cater to tourists, not local residents. Unfortunately, the DPP has no way of assuring that the developer's claims about providing residential services will actually be met. Nor is there any way to make sure that businesses stay there. Unless the developers can prove that they have local businesses coming in that will stay there, this part of just a front. Expected at the site of the development? How are these numbers determined and modeled, and for what specific times periods?*

Response: With the rural community commercial center in operation, up to six mobile food trucks have been determined as the number that can be accommodated in the tenant mix. *Figure 2-6* in the Final EIS identifies the locations where the mobile food trucks can park.

Comment: *I also have environmental concerns. There is considerable debate among marine conservationists about the appropriate means to measure and predict the environmental impacts of developments such as the prosed Sharks Cove commercial center that will exist and probably grow for many years past the immediate permitting period. For example, while the immediate effects of the development on water quality might be quantifiable, what about the long term effects of years and decades of car exhaust, runoff from commercial areas, etc etc?*

Response: The Draft and Final EIS documents are disclosure documents prepared pursuant to the Revised Ordinances of Honolulu, Chapter 25, Special Management Area, and consistent with Hawai'i Revised Statutes, Chapter 343, Environmental Impact

Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health, Environmental Impact State Rules (HAR §11-200). The process and content of the EIS adheres to the guiding rules and requirement.

Chapter 3 of the EIS is devoted to qualitative and quantitative evaluation of the current and future environmental and cultural conditions in and around the project site. Eight technical reports are appended to the EIS. *Section 3.18.1* provides a summary of the potential and cumulative impacts that may stem from the project.

Comment: *Given Hanapohaku's recent history of ignoring the law, there is justifiable concern that they will select environmental evaluators that place more value of giving a "clean" recommendation than on those that have more long-term concerns and approaches. The evaluation should be performed by the DPP and paid for by the developer, otherwise there is a disqualifying conflict of interest.*

Response: The Department of Planning and Permitting (DPP) is acting as the Accepting Authority for the EIS. Under HAR §11-200, acceptability of an EIS is evaluated based on whether the document "... represents an informational instrument which fulfills the definition of an EIS and adequately discloses and describes all identifiable environmental impacts and satisfactorily responds to review comments." Additional criteria are listed that must be satisfied.

Comment: *I hope these comments will be useful as the DPP decides whether to approve Hanapohaku's application to permanently change the character of the rural north shore of O'ahu. It would be nice if, for a change, we could depend on our administration rather than the courts to enforce the true meaning and intent of the law.*

Response: The owners have taken great strides to engage a qualified professional team to listen closely to the community and design a project which is consistent with the NSSCP policies and objectives for the Rural Community Commercial Center. It is recognized from your comments that the project brings concerns about the scale and type of development. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. We welcome your continued involvement in this planning process, as it is this community's care and attention to good planning that helps to retain the special qualities we all value.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Devon Dailey <hawaiipolo@gmail.com>
Sent: Monday, November 27, 2017 4:11 PM
To: Pupukea Rural Community Ctr
Subject: Re: Pupukea Rural Community Commercial Center Environmental Impact Statement Preparation Notice

... Thanks for your thoughts and email, we'll ignore everything you've said and move on with our cash-grab venture to slowly turn the north shore into honolulu...

Please send us pics of the yachts and second (3rd or 4th) homes this deal will allow you folks to buy. Post em to
#fthosepeopleimonaboat or
#cashoverconscience or
#developersarejobcreatorssofyourhome

What's the point of this part of the process? This plan is completely at odds with what the community is and wants to be.

Also, nice use of 'rural' and 'community' in your shopping centers' name but you guys are missing some hawaiian for the full sell; how about 'Na Hoku Pipikaula o Pupukea Rural Community totally-not-a-shopping-center Commercial Center.' That way no one would read it long enough to get to 'Commercial Center.'

On November 27, 2017 at 1:20:00 PM, Pupukea Rural Community Ctr (pupukea@g70.design) wrote:

> Dear Mr. Dailey:
>
> Thank you for your May 2017 comment on the Pupukea Rural Community Commercial Center Environmental Impact Statement Preparation Notice. Please find a response to your comments attached. The Draft Environmental Impact Statement will be published in the Office of Environmental Quality Control's November 23, 2017 *Environmental Notice*. You can download a copy using the following link: http://oeqc2.doh.hawaii.gov/Other_TEN_Publications/2017-11-23-OA-Chapter-25-DEIS-Pupukea-Rural-Community-Commercial-Center.pdf
>
> Thank you for your interest and participation in the environmental process.
>
> The Planning Team at G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Devon Daily
Email: hawaiipolo@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Daily:

Thank you for your comment letter dated November 27, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comments: *... Thanks for your thoughts and email, we'll ignore everything you've said and move on with our cash-grab venture to slowly turn the north shore into honolulu... Please send us pics of the yachts and second (3rd or 4th) homes this deal will allow you folks to buy. Post em to #fthosepeopleimonaboat or #cashoverconscience or #developers arejobcreatorss ofyourhome*

What's the point of this part of the process? This plan is completely at odds with what the community is and wants to be. Also, nice use of 'rural' and 'community' in your shopping centers' name but you guys are missing some hawaiian for the full sell; how about 'Na Hoku Pipikaula o Pupukea Rural Community totally-not-a-shopping-center Commercial Center.' That way no one would read it long enough to get to 'Commercial Center.'

Response: We acknowledge your comments. The project has support by community - please see the letters included in *Chapter 6* of the Final EIS. The supporters value the owners' commitment to pursue Hawai'i-based businesses as tenants and see jobs opportunity for themselves or their children closer to home. Among the owners' objectives are support of local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

ARCHITECTURE // CIVIL ENGINEERING // INTERIOR DESIGN // PLANNING & ENVIRONMENT

From: Garrett and Nicole McNamara <gmachawaii@gmail.com>
Sent: Sunday, January 7, 2018 10:37 AM
To: ashaw@honolulu.gov; Pupukea Rural Community Ctr; andrew@hanapohakullc.com
Subject: Sharks cove community center North Shore

This letter is to voice our support of the proposed community center/space across from sharks cove and next to Foodland.

This is a much needed project for the community that will provide much needed services. And on top of that it isn't even coming close to the size of development that could be built there. My family will personally frequent these establishment and support the small local business and our hope is that you do as well!!

We are North Shore homeowners and have been for a number of years. Please choose to beautify and bring in a practical plan for this area that is being proposed.

Thank you for your attention to this matter!

Garrett McNamara

Sent from my iPhone

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Garrett McNamara
Email: gmachawaii@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. McNamara:

Thank you for your comment letter dated January 7, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *This letter is to voice our support of the proposed community center/space across from sharks cove and next to Foodland.*

This is a much needed project for the community that will provide much needed services. And on top of that it isn't even coming close to the size of development that could be built there. My family will personally frequent these establishment and support the small local business and our hope is that you do as well!!

We are North Shore homeowners and have been for a number of years. Please choose to beautify and bring in a practical plan for this area that is being proposed.

Response: We appreciate that you made the time to voice your support for the proposed rural community commercial center at Pūpūkea. The owners are committed to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

ARCHITECTURE // CIVIL ENGINEERING // INTERIOR DESIGN // PLANNING & ENVIRONMENT

From: Jerry Lynch <jerrylynch@mac.com>
Sent: Wednesday, January 3, 2018 11:00 AM
To: ashaw@honolulu.gov; Pupukea Rural Community Ctr; Andrew Yani
Subject: Pupukea Rural Commercial Community Center - "McCully's Corner"

Aloha,

I am writing to express my support for the proposed Pupukea Rural Commercial Community Center - "McCully's Corner",

I am a concerned North Shore home owner and I have been following this project as I believe it will be of great benefit to our North Shore Community in that it will bring much needed jobs in small business as well as amenities for us residents. My family and I would definitely use the center.

I support the sizing of the proposal in that it only utilizes 25% of what would be allowable.

Sincerely,

Jerry Lynch
61-445 Kamehameha Highway
Haleiwa HI 96712
808 347 0777

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Jerry Lynch
61-445 Kamehameha Highway
Haleiwa, HI 96712
Email: jerrylynch@mac.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Lynch:

Thank you for your email dated January 3, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I am writing to express my support for the proposed Pupukea Rural Commercial Community Center - "McCully's Corner", I am a concerned North Shore home owner and I have been following this project as I believe it will be of great benefit to our North Shore Community in that it will bring much needed jobs in small business as well as amenities for us residents. My family and I would definitely use the center.*

I support the sizing of the proposal in that it only utilizes 25% of what would be allowable.

Response: We appreciate that you made the time to voice your support for the proposed rural community commercial center at Pūpūkea. The owners are committed to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

ARCHITECTURE // CIVIL ENGINEERING // INTERIOR DESIGN // PLANNING & ENVIRONMENT

Comments on the Pupukea Rural Community Commercial Center
Draft Environmental Impact Statement
prepared by G70 on behalf of Applicant Hanapohaku LLC, November 2017

submitted by:
Joe Wilson
North Shore O'ahu
e: QwavesJoe@yahoo.com

January 3, 2017

I request to be a consulted party on all matters related to this development project.

On May 22, 2017, I submitted a response to the Pupukea Rural Community commercial Center Environmental Impact Statement Preparation Notice prepared by G70 on behalf of Applicant Hanapohaku LLC.

While it is ostensibly stipulated in law by the City and County of Honolulu that all questions are to be responded to, and G70's Jeff Overton promised that such would be the case at a May 17, 2017 meeting of the Sunset Beach Community Association, the vast majority of questions posed in my comment document were not addressed, as can be seen on Pages 316-325 of the current Draft Environmental Impact Statement.

Why were my questions not answered? Why should the application associated with this EIS be allowed to proceed when previous obligations, and promises, remain unfulfilled?

In addition, this EIS seems to purposefully omit detailed information regarding the impacts associated with the presence of mobile food trucks, including accurate architectural renderings.

Since this applicant has a disturbing track record of flouting the law and DPP and DOH rules and regulations with regard to food trucks, it is imperative that an EIS for this project be required to include specifics in its data and analysis across all areas of community and environmental concern.

What would be the case for proceeding without such information?

While other community residents and respondents are likely focusing on the environmental, health, public safety, traffic, zoning, and design concerns associated with this Environmental Impact Statement, I have questions regarding the process itself; unpermitted activities that have taken place, and continue, on the sites owned and operated by Hanapohaku LLC; and, whether, or NOT, Hanapohaku LLC is eligible to submit such permit applications before complying with the Feb. 27, 2017 Notice of Order from the City and County of Honolulu Department of Planning and Permitting.

These questions are an attempt to ascertain a broader understanding of the comprehensive physical and natural environmental impacts of this development scheme, the broader impacts on the community, and the precedent would set for future development bids on the North Shore, and across O'ahu.

An April 8, 2017 Honolulu Star-Advertiser article by business reporter Andrew Gomes stated that:

"A North Shore property owner that has racked up city fines for unpermitted construction and food

truck operations is proposing to redevelop the site with more retail use after withdrawing a smaller development plan a year ago in the face of community opposition.

Development firm Hanapohaku LLC [led by Andrew Yani and Lawrence "Cully" McCully Judd III] wants to build several one- and two-story buildings, space for eight food trucks and covered parking in a new bid to redevelop the 2.7-acre property across from Sharks Cove in Pupukea."

The community opposition the article referred to was articulated by local environmental organization Malama Pupukea Waimea (MPW) in the December 2016 issue of Paumalu Press:

"In 2015, Hanapohaku LLC purchased three acres between the Pupukea Foodland and Pahoe Road – the old Niimi property, currently zoned as B-1 Neighborhood Commercial. Without warning or consultation with the community, and without proper permitting, the new owners began to develop in a haphazard, kapakahi style, with a wide range of unpermitted activities and violations. Ten food trucks appeared virtually overnight, and an unmanaged circus of customers and explosion in traffic followed them.

Despite having no valid Special Management Area permits for any activities on the property, for more than a year, Hanapohaku has illegally developed the property with unpermitted renovations, food trucks, lights, decks, utilities, commissaries, wastewater units, grading-grubbing, parking lots, fences, signs, and tents. Only recently, after months of community pressure, did Hanapohaku even put portable toilets on site, attempt to manage some of the parking problems, or hire a project coordinator or a professional planner. Hanapohaku has racked up a large number of apparent and reported violations under federal, State, and County laws – many of which are resulting in double fines because they remain unresolved. The developer's deliberate strategy of seeking numerous after-the-fact permits, instead of complying with the law up front, and its disrespect for the community's voice have created significant problems for its neighbors, and posed reckless pollution threats to our environment."

On May 2, 2016, the City and County of Honolulu Department of Planning and Permitting (DPP) issued a letter stating:

"This responds to your request received April 13, 2016, to "cancel" the Minor SMA Use Permits issued to Hanapohaku LLC … and to withdraw a pending application seeking a site plan modification."

The DPP letter continued:

"Therefore, the permits identified by File Numbers 2015/SMA-24, 2015?SMA-47 and 2015/SMA-61, are hereby revoked. Consequently, ***all improvements which were authorized by these approvals must be removed, and the area restored to its pre-approval condition. Any outstanding violations associated with those approvals must also be resolved.****"*

Why did Hanapohaku LLC and owners Andrew Yani and Cully Judd not comply with that May 2, 2016 DPP directive?

Since then, over the past twelve months, as noted by reports on Hawaii News Now, KITV, and additional articles in the Honolulu Star-Advertiser and Pacific Business News, Hanapohaku LLC's illegal operations have continued, documented by the numerous Notices of Violation (NOV) issued by the City's DPP, with fines estimated to total more than $65,000.

When those NOVs were ignored, the City's DPP issued a Notice of Order (No. 2017/NOO-062) to Hanapohaku LLC on February 27, 2017 stating that:

"There are multiple violations in Special Management Area (SMA) without an SMA Use Permit. Structures include food trucks, shipping containers, loading trucks, septic tanks, wooden decks and stairs, tents, eating areas with tables and benches, signs and sheds, temporary toilets, fences, walls, parking areas, and all other unpermitted structures. Grading work was undertaken without the requires permit. Commercial activities lack an SMA Use Permit."

The Notice of Order continued:

"The Department of Planning and Permitting inspected the above-described structure(s) and/or premises and found a violation of one or more ordinances of the City and County of Honolulu. As a result, Notice of Violation 2016/NOV-12-137 was issued on January 23, 2017. As of the date of this order, the violation described in the NOV has not been corrected. Because this is a recurring violation, accordingly, pursuant to the authority granted by the Revised Ordinances of Honolulu, you are hereby ordered to 1) Pay a fine of $2,000 by March 30, 2017, and 2) Correct the violation by March 14, 2017. If corrective action has not been completed by this date, a daily fine of $500 will be assessed until the correction is completed."

Did Hanapohaku LLC and its owners, Andrew Yani and Cully Judd, comply with this Notice of Order?

If not, why not?

In a March 1, 2017 meeting, attended by Linda Schatz, Michael Hodge, Cully Judd, Andrew Yani, Dean Hamer, and myself, Yani told me that he *"needed to continue the [unpermitted] food truck operations in order to generate revenue to fund the cost of the SMA permit application process."*

Why does Yani believe that he is exempt from DPP zoning rules and regulations, ie. the law, in order to further his personal business interests?

If he and Hanapohaku LLC are exempted, why should other business owners who already, or want to, operate on the North Shore, or anywhere on O'ahu, comply with DPP zoning rules and regulations?

What should be the process to determine who is exempt and who is not? And who makes those decisions? Should there be community input into that process? If not, why not?

During his presentation on the development scheme at the May 17, 2017 meeting of the Sunset Beach Community Association, Hanapohaku LLC presentative Jeff Overton said:

"In 2014, Hanapohaku came and purchased the property and there were some changes on the property over the last couple years. They began to operate on the property. There were some food trucks added, some more commercial uses, structures that were built without permits there, other operations, and that's not the way things are supposed to be done … It was kind of the wild west there..."

What kind of precedent would be set for future development on the North Shore, or anywhere on O'ahu, if Hanapohaku LLC was not held accountable for its documented ("wild west") violations, ongoing illegal activities, and the disruptions it has caused to neighbors, pedestrian

safety and vehicular traffic along the Kamehameha Highway corridor, as well as to the physical and natural environment surrounding the Pupukea Marine Life Conservation District?

Do Mr. Overton, and other project consultants paid by Hanapohaku LLC, including lawyer Terrence Lee, believe that such illegal behavior is acceptable and that Hanapohaku LLC should be exempt from compliance?

If so, why in this case? Should future development projects on the North Shore, or anywhere on O'ahu, also be exempt from the DPP's zoning rules and regulations? If not, why not?

In which circumstances should a developer comply with the law, and in which not? Who is to make such determinations?

If a developer was engaging in similar activities on parcels adjacent to Mr. Overton's, Mr. Lee's, Mr. Yani's, Mr. Judd's, and/or other paid project consultants' home properties, would they tolerate and support it? If so, why? If not, why not?

Now, well past the 30-day deadline set by the DPP in its February 27, 2017 Notice of Order, Hanapohaku LLC has still not paid its fine(s).

The DPP Notice of Order states:

"If the fine is not paid by the due date, this matter may be referred to the Department of the Corporation Counsel for civil remedy and/or the Prosecuting Attorney's Office for criminal prosecution. When this order becomes final, all unpaid civil fines imposed by this order shall be added to the taxes, fees, and charges specified in Section 20-3-4 of the Department of Planning and Permitting's Rules Relating to Administration of Codes. Such taxes, fees, and charges include, but are not limited to, driver's license and vehicle registration fees, fees for permits issued under the City Land Use Ordinance (e.g. sign permits, conditional use permits, and variances) and fees for building, demolition, grading, grubbing, stockpiling, trenching, and excavation permits."

Why has Hanapohaku LLC not paid the fine(s)?

During his May 17, 2017 Sunset Beach Community Association presentation, Mr. Overton said "Tomorrow's not too soon. We've really got to get to these things because they're affecting people on a daily basis."

What's the delay?

Since Hanapohaku LLC is refusing to comply with the NOO, and refusing to pay the fine(s), why should this developer be allowed to continue in a Major SMA application process?

Would exempting Hanapohaku LLC from compliance with the DPP NOO and negotiating the fines down to a lower amount be fair to other businesses or developers who do follow the rules?

If the DPP allows Hanapohaku LLC to continue with its Major SMA permit applications despite its lack of compliance with the DPP NOO, how would Hanapohaku LLC's Environmental Impact Statement assess and quantify the environmental impacts and community disruptions that have occurred over the past year while the project was in violation?

In an April 13, 2017 Editorial titled "Shark's Cove Place Must Regain Trust," the Honolulu Star-Advertiser noted:

"The developers have met with the community to draw up the new plans for a major permit, and that turnabout was a needed first step. But they have seemed unwilling to take the next step toward a legitimate operation by first ending the illicit activity.

They have opposed shutting down the operations because the food trucks that are their tenants would lose business. That argument falls short. The developers fostered this situation. And, the truck owners are free to secure permits for a more mobile business elsewhere while the permit process proceeds. These are operations that are meant to be mobile after all.

Of course, Hanapohaku could no longer collect revenue from tenants during the interim. The whole purpose of land use regulations in the sensitive shoreline area is to allow careful review of environmental impacts before the activity is permitted – not to allow profit-taking in the meantime.

… There's a reason why the City takes a go-slow approach to development. Neighborhoods along the North Shore already are straining to cope with the crowds, including many tourists lured by the rustic charm and natural beauty of the place.

It takes time to define the boundaries for permitted activities. Hanapohaku needs to give the City that time, and the community the respect it deserves."

Since Hanapohaku LLC has chosen to disrespect the community and the City by ignoring DPP rules and regulations thus far, what guaranty does the community and the DPP have that Hanapohaku LLC and its consultants will follow rules and regulations going forward?

Based on Hanapohaku LLC's past actions, why should the community and the DPP trust Hanaophaku LLC and/or its consultants on this project going forward?

During his presentation at the May 17, 2017 Sunset Beach Community Association meeting, Hanapohaku LLC representative Jeff Overton asserted that *"Malama Pupukea Waimea... said to pull back, don't go to zero"* - in reference to the number of food trucks allowed to operate on the property.

When the accuracy of his statement was challenged by community member Larry McElheny, Overton tried to walk it back by saying: *"We have no stamped document that says exactly what was agreed to."*

When asked for comment on Overton's assertion, Malama Pupukea Waimea spokesperson Denise Antolini said: *"MPW has always said to go back to baseline (conditions at time of purchase) and then going forward, only what is legal."*

If Overton's statement was not verifiably accurate, and an arrangement had not been "agreed to," was he deliberately attempting to mislead or confuse the public on these details in order to achieve a more beneficial outcome for his client?

If not, what was the intention of the statement he made at the Sunset Beach Community Association meeting about Malama Pupukea's position?

Another misleading statement was included in the EISPN, prepared on behalf of Hanapohaku LLC by G70. Section 5.1 NO-ACTION ALTERNATIVE of the EISPN states: *"The No-Action Alternative would maintain the property in its existing condition, with the limited allowed commercial uses per the existing SMA Minor permit. The uses include the real estate office, dentist office, surf and clothing*

store, and one food truck establishment."

As has been clearly established, the real estate office and dental office have been gone from the property for some time, replaced by approximately eight unpermitted food trucks.

What was the intent of including the inaccurate and misleading statement about the property's existing condition in the EISPN?

What other inaccuracies are contained within the current EIS? What is being done to correct them?

With such inaccuracies, what trust can the public and the DPP place in the process going forward?

Based on these and other outstanding questions and concerns, the City and County of Honolulu Department of Planning and Permitting should NOT allow Hanapohaku LLC to proceed with SMA Major permit applications or EIS reviews until it complies in full with DPP's original May 2, 2016 directive, the February 27, 2017 Notice of Order, and pays the total amount of fines accrued for its numerous and ongoing violations.

As for the Draft Environmental Impact Statement, the November 30, 2017 Editorial published by the Honolulu Star-Advertiser covered several of the most important over-arching questions well:

Honolulu Star-Advertiser - Editorial
Sharks Cove plan draws skepticism
November 30, 2017

A "rural community commercial center" doesn't seem the sort of thing to inspire neighborhood resistance. But this is Oahu's North Shore, where the "rural" part of that concept can easily succumb to urban pressures, especially around the visitor industry.

The proposal for the $18 million center, proposed for a 2.7-acre property across from Sharks Cove, thus merits careful scrutiny to determine whether that precarious balance can be maintained with such a project.

The public will get that chance to weigh in on the retail complex, which is seeking a key permit that requires a detailed environmental review under state law.

There is some history with the community here, and that complicates things. Hanapohaku LLC is the developer of the project, which would replace unpermitted food-truck operations and construction on the site for which the developer has paid fines.

The center is proposed for three parcels adjoining the Foodland property in Pupukea, and must secure a special management area (SMA) permit. According to the draft environmental impact statement, the supermarket parcel is linked to the Hanapohaku project through a 1996 development agreement providing for cooperation among the property owners.

Hanapohaku is led by Andrew Yani, and there's already been a dispute between the company and the community because a previous plan got around public review requirements and shoreline protection rules, including the illicit food trucks.

So the redesign was sure to have critics looking askance at three buildings with a total of 27,500 square feet of leasable space. ***It also would accommodate as many as eight food trucks.***

The developers will need to mount a persuasive case to overcome a trust deficit with many in the community.

What worries the community, rightly, is the potential disruption it could pose.

The developers insist that the new project would meet zoning rules by adding "neighborhood businesses" that primarily serve area residents.

Tenants could include a restaurant, pharmacy, medical clinic, bank, deli, copy shop, yoga studio, real estate office, child care center, art gallery, clothing store, surf shop and office space for a community organization, according to the draft EIS.

But community groups assert that the uses are likely to drift toward establishments that cater to, and would attract, a tourist clientele.

Visitors already would be drawn by North Shore beach attractions such as Sharks Cove and would inevitably drive the retail market. Hanapohaku has an SMA permit to allow existing commercial uses to continue for now.

A recent traffic impact assessment projects that the draw would comprise 1,322 more vehicles a day but concludes that this won't seriously compound traffic woes.

Mitigating improvements would include a turning lane on crowded Kamehameha Highway and a shared driveway with Foodland. ***The question to be answered: Will this be enough?***

In addition, some firm plans for tenants that suit the community's retail and business needs will need to be made.

The North Shore could benefit from businesses, but only to a point — and ***Hanapohaku will have to prove it stays within limits that make sense.***

I have additional questions and comments pertaining to the initial development plan. Many of these require baseline data collection that should be started before a permit application is even considered.

1. Function of the Development: The North Shore Sustainable Communities Plane defines a rural community-based commercial center as one that "meet the needs of the surrounding residential communities." **A requirement for considering an SMA permit should be that the development will serve residents. This will require consideration of the precise retail activities planned and collecting external data on the likely customers.**

Current Questions: What percentage of customers at the site are expected to be residents? How does this break down in terms of each retail activity planned? What data sources and methods are you using for these projections?

Future Questions: What guarantee is there that the proposed retail activities are what will actually happen in the area? If a tenant leaves, what will be the requirements for the replacement? Does DPP currently enforce such regulations?

2. Congestion: The number of visitors to the site is of major importance for traffic hindrance by pedestrian crossings, potential pollution from toilet use, etc. **A requirement for considering an SMA permit should be an accurate projection of congestion caused by the development.**

Questions: What number of customers are expected to visit the site? How was this number determined, and for what specific times periods? How does this compare to the current number of visitors?

3. Traffic Control: Traffic is one of the most serious concerns of north shore resident. **A requirement for considering an SMA major permit should be accurate, data-based projections of traffic.**

Questions: What are the (1) total number of vehicles; (2) throughput; (3) time headway; (4) average and maximal delay period expected at the site of the development? How are these numbers determined and modeled, and for what specific times periods?

4. Environmental Concerns: There is considerable debate among marine conservationists about the appropriate means to measure and predict the environmental impacts of developments such as the prosed Sharks Cove commercial center that will exist and probably grow for many years past the immediate permitting period. For example, while the immediate effects of the development on water quality might be quantifiable, what about the long term effects of years and decades of car exhaust, runoff from commercial areas, etc etc?

Given Hanapohaku's recent history of ignoring the law, there is justifiable concern that they will select environmental evaluators that place more value of giving a "clean" recommendation than on those that have more long-term concerns and approaches.

Questions: Who will choose the evaluators for each section of the SMA permit? Would Hanapohaku allow environmental organizations to be involved in the process? Would Hanapohaku agree to accept recommendations from an outside, objectively chosen experts?

<u>With regard to an application for a Minor SMA permit:</u>

1. Function of the Development: The North Shore Sustainable Communities Plane defines a rural community-based commercial center as one that "meet the needs of the surrounding residential communities." However, the illegal development at Sharks Cove that Hanapohaku has carried out since 2014 has clearly resulted in attracting tourists rather than local residents, which is obvious from the large number of shiny rental cars that are parked in and across the highway from the development. **A requirement for granting the minor SMA permit should be that the planned activities are aimed at improving the property to meet the needs of residents. This in turn requires baseline data on the current usage of the facility and specific plan for bringing the development into compliance with zoning law.**

Data Questions: What percentage of customers at the site are residents? How was this number determined, and for what specific times periods? If these numbers have not been obtained, what are the developers plans to do so in the future? How and when?

Planning Questions: How will the prosed activities increase the proportion of residential users? How was your estimate obtained?

2. Congestion

The illegal post-2014 development at Sharks Cove has resulted in a large increase in the number of people visiting the site. This contributes to traffic hindrance by pedestrian crossings, potential pollution from toilet use, etc. **A requirement for granting the minor SMA permit should be that the planned activities are aimed at decreasing the congestion. This necessitates baseline data on customer use and demonstration of how the alterations will ameliorate the situation.**

Data Questions: What number of customers visit the site.? How was this number determined, and for what specific times periods? If these numbers have not been obtained, what are the developers plans to do so prior to the minor SMA permit activities? How and when?

Planning Questions: How do the proposed activities reduce congestion. How was your estimate obtained? (Please provide modeling details.)

3. Traffic Control Since the illegal post-2014 development at Sharks Cove there has been an obvious increase in traffic in the area, often resulting in long delays just to get to the stoplight at Pupakea Road. **A requirement for granting the minor SMA permit should be that the planned activities are aimed at decreasing the traffic that has been increased by the illegal development. This necessitates baseline traffic data and quantitative evidence for improvement..**

Data Questions: What number of care visit the site? How was this number determined, and for what specific times periods? If these numbers have not been obtained, what are the developers plans to do so prior to construction activities.

Planning Questions: How will the prosed activities effect (1) total number of vehicles; (2) throughput; (3) time headway; (4) average and maximal delay period? (Please provide modeling details.)

4. Parking Lot The SMA minor permit request includes permission for an asphalt parking lot. Developers state this is necessary for the amount of traffic they are generating. **This is a classic example of using illegal development as a quasi-rationale for further development.** That is, the developers build a bunch of stuff illegally, then ask for permission to build yet more to satisfy the demand they have generated in violation of the rules and regulations.

Question: If the major SMA permit is not granted (as appears likely based on previous history at this site), will the parking lot be removed? How will the land be restored?

5. Process Issues It is well known, both from multiple articles in the press and from the DPP's publication of multiple violations, that the current mess at Sharks Cove was the result of improperly or unpermitted, illegal activities. In fact, the owners and developers have confessed and apologized for this at public meetings. They have also openly admitted that they have no intent to comply with the clear May 3, 2016 DPP directive that *"all improvements which were authorized by these (prior) approvals must be removed, and the area restored to its pre-approval condition."*

I asked the owners, at a private meeting at their offices, why **they are flaunting the law**. The answer was simple: **to generate the cash needed to apply for legal permits**.

This raises a serious question of process going forward. If the DPP allows Hanapohaku to obtain *any* permit for development at Sharks Cove at the current point in time, even while they are in violation of DPP regulations, and making money from it, it sends a clear message to other developers: "*The best way to develop on the north shore is to ignore the law and do it yourself.... You can always fix it up later."*

Questions: If Hanapohaku is exempt from DPP regulations, why should other business owners on the North Shore, or anywhere on O'ahu, comply with DPP zoning rules and regulations?

Given Hanapohaku's disrespect for the community and the City by ignoring DPP rules and regulations thus far, what guaranty does the community and the DPP have that Hanapohaku and its consultants will follow rules and regulations going forward?

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Joe Wilson
Email: QwavesJoe@yahoo.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Wilson:

Thank you for your comment letter dated January 3, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I request to be a consulted party on all matters related to this development project. On May 22, 2017, I submitted a response to the Pupukea Rural Community Commercial Center Environmental Impact Statement Preparation Notice prepared by G70 on behalf of Applicant Hanapohaku LLC.*

While it is ostensibly stipulated in law by the City and County of Honolulu that all questions are to be responded to, and G70's Jeff Overton promised that such would be the case at a May 17, 2017 meeting of the Sunset Beach Community Association, the vast majority of questions posed in my comment document were not addressed, as can be seen on Pages 316-325 of the current Draft Environmental Impact Statement. Why were my questions not answered? Why should the application associated with this EIS be allowed to proceed when previous obligations, and promises, remain unfulfilled?

Response: The Draft EIS included a written response to your comments, which were provided regarding the Environmental Impact Statement Preparation Notice (EISPN). The EISPN and the Draft EIS were prepared pursuant to the Revised Ordinances of Honolulu, Chapter 25, Special Management Area, and consistent with Hawai'i Revised Statutes, Chapter 343, Environmental Impact Statement Law and Chapter 200 of Title 11, Administrative Rules, Department of Health, Environmental Impact State Rules. The response to comments met the content and procedural requirements of Chapter 343 HRS and Title 11-200 HAR.

Comment: *In addition, this EIS seems to purposefully omit detailed information regarding the impacts associated with the presence of mobile food trucks, including accurate architectural renderings.*

Since this applicant has a disturbing track record of flouting the law and DPP and DOH rules and regulations with regard to food trucks, it is imperative that an EIS for this project be required to include specifics in its data and analysis across all areas of community and environmental concern. What would be the case for proceeding without such information?

Response: The Draft EIS provided information on the proposed food trucks at the rural center. The Final EIS provides additional detail regarding the plans for operation of up to six food trucks at the new rural center. Issues relating to community and environmental concern, such as traffic and runoff, are addressed in the Final EIS Section 3.

Comment: *While other community residents and respondents are likely focusing on the environmental, health, public safety, traffic, zoning, and design concerns associated with this Environmental Impact Statement, I have questions regarding the process itself; unpermitted activities that have taken place, and continue, on the sites owned and operated by Hanapohaku LLC; and, whether, or NOT, Hanapohaku LLC is eligible to submit such permit applications before complying with the Feb. 27, 2017 Notice of Order from the City and County of Honolulu Department of Planning and Permitting.*

These questions are an attempt to ascertain a broader understanding of the comprehensive physical and natural environmental impacts of this development scheme, the broader impacts on the community, and the precedent would set for future development bids on the North Shore, and across O'ahu.

An April 8, 2017 Honolulu Star-Advertiser article by business reporter Andrew Gomes stated that: "A North Shore property owner that has racked up city fines for unpermitted construction and food truck operations is proposing to redevelop the site with more retail use after withdrawing a smaller development plan a year ago in the face of community opposition. Development firm Hanapohaku LLC [led by Andrew Yani and Lawrence "Cully" McCully Judd III] wants to build several one- and two-story buildings, space for eight food trucks and covered parking in a new bid to redevelop the 2.7-acre property across from Sharks Cove in Pupukea."

The community opposition the article referred to was articulated by local environmental organization Malama Pupukea Waimea (MPW) in the December 2016 issue of Paumalu Press: "In 2015, Hanapohaku LLC purchased three acres between the Pupukea Foodland and Pahoe Road – the old Niimi property, currently zoned as B-1 Neighborhood Commercial. Without warning or consultation with the community, and without proper permitting, the new owners began to develop in a haphazard, kapakahi style, with a wide range of unpermitted activities and violations. Ten food trucks appeared virtually overnight, and an unmanaged circus of customers and explosion in traffic followed them.

Despite having no valid Special Management Area permits for any activities on the property, for more than a year, Hanapohaku has illegally developed the property with unpermitted renovations, food trucks, lights, decks, utilities, commissaries, wastewater units, grading-grubbing, parking lots, fences, signs, and tents. Only recently, after months of community pressure, did Hanapohaku even put portable toilets on site, attempt to manage some of the parking problems, or hire a project coordinator or a professional planner. Hanapohaku has racked up a large number of apparent and reported violations under federal, State, and County laws – many of which are resulting in double fines because they remain unresolved. The developer's deliberate strategy of seeking numerous after-the-fact permits, instead of complying with the law up front, and its disrespect for the community's voice have created significant problems for its neighbors, and posed reckless pollution threats to our environment."

On May 2, 2016, the City and County of Honolulu Department of Planning and Permitting (DPP) issued a letter stating: "This responds to your request received April 13, 2016, to "cancel" the Minor SMA Use Permits issued to Hanapohaku LLC ... and to withdraw a pending application seeking a site plan modification."

The DPP letter continued: "Therefore, the permits identified by File Numbers 2015/SMA-24, 2015/SMA-47 and 2015/SMA-61, are hereby revoked. Consequently, all improvements which were authorized by these approvals must be removed, and the area restored to its pre-approval condition. Any outstanding violations associated with those approvals must also be resolved." Why did Hanapohaku LLC and owners Andrew Yani and Cully Judd not comply with that May 2, 2016 DPP directive?

Response: The approval of an SMA Minor permit in August 2017 (2017/SMA-21) and compliance with its conditions has resolved the prior issues and violations.

Comment: *Since then, over the past twelve months, as noted by reports on Hawaii News Now, KITV, and additional articles in the Honolulu Star-Advertiser and Pacific Business News, Hanapohaku LLC's illegal operations have continued, documented by the numerous Notices of Violation (NOV) issued by the City's DPP, with fines estimated to total more than $65,000.*

When those NOVs were ignored, the City's DPP issued a Notice of Order (No. 2017/NOO-062) to Hanapohaku LLC on February 27, 2017 stating that: "There are multiple violations in Special Management Area (SMA) without an SMA Use Permit. Structures include food trucks, shipping containers, loading trucks, septic tanks, wooden decks and stairs, tents, eating areas with tables and benches, signs and sheds, temporary toilets, fences, walls, parking areas, and all other unpermitted structures. Grading work was undertaken without the requires permit. Commercial activities lack an SMA Use Permit."

The Notice of Order continued: "The Department of Planning and Permitting inspected the above-described structure(s) and/or premises and found a violation of one or more ordinances of the City and County of Honolulu. As a result, Notice of Violation 2016/NOV-12-137 was issued on January 23, 2017. As of the date of this order, the violation described in the NOV has not been corrected. Because this is a recurring violation, accordingly, pursuant to the authority granted by the Revised Ordinances of Honolulu, you are hereby ordered to 1) Pay a fine of $2,000 by March 30, 2017, and 2) Correct the violation by March 14, 2017. If corrective action has not been completed by this date, a daily fine of $500 will be assessed until the correction is completed."

Did Hanapohau LLC and its owners, Andrew Yani and Cully Judd comply with this Notice of Order? If not, why not?

In a March 1, 2017 meeting, attended by Linda Schatz, Michael Hodge, Cully Judd, Andrew Yani, Dean Hamer, and myself, Yani told me that he "needed to continue the [unpermitted] food truck operations in order to generate revenue to fund the cost of the SMA permit application process." Why does Yani believe that he is exempt from DPP zoning rules and regulations, ie. the law, in order to further his personal business interests? If he and

Hanapohaku LLC are exempted, why should other business owners who already, or want to, operate on the North Shore, or anywhere on O'ahu, comply with DPP zoning rules and regulations? What should be the process to determine who is exempt and who is not? And who makes those decisions? Should there be community input into that process? If not, why not?

Response: The approval of an SMA Minor permit in August 2017 (2017/SMA-21) and compliance with its conditions has resolved the prior issues and violations.

Comment: *During his presentation on the development scheme at the May 17, 2017 meeting of the Sunset Beach Community Association, Hanapohaku LLC presentative Jeff Overton said: "In 2014, Hanapohaku came and purchased the property and there were some changes on the property over the last couple years. They began to operate on the property. There were some food trucks added, some more commercial uses, structures that were built without permits there, other operations, and that's not the way things are supposed to be done ... It was kind of the wild west there..."*

What kind of precedent would be set for future development on the North Shore, or anywhere on O'ahu, if Hanapohaku LLC was not held accountable for its documented ("wild west") violations, ongoing illegal activities, and the disruptions it has caused to neighbors, pedestrian safety and vehicular traffic along the Kamehameha Highway corridor, as well as to the physical and natural environment surrounding the Pupukea Marine Life Conservation District?

Do Mr. Overton, and other project consultants paid by Hanapohaku LLC, including lawyer Terrence Lee, believe that such illegal behavior is acceptable and that Hanapohaku LLC should be exempt from compliance? If so, why in this case? Should future development projects on the North Shore, or anywhere on O'ahu, also be exempt from the DPP's zoning rules and regulations? If not, why not? In which circumstances should a developer comply with the law, and in which not? Who is to make such determinations? If a developer was engaging in similar activities on parcels adjacent to Mr. Overton's, Mr. Lee's, Mr. Yani's, Mr. Judd's, and/or other paid project consultants' home properties, would they tolerate and support it? If so, why? If not, why not?

Response: The approval of an SMA Minor permit in August 2017 (2017/SMA-21) and compliance with its conditions has resolved the prior issues and violations.

Comment: *Now, well past the 30-day deadline set by the DPP in its February 27, 2017 Notice of Order, Hanapohaku LLC has still not paid its fine(s). The DPP Notice of Order states: "If the fine is not paid by the due date, this matter may be referred to the Department of the Corporation Counsel for civil remedy and/or the Prosecuting Attorney's Office for criminal prosecution. When this order becomes final, all unpaid civil fines imposed by this order shall be added to the taxes, fees, and charges specified in Section 20-3-4 of the Department of Planning and Permitting's Rules Relating to Administration of Codes. Such taxes, fees, and charges include, but are not limited to, driver's license and vehicle registration fees, fees for permits issued under the City Land Use Ordinance (e.g. sign permits, conditional use permits, and variances) and fees for building, demolition, grading, grubbing, stockpiling, trenching, and excavation permits."*

Why has Hanapohaku LLC not paid the fine(s)? During his May 17, 2017 Sunset Beach Community Association presentation, Mr. Overton said "Tomorrow's not too soon. We've really got to get to these things because they're affecting people on a daily basis." What's the delay? Since Hanapohaku LLC is refusing to comply with the NOO, and refusing to pay the fine(s), why should this developer be allowed to continue in a Major SMA application process? Would exempting Hanapohaku LLC from compliance with the DPP NOO and negotiating the fines down to a lower amount be fair to other businesses or developers who do follow the rules? If the DPP allows Hanapohaku LLC to continue with its Major SMA permit applications despite its lack of compliance with the DPP NOO, how would Hanapohaku LLC's Environmental Impact Statement assess and quantify the environmental impacts and community disruptions that have occurred over the past year while the project was in violation?

Response: The approval of an SMA Minor permit in August 2017 (2017/SMA-21) and compliance with its conditions has resolved the prior issues and violations. All violations have been cleared and all but one fine had been settled as of this letter response. Hanapohaku will pay the outstanding fine once it receives the settlement letter from the City Department of Planning and Permitting Division of Code Enforcement. The City's imposition of fines and settlement policies are intended to correct violations versus issuance of punitive actions.

Comment: *In an April 13, 2017 Editorial titled "Shark's Cove Place Must Regain Trust," the Honolulu Star-Advertiser noted: "The developers have met with the community to draw up the new plans for a major permit, and that turnabout was a needed first step. But they have seemed unwilling to take the next step toward a legitimate operation by first ending the illicit activity. They have opposed shutting down the operations because the food trucks that are their tenants would lose business. That argument falls short. The developers fostered this situation. And, the truck owners are free to secure permits for a more mobile business elsewhere while the permit process proceeds. These are operations that are meant to be mobile after all.*

Of course, Hanapohaku could no longer collect revenue from tenants during the interim. The whole purpose of land use regulations in the sensitive shoreline area is to allow careful review of environmental impacts before the activity is permitted – not to allow profit-taking in the meantime… There's a reason why the City takes a go-slow approach to development. Neighborhoods along the North Shore already are straining to cope with the crowds, including many tourists lured by the rustic charm and natural beauty of the place.

It takes time to define the boundaries for permitted activities. Hanapohaku needs to give the City that time, and the community the respect it deserves." Since Hanapohaku LLC has chosen to disrespect the community and the City by ignoring DPP rules and regulations thus far, what guaranty does the community and the DPP have that Hanapohaku LLC and its consultants will follow rules and regulations going forward? Based on Hanapohaku LLC's past actions, why should the community and the DPP trust Hanapohaku LLC and/or its consultants on this project going forward?

Response: The approval of an SMA Minor permit in August 2017 (2017/SMA-21) and compliance with its conditions has resolved the prior issues and violations. The Final EIS presents the latest information on the Pūpūkea Rural Community Commercial Center. Once approved, the activities on the property approved under the SMA Minor Permit will be entirely removed for construction of the new rural center.

Comment: *During his presentation at the May 17, 2017 Sunset Beach Community Association meeting, Hanapohaku LLC representative Jeff Overton asserted that "Malama Pupukea Waimea... said to pull back, don't go to zero" - in reference to the number of food trucks allowed to operate on the property. When the accuracy of his statement was challenged by community member Larry McElheny, Overton tried to walk it back by saying: "We have no stamped document that says exactly what was agreed to." When asked for comment on Overton's assertion, Malama Pupukea Waimea spokesperson Denise Antolini said: "MPW has always said to go back to baseline (conditions at time of purchase) and then going forward, only what is legal."*

If Overton's statement was not verifiably accurate, and an arrangement had not been "agreed to," was he deliberately attempting to mislead or confuse the public on these details in order to achieve a more beneficial outcome for his client? If not, what was the intention of the statement he made at the Sunset Beach Community Association meeting about Malama Pupukea's position?

Response: The Sunset Beach Community Association requested Hanapohaku LLC (via G70) to address the state of the current commercial operations. The discussion was very productive in presenting plans and understanding community concerns. Subsequent planning for interim use of the site led to the application for an SMA Minor permit, which was approved in August 2017 (2017/SMA-21). The briefing also addressed the long-term plans for the Rural Community Commercial Center. The owner has continued to maintain a close dialogue with the community in follow up meetings with SBCA and the NS Neighborhood Board No 27.

Comment: *Another misleading statement was included in the EISPN, prepared on behalf of Hanapohaku LLC by G70. Section 5.1 NO-ACTION ALTERNATIVE of the EISPN states: "The No-Action Alternative would maintain the property in its existing condition, with the limited allowed commercial uses per the existing SMA Minor permit. The uses include the real estate office, dentist office, surf and clothing store, and one food truck establishment." As has been clearly established, the real estate office and dental office have been gone from the property for some time, replaced by approximately eight unpermitted food trucks.*

What was the intent of including the inaccurate and misleading statement about the property's existing condition in the EISPN? What other inaccuracies are contained within the current EIS? What is being done to correct them? With such inaccuracies, what trust can the public and the DPP place in the process going forward?

Based on these and other outstanding questions and concerns, the City and County of Honolulu Department of Planning and Permitting should NOT allow Hanapohaku LLC to proceed with SMA Major permit applications or EIS reviews until it complies in full with DPP's original May

2, 2016 directive, the February 27, 2017 Notice of Order, and pays the total amount of fines accrued for its numerous and ongoing violations.

Response: The applicant has complied with the requirements of the City through approval of the SMA Minor Permit (2017/SMA-21) and compliance with its conditions, including the resolution of violations and settlement of fines.

Comment: *As for the Draft Environmental Impact Statement, the November 30, 2017 Editorial published by the Honolulu Star-Advertiser covered several of the most important over-arching questions well: Honolulu Star-Advertiser – Editorial "Sharks Cove plan draws skepticism" November 30, 2017.*

A "rural community commercial center" doesn't seem the sort of thing to inspire neighborhood resistance. But this is Oahu's North Shore, where the "rural" part of that concept can easily succumb to urban pressures, especially around the visitor industry.
The proposal for the $18 million center, proposed for a 2.7-acre property across from Sharks Cove, thus merits careful scrutiny to determine whether that precarious balance can be maintained with such a project. The public will get that chance to weigh in on the retail complex, which is seeking a key permit that requires a detailed environmental review under state law.

There is some history with the community here, and that complicates things. Hanapohaku LLC is the developer of the project, which would replace unpermitted food-truck operations and construction on the site for which the developer has paid fines. The center is proposed for three parcels adjoining the Foodland property in Pupukea, and must secure a special management area (SMA) permit. According to the draft environmental impact statement, the supermarket parcel is linked to the Hanapohaku project through a 1996 development agreement providing for cooperation among the property owners.

Hanapohaku is led by Andrew Yani, and there's already been a dispute between the company and the community because a previous plan got around public review requirements and shoreline protection rules, including the illicit food trucks. So the redesign was sure to have critics looking askance at three buildings with a total of 27,500 square feet of leasable space. It also would accommodate as many as eight food trucks.

The developers will need to mount a persuasive case to overcome a trust deficit with many in the community. What worries the community, rightly, is the potential disruption it could pose. The developers insist that the new project would meet zoning rules by adding "neighborhood businesses" that primarily serve area residents. Tenants could include a restaurant, pharmacy, medical clinic, bank, deli, copy shop, yoga studio, real estate office, child care center, art gallery, clothing store, surf shop and office space for a community organization, according to the draft EIS.

But community groups assert that the uses are likely to drift toward establishments that cater to, and would attract, a tourist clientele. Visitors already would be drawn by North Shore beach attractions such as Sharks Cove and would inevitably drive the retail market. Hanapohaku has an SMA permit to allow existing commercial uses to continue for now. A

recent traffic impact assessment projects that the draw would comprise 1,322 more vehicles a day but concludes that this won't seriously compound traffic woes. Mitigating improvements would include a turning lane on crowded Kamehameha Highway and a shared driveway with Foodland. The question to be answered: Will this be enough?

In addition, some firm plans for tenants that suit the community's retail and business needs will need to be made. The North Shore could benefit from businesses, but only to a point — and Hanapohaku will have to prove it stays within limits that make sense.

Response: The Star Advertiser editorial includes many points of interest, and one question related to traffic flow associated with the rural center and mitigation measures. A Traffic Impact Assessment Report (TIAR) prepared by Fehr & Peers is included in the EIS. Traffic flow will not be adversely affected by the rural center operations. The State Department of Transportation Highways Division, the City Department of Planning and Permitting – Traffic Review Branch, and the City Department of Transportation Services have reviewed the traffic report and Draft EIS. The State and City have recommended mitigation measures be implemented in association with the public transportation facilities.

Comment: *I have additional questions and comments pertaining to the initial development plan. Many of these require baseline data collection that should be started before a permit application is even considered.*

1. Function of the Development: The North Shore Sustainable Communities Plan defines a rural community-based commercial center as one that "meet the needs of the surrounding residential communities." A requirement for considering an SMA permit should be that the development will serve residents. This will require consideration of the precise retail activities planned and collecting external data on the likely customers.

Current Questions: What percentage of customers at the site are expected to be residents? How does this break down in terms of each retail activity planned? What data sources and methods are you using for these projections?

Future Questions: What guarantee is there that the proposed retail activities are what will actually happen in the area? If a tenant leaves, what will be the requirements for the replacement? Does DPP currently enforce such regulations?
Response: The owners of the rural center have prioritized local Hawai'i based businesses for the leasing of tenant spaces, particularly those with North Shore roots. The specific businesses committed with letter of intent for the rural center include Waialua Federal Credit Union, Island Urgent Care, North Shore Surf Shop, Seamaids, The Spot, North Shore Tacos and others are in discussion. These are all Hawai'i based enterprises, with some from the North Shore community.

The North Shore SCP was amended to Ordinance Chapter 24, Article 8, providing a vision for future development and to serve as a policy guide with more detailed zoning maps and regulations. The policies and guidelines from the North Shore Sustainable Communities Plan are therefore incorporated into ordinance including:

- Range of Goods & Services to Meet the Needs of Surrounding Residential Communities
- Center attracts Visitors & Residents from Outside the Immediate Community
- Commercial Establishments May Include: Grocery Stores, Sundries Stores, Restaurants, and Other Services and Shops Catering to Residents and Visitors

(emphasis added). These same points are included in EIS Chapter 2. As stated in the EIS *Section 2.4* Proposed Action, the rural center will expand the services and goods available to residents of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors, and add services not otherwise available in the vicinity. The landowner's vision includes creating a place where local businesses can conduct operations to serve the Sunset Beach-Pūpūkea community and its visitors.

The increase in visitor numbers over the past decade State- and island-wide is well documented by multiple sources and are not attributable to a single development. The rural community commercial center will support the same communities as Foodland, and visitors from other communities on O'ahu or from out-of-state that come to see the famed North Shore beaches and snorkel the popular Sharks Cove.

Comment: *2. Congestion: The number of visitors to the site is of major importance for traffic hindrance by pedestrian crossings, potential pollution from toilet use, etc. A requirement for considering an SMA permit should be an accurate projection of congestion caused by the development.*

Questions: What number of customers are expected to visit the site? How was this number determined, and for what specific times periods? How does this compare to the current number of visitors?

Response: The Traffic Impact Assessment Report (TIAR) addresses the standard traffic engineering practice for assignment of vehicle trips associated with the rural center, based on the commercial uses and floor area. The site infrastructure at the rural center also follows City and State code which requires the design to accommodate the demands for public restrooms based on the commercial uses and floor area. The commercial uses are planned at only 25% of allowable floor area, therefore, the site is designed at a modest scale consistent with the surrounding area and existing Foodland store at the rural center.

Comment: *3. Traffic Control: Traffic is one of the most serious concerns of north shore resident. A requirement for considering an SMA major permit should be accurate, data-based projections of traffic. Questions: What are the (1) total number of vehicles; (2) throughput; (3) time headway; (4) average and maximal delay period expected at the site of the development? How are these numbers determined and modeled, and for what specific times periods?*

Response: There is no specific requirement for traffic studies in Chapter 25 ROH, as the focus is on coastal resources. The owners are sensitive to the community concerns about future traffic conditions, and committed to this for the EIS review process. A Traffic Impact

Assessment Report (TIAR) was commissioned to address existing and future conditions with the rural center. EIS Section 3.13 and Appendix F include details on traffic analysis.

In summary, the estimates of increased vehicle trips include two calculations. One is a growth factor anticipated without the project ("near term baseline"), and the second is an estimate of vehicle trips to the rural center using rates published by the Institute of Transportation Engineers for specialty retail centers. The near-term baseline conditions were calculated using a conservative one-percent annual growth factor.

The impact of one-percent increased traffic would not change the LOS, however, an additional potential delay traveling through the Kamehameha Highway / Pūpūkea Road intersection could be up to eight-tenths of a second (0.8) more (from Saturday peak hour delay of 8.4 seconds currently, to a possible delay per vehicle of 9.2 seconds). See EIS Tables 3.3 and 3.4, and Appendix F.

Estimates for new vehicle trips on the highway and Pūpūkea Road with development of the project site total 926 net new daily vehicle trips. The estimate represents vehicle movements in and out of the project driveway, not vehicles. During midday and evening peak hours, a total of 65 net new trips (29 inbound to the center and 36 outbound from the center) are anticipated; Saturday midday peak hours total 98 (51 inbound and 47 outbound). "Pass-by" trips are added, which represent vehicles already on the highway that decide to turn into and out of the site. Daily trips at midday and evening peak hours, including new vehicles and pass-by trips, then total 93, with 140 vehicle trips on Saturday midday peak hours (EIS Appendix F, Table 6).

The impact of the increased traffic related to the project at the intersection of Kamehameha Highway and Pūpūkea Road would continue at LOS A during both peak hours of traffic, with LOS B during Saturday peak hour traffic. The potential delay for a vehicle under LOS B conditions would be an additional 1.7 seconds over the near-term baseline conditions (EIS Table 3-4).

Comment: *4. Environmental Concerns: There is considerable debate among marine conservationists about the appropriate means to measure and predict the environmental impacts of developments such as the proposed Sharks Cove commercial center that will exist and probably grow for many years past the immediate permitting period. For example, while the immediate effects of the development on water quality might be quantifiable, what about the long-term effects of years and decades of car exhaust, runoff from commercial areas, etc.?*

Given Hanapohaku's recent history of ignoring the law, there is justifiable concern that they will select environmental evaluators that place more value of giving a "clean" recommendation than on those that have more long-term concerns and approaches. Questions: Who will choose the evaluators for each section of the SMA permit? Would Hanapohaku allow environmental organizations to be involved in the process? Would Hanapohaku agree to accept recommendations from an outside, objectively chosen experts?

Response: The City Department of Planning and Permitting (DPP) is the approving agency for acceptance of the EIS. DPP will review the Special Management Area (SMA) Use Permit

application and makes a recommendation to the Honolulu City Council, which will be the decision authority for the SMA Resolution. DPP takes advisory input on the EIS and SMA Application from the State and County agencies with responsibilities for the management of natural and cultural resources and public infrastructure.

Comment: *With regard to an application for a Minor SMA permit: 1) Function of the Development: The North Shore Sustainable Communities Plane* [sic] *defines a rural community-based commercial center as one that "meet the needs of the surrounding residential communities." However, the illegal development at Sharks Cove that Hanapohaku has carried out since 2014 has clearly resulted in attracting tourists rather than local residents, which is obvious from the large number of shiny rental cars that are parked in and across the highway from the development. A requirement for granting the minor SMA permit should be that the planned activities are aimed at improving the property to meet the needs of residents. This in turn requires baseline data on the current usage of the facility and specific plan for bringing the development into compliance with zoning law. Data Questions: What percentage of customers at the site are residents? How was this number determined, and for what specific times periods? If these numbers have not been obtained, what are the developers plans to do so in the future? How and when? Planning Questions: How will the proposed activities increase the proportion of residential users? How was your estimate obtained?*

Response: The existing project operates as a valid commercial use of the property pursuant to the approved SMA Minor Permit 2017/SMA-21. The DPP determined that the uses of the property are consistent with the guidelines for a Rural Community Commercial Center as defined by the NS Sustainable Communities Plan. There is no requirement to quantify the number of patrons or their place of residence. The current commercial uses will be removed with the construction of the rural center.

Comment: *With regard to an application for a Minor SMA permit: 2) Congestion*
The illegal post-2014 development at Sharks Cove has resulted in a large increase in the number of people visiting the site. This contributes to traffic hindrance by pedestrian crossings, potential pollution from toilet use, etc. A requirement for granting the minor SMA permit should be that the planned activities are aimed at decreasing the congestion. This necessitates baseline data on customer use and demonstration of how the alterations will ameliorate the situation. Data Questions: What number of customers visit the site.? How was this number determined, and for what specific times periods? If these numbers have not been obtained, what are the developers plans to do so prior to the minor SMA permit activities? How and when? Planning Questions: How do the proposed activities reduce congestion. How was your estimate obtained? (Please provide modeling details.)

Response: The existing project operates as a valid commercial use of the property pursuant to the approved SMA Minor Permit 2017/SMA-21. The approval allowed for a reduction in commercial uses in comparison to the period preceding August 2017. There is no requirement to quantify the number of patrons. The current commercial uses will be removed with the construction of the rural center.

Comment: *With regard to an application for a Minor SMA permit: 3) Traffic Control. Since the illegal post-2014 development at Sharks Cove there has been an obvious increase in traffic*

in the area, often resulting in long delays just to get to the stoplight at Pupukea Road. A requirement for granting the minor SMA permit should be that the planned activities are aimed at decreasing the traffic that has been increased by the illegal development. This necessitates baseline traffic data and quantitative evidence for improvement. Data Questions: What number of cars visit the site? How was this number determined, and for what specific times periods? If these numbers have not been obtained, what are the developers plans to do so prior to construction activities. Planning Questions: How will the proposed activities effect (1) total number of vehicles; (2) throughput; (3) time headway; (4) average and maximal delay period? (Please provide modeling details.)

Response: The existing project operates as a valid commercial use of the property pursuant to the approved SMA Minor Permit 2017/SMA-21. The approval allowed for a reduction in commercial uses in comparison to the period preceding August 2017. There is no requirement to quantify the number of vehicles associated with the current use. The current commercial uses will be removed with the construction of the rural center.

Comment: *With regard to an application for a Minor SMA permit: 4) Parking Lot. The SMA minor permit request includes permission for an asphalt parking lot. Developers state this is necessary for the amount of traffic they are generating. This is a classic example of using illegal development as a quasi-rationale for further development. That is, the developers build a bunch of stuff illegally, then ask for permission to build yet more to satisfy the demand they have generated in violation of the rules and regulations. Question: If the major SMA permit is not granted (as appears likely based on previous history at this site), will the parking lot be removed? How will the land be restored?*

Response: The existing project operates as a valid commercial use of the property pursuant to the approved SMA Minor Permit 2017/SMA-21. The approval requires the installation of an all-weather parking surface. The current commercial uses will be removed with the construction of the rural center. Without approval of the SMA Major Permit, the parking area will be retained in its current form.

Comment: *Process Issues. It is well known, both from multiple articles in the press and from the DPP's publication of multiple violations, that the current mess at Sharks Cove was the result of improperly or unpermitted, illegal activities. In fact, the owners and developers have confessed and apologized for this at public meetings. They have also openly admitted that they have no intent to comply with the clear May 3, 2016 DPP directive that "all improvements which were authorized by these (prior) approvals must be removed, and the area restored to its pre-approval condition." I asked the owners, at a private meeting at their offices, why they are flaunting the law. The answer was simple: to generate the cash needed to apply for legal permits. This raises a serious question of process going forward. If the DPP allows Hanapohaku to obtain any permit for development at Sharks Cove at the current point in time, even while they are in violation of DPP regulations, and making money from it, it sends a clear message to other developers: "The best way to develop on the north shore is to ignore the law and do it yourself.... You can always fix it up later." Questions: If Hanapohaku is exempt from DPP regulations, why should other business owners on the North Shore, or anywhere on O'ahu, comply with DPP zoning rules and regulations? Given Hanapohaku's disrespect for the community and the City by ignoring DPP rules and regulations thus far, what guaranty does*

the community and the DPP have that Hanapohaku and its consultants will follow rules and regulations going forward?

Response: Since early 2017, the owner formulated a plan to reduce commercial uses and manage the land under a plan for a comprehensive SMA Minor Permit, which was approved by the City DPP in August 2017 (2017/SMA-21). Although there were some past transgressions, the owners have corrected violations on the property and operated in compliance with the SMA Minor Permit.

The owners have taken great strides to engage a qualified professional team to listen closely to the community and design a project which is consistent with the NSSCP policies and objectives for the Rural Community Commercial Center. It is recognized from your comments that the project brings concerns about the scale and type of development. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. We welcome your continued involvement in this planning process, as it is this community's care and attention to good planning that helps to retain the special qualities we all value.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Jon Whittington <jon.whittington@yahoo.com>
Sent: Thursday, January 4, 2018 2:23 PM
To: ashaw@honolulu.gov
Cc: Pupukea Rural Community Ctr; Andrew Yani
Subject: HanaPohaku

Sirs,

I'm a North Shore homeowner and Honolulu resident and I support HanaPohaku as a welcome addition to the North Shore community.

What I like most about the project is that it brings needed diversity to the North Shore in that it will contain some retail, restaurants and even banking outside of Haleiwa town. My family and are sure to be visiting it often.

Traffic is always a concern on the North Shore however it's my view that HanaPohaku won't add to the drastic traffic situation as the center will likely attract those already living or visiting the North Shore versus being a destination or reason to make the trek.

Thank you for your ear on this and please reach out to me directly should you have any questions or comments.

Aloha
Jon Whittington

_____
Jon Whittington / jon.whittington@yahoo.com (personal email) / +1808.227.2600 (mobile)

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Jon Whittington
Email: jon.whittington@yahoo.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Whittington:

Thank you for your email dated January 4, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I'm a North Shore homeowner and Honolulu resident and I support HanaPohaku as a welcome addition to the North Shore community.*

What I like most about the project is that it brings needed diversity to the North Shore in that it will contain some retail, restaurants and even banking outside of Haleiwa town. My family and are sure to be visiting it often.

Traffic is always a concern on the North Shore however it's my view that HanaPohaku won't add to the drastic traffic situation as the center will likely attract those already living or visiting the North Shore versus being a destination or reason to make the trek.

Thank you for your ear on this and please reach out to me directly should you have any questions or comments.

Response: We appreciate that you made the time to voice your support for the proposed rural community commercial center at Pūpūkea. The owners are committed to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

ARCHITECTURE // CIVIL ENGINEERING // INTERIOR DESIGN // PLANNING & ENVIRONMENT

From: Larry McElheny <lkmcelheny@gmail.com>
Sent: Monday, January 8, 2018 4:43 PM
To: ashaw@honolulu.gov; Pupukea Rural Community Ctr
Subject: Larry McElheny Hanapohaku EIS comments
Attachments: eis comments.pages; eis comments.doc

please see attached:

Mahalo,

Larry McElheny

Larry McElheny
59-272 Pupukea Road
Haleiwa, 96712
(808) 638-8484

January 7, 2018

EIS comments

"Pupukea Rural Community Commercial Center"

Draft Environmental Impact Statement / November 2017

Applicant: Hanapohaku LLC

Prepared by G70 / Contact Jeff Overton

To Whom it May Concern

The numerous inaccuracies, contradictions, omissions and misrepresentations involved in this draft EIS will be addressed by other commenters. I will focus my comments as follows:

If You Tell a Lie, Tell a Big One

Because the Draft EIS does not accurately describe a Rural Community Commercial Center, the title of this Draft EIS is inappropriate and the Draft EIS is fatally flawed. It is built on the false premise that the proposed project fits the definition and objectives of a rural community commercial center. It does not.

A rural community commercial center is intended to:

"meet the needs of the surrounding residential communities"

"emphasize commercial and civic establishments that serve the immediate residential community"

"limit country stores primarily to retail uses that provide services to the surrounding community"

While tourists and visitors are acknowledged in the North Shore Sustainable Communities Plan regarding the Rural Community Commercial Center, it is crystal clear that the intent is to provide goods and services primarily to the immediate residential community------not to serve as a visitor destination.

Anecdotal evidence indicates that approximately 70% to 80% of Pupukea Foodland's customers are visitors.

In his November 1, 2017 response letter to John Thielst, Mr. Overton writes: "Patronage of the commercial venues by local residents is a primary emphasis." (Wrong ! It is **the** primary emphasis in a Rural Community Commercial Center) Overton continues: "However, as witnessed by the patronage of the Foodland Pupukea store, many are attracted to the area by Sharks Cove, Pupukea Beach Park, and the Marine Life Conservation District. The rural center must also serve the needs of these visitors to the area, consisting of other O'ahu residents and tourists."

Mr. Overton's attitude and misleading interpretation of the Rural Community Commercial Center guidelines is troubling.

Is it not reasonable to expect that Hanapohaku's visitor numbers would mimic Foodland's ?

What is the actual percentage of Foodland's customers that are not local residents ?

What assurances are there that the proposed development will not devolve into a carnival-like tourist destination ?

A rural community commercial center is intended to serve surrounding community--------not become a visitor destination. There is long standing agreement that such a center is the desired use for these properties.

On the other hand, due to evolving circumstances, primarily regarding the uncertain future of Kamehameha Highway, the No-Action Alternative or perhaps some form of a conservation option may be more desirable. Please read on.

Human Nature vs Mother Nature

Our community is being over run by visitors------with residents being displaced in the process----there must be limits established. Traffic is the most obvious indication of this serious problem.

1. Two lane Kamehameha Highway is the sole artery connecting coastal communities from Haleiwa to Kahaluu.

2. The current excess volume of traffic on Kamehameha Highway is unacceptable. Any proposal that would add additional traffic is unconscionable.

3. Not only is the current situation unacceptable, due to extensive coastal erosion at several locations (Laniakea, Sunset, Hauula, Punaluu, Kaaawa and Kualoa) the future of this critical transportation link is in serious jeopardy.

Foodland's Social Responsibility

On page 1-9 of the draft EIS Mr. Overton writes:

"The fourth parcel covered by the project is the 1.84-acre parcel on which the Foodland grocery store is located (the "Foodland parcel"), which is owned by The Sullivan Family Limited Partnership and the Maurice and Joanna Sullivan Family Foundation (collectively the Sullivan Entities)."

3

He continues: "none of the Sullivan Entities or Foodland Super Market, Limited is involved in the subject project as it relates to the three Hanapohaku LLC parcels; and none of the Sullivan Entities or Foodland Super Market, Limited holds any interest in Hanapohaku LLC."

On the next page (1-10) he continues:

"The Foodland parcel is tied to the project through a 1996 development agreement that provides for cooperation between the owners of the four parcels to achieve mutual benefits of an integrated neighborhood shopping center. The Environmental Impact Statement (EIS) and SMA Use Permit processes evaluate the properties as a single project, though only minor improvements are anticipated to the Foodland parcel, such as a parking lot improvements and landscaping."

Why are these two contradictory statements included ?

It is my contention that Foodland and the Hanapohaku properties are inextricably linked physically, by the 1996 development agreement and by the owner's responsibilities to the surrounding communities.

The delivery situation at the Pupukea Foodland, whereby large trucks dangerously block Pupukea Road on a daily basis, needs to be corrected.

Potential changes on these adjoining properties offer an opportunity for Pupukea Foodland to re-locate their loading dock via some creative thinking and minimal property acquisition.

Due to its success and its stature in the community, Foodland is in a position to take on a leadership role in helping to "preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawaii."

Our community has been blessed with an incredible number of unique and fragile environmental features. These priceless assets include, among others, Sharks Cove, Pupukea Beach Park, and the Marine Life Conservation District.

4

Each of these areas contribute significantly to making the North Shore the global treasure it is.

It is everyone's responsibility to remain constantly vigilant that the lure of tourism dollars does not induce poorly planned commercialization, sloppy enforcement of land use laws, lack of regulation and the resulting degradation of the precious natural environment.

Sincerely,

Larry McElheny

5

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Larry McElheny
59-272 Pupukea Road
Haleiwa, Hawai'i 96712
Email: lkmcelheny@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. McElheny:

Thank you for your comment letter dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *The numerous inaccuracies, contradictions, omissions and misrepresentations involved in this draft EIS will be addressed by other commenters. I will focus my comments as follows: If You Tell a Lie, Tell a Big One. Because the Draft EIS does not accurately describe a Rural Community Commercial Center, the title of this Draft EIS is inappropriate and the Draft EIS is fatally flawed. It is built on the false premise that the proposed project fits the definition and objectives of a rural community commercial center. It does not. A rural community commercial center is intended to: "meet the needs of the surrounding residential communities" "emphasize commercial and civic establishments that serve the immediate residential community" "limit country stores primarily to retail uses that provide services to the surrounding community"*

While tourists and visitors are acknowledged in the North Shore Sustainable Communities Plan regarding the Rural Community Commercial Center, it is crystal clear that the intent is to provide goods and services primarily to the immediate residential community------not to serve as a visitor destination. Anecdotal evidence indicates that approximately 70% to 80% of Pupukea Foodland's customers are visitors.

Response: The project must comply with B-1 Zoning, which is codified in the applicable Honolulu City and County zoning ordinances described in EIS *Section 3.10*. The Land Use Ordinance (LUO) General Development Standards, Chapter 21, identifies the B-1 Neighborhood Business District zoning parameters for development such as the maximum density floor area ration (FAR) and maximum height. The *North Shore Sustainable Communities Plan* (NSSCP) was amended to Ordinance Chapter 24, Article 8, providing a vision for future development and to serve as a policy guide with more detailed zoning maps and regulations. The policies and guidelines from the North Shore Sustainable Communities Plan are therefore incorporated into ordinance including:

- Range of Goods & Services to Meet the Needs of Surrounding Residential Communities

- Center attracts Visitors & Residents from Outside the Immediate Community
- Commercial Establishments May Include: Grocery Stores, Sundries Stores, Restaurants, and Other Services and Shops Catering to Residents and Visitors (emphasis added)

These same points are included in EIS Chapter 2. As stated in the EIS *Section 2.4* Proposed Action, the rural center will expand the services and goods available to residents of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors, and add services not otherwise available in the vicinity. The landowner's vision includes creating a place where local businesses can conduct operations to serve the Sunset Beach-Pūpūkea community and its visitors.

An analysis of visitors to Pūpūkea Beach Park published in *Recreation Carrying Capacity and Management at Pūpūkea Marine Life Conservation District on Oahu, Hawai'i* by Needham et al. (2008), provided an analysis from visitor data collected at three sites in Pupukea MLCD: Waimea Bay; Three Tables; and Sharks Cove. A majority of respondents to the survey were from Hawai'i (44 percent). The rural community commercial center will support the same communities as Foodland, which includes visitors from other communities on O'ahu and from out-of-state that come to see the famed North Shore beaches and snorkel the popular Sharks Cove.

Comment: *In his November 1, 2017 response letter to John Thielst, Mr. Overton writes: "Patronage of the commercial venues by local residents is a primary emphasis." (Wrong ! It is the primary emphasis in a Rural Community Commercial Center) Overton continues: "However, as witnessed by the patronage of the Foodland Pupukea store, many are attracted to the area by Sharks Cove, Pupukea Beach Park, and the Marine Life Conservation District. The rural center must also serve the needs of these visitors to the area, consisting of other O'ahu residents and tourists." Mr. Overton's attitude and misleading interpretation of the Rural Community Commercial Center guidelines is troubling. Is it not reasonable to expect that Hanapohaku's visitor numbers would mimic Foodland's ? What is the actual percentage of Foodland's customers that are not local residents ?*

Response: Please see the previous response.

Comment: *What assurances are there that the proposed development will not devolve into a carnival-like tourist destination? A rural community commercial center is intended to serve surrounding community-not become a visitor destination. There is long standing agreement that such a center is the desired use for these properties. On the other hand, due to evolving circumstances, primarily regarding the uncertain future of Kamehameha Highway, the No-Action Alternative or perhaps some form of a conservation option may be more desirable. Please read on. Human Nature vs Mother Nature. Our community is being over run by visitors-with residents being displaced in the process-there must be limits established. Traffic is the most obvious indication of this serious problem. (1) Two lane Kamehameha Highway is the sole artery connecting coastal communities from Haleiwa to Kahaluu. (2) The current excess volume of traffic on Kamehameha Highway is unacceptable. Any proposal that would add additional traffic is unconscionable. (3) Not only is the current situation unacceptable, due to extensive coastal erosion at several locations (Laniakea, Sunset, Hauula, Punaluu, Kaaawa and Kualoa) the future of this critical transportation link is in serious jeopardy.*

Response: EIS *Section 3.19* identifies traffic as an unresolved community issue. Traffic volumes continue to grow due to the ambient island-wide traffic growth and increasing visitor attention to the North Shore's towns, beaches and mountain trails. Regional traffic mitigation solutions have been posed, such as establishing beach shuttles with organized public parking at lands in Hale'iwa and Turtle Bay. The timing for implementing such traffic management solutions is undetermined.

The traffic section of the EIS summarizes the impact on highway traffic – which is not considered significant under either State or County transportation department criteria – as a delay of an additional 1.7 seconds over the near-term baseline conditions at the intersection of Kamehameha Highway and Pūpūkea Road.

Comment: ***Foodland's Social Responsibility***

On page 1-9 of the draft EIS Mr. Overton writes:
"The fourth parcel covered by the project is the 1.84-acre parcel on which the Foodland grocery store is located (the "Foodland parcel"), which is owned by The Sullivan Family Limited Partnership and the Maurice and Joanna Sullivan Family Foundation (collectively the Sullivan Entities)." He continues: "none of the Sullivan Entities or Foodland Super Market, Limited is involved in the subject project as it relates to the three Hanapohaku LLC parcels; and none of the Sullivan Entities or Foodland Super Market, Limited holds any interest in Hanapohaku LLC." On the next page (1-10) he continues: "The Foodland parcel is tied to the project through a 1996 development agreement that provides for cooperation between the owners of the four parcels to achieve mutual benefits of an integrated neighborhood shopping center. The Environmental Impact Statement (EIS) and SMA Use Permit processes evaluate the properties as a single project, though only minor improvements are anticipated to the Foodland parcel, such as a parking lot improvements and landscaping." Why are these two contradictory statements included?

It is my contention that Foodland and the Hanapohaku properties are inextricably linked physically, by the 1996 development agreement and by the owner's responsibilities to the surrounding communities.

Response: In compliance with the 1996 development agreement, the redevelopment plans for the Hanapohaku parcels included two proposed connections with the Sullivan Entities land. Depending on improvements at the boundary, a Conditional Use Permit for Joint Development may be required by the Department of Planning and Permitting for the Hanapohaku and Foodland parcels. This potential permit requirement has been added to *Table 1-1* in the Final EIS.

Comment: *The delivery situation at the Pupukea Foodland, whereby large trucks dangerously block Pupukea Road on a daily basis, needs to be corrected. Potential changes on these adjoining properties offer an opportunity for Pupukea Foodland to re-locate their loading dock via some creative thinking and minimal property acquisition. Due to its success and its stature in the community, Foodland is in a position to take on a leadership role in helping to "preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawaii."*

Response: Existing traffic conditions and recommended mitigation to minimize impacts due to the project are documented in the Transportation Impact Analysis Report (TIAR),

included as EIS *Appendix F.* To minimize delays caused by trucks accessing Foodland's loading dock, deliveries should be scheduled during off-peak times in the early afternoon. This recommendation has been added to EIS *Section 3.13.2* Vehicle Circulation.

Comment: *Our community has been blessed with an incredible number of unique and fragile environmental features. These priceless assets include, among others, Sharks Cove, Pupukea Beach Park, and the Marine Life Conservation District. Each of these areas contribute significantly to making the North Shore the global treasure it is. It is everyone's responsibility to remain constantly vigilant that the lure of tourism dollars does not induce poorly planned commercialization, sloppy enforcement of land use laws, lack of regulation and the resulting degradation of the precious natural environment.*

Response: The owners have taken great strides to engage a qualified professional team to listen closely to the community and design a project which is consistent with the NSSCP policies and objectives for the Rural Community Commercial Center. It is recognized from your comments that the project brings concerns about the scale and type of development. Given the prior proposal for this property from over a decade ago, the plans for this rural center shape a much more positive and integrated approach for the long term. We welcome your continued involvement in this planning process, as it is this community's care and attention to good planning that helps to retain the special qualities we all value.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Liam <liammcnamara@hawaii.rr.com>
Sent: Monday, January 8, 2018 9:57 AM
To: ashaw@honolulu.gov
Cc: Pupukea Rural Community Ctr; Hanapohaku Sma Minor Email List
Subject: Support of Hanapohaku project

My name is Liam Mcnamara

40 year north shore resident!

Currently my family consists of over 30 north shore residents.

Our family owns 8 houses on the north shore.

My family are all in support of the project because it will add more jobs, it will be a very good opportunity for my family to have a place to eat Shop and utilize its many needed businesses

We are very fortunate that Hanapohaku LLC are the owners as they are very aware of the communities needs!!

Aloha and Mahalo

The Mcnamara family!!

Sent from my iPhone

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Liam McNamara
Email: liammcnamara@hawaii.rr.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. McNamara:

Thank you for your email dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *40 year north shore resident!*

Currently my family consists of over 30 north shore residents.

Our family owns 8 houses on the north shore.

My family are all in support of the project because it will add more jobs, it will be a very good opportunity for my family to have a place to eat Shop and utilize its many needed businesses

We are very fortunate that Hanapohaku LLC are the owners as they are very aware of the communities needs!!

Response: We appreciate that you made the time to voice your support for the proposed rural community commercial center at Pūpūkea. The owners are committed to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Andrew Yani <andrew@hanapohakullc.com>
Sent: Thursday, December 21, 2017 10:12 AM
To: Pupukea Rural Community Ctr
Cc: michael@hanapohakullc.com
Subject: Fwd: Sharks Cove Plan

Sent from my iPad

Begin forwarded message:

From: Maia Rosen <maiar22@gmail.com>
Date: November 30, 2017 at 2:49:42 PM HST
To: ashaw@honolulu.gov, hanapohakullc@gmail.com
Subject: Sharks Cove Plan
Reply-To: maiar22@gmail.com

Aloha,
I am writing in opposition to the plan to develop the area adjacent to Foodland across from Shark's Cove. I am a full time resident on the east side of Honolulu, born and raised on Oahu. Although I don't live on the North Shore, like many Oahu residents, I have enjoyed the "country" since I was a little kid. Kama'aina have been able to stave off development for quite some time but of course, the north shore has changed substantially, especially in the last ten years.

I think it would be such a shame to develop that piece of land. People come to the north shore to experience the unspoiled beauty of places like Shark's Cove. Each time we put in another strip mall, we lose something irreplaceable.

Who is this development really going to serve? The developer has listed the types of establishments that could potentially rent there but they could easily all become tourist traps rather than businesses that cater to local people.

Please keep the country country!!!

Maia Rosen
808-286-1809

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Maia Rosen
Email: maiar22@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Rosen:

Thank you for your email dated November 30, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I am writing in opposition to the plan to develop the area adjacent to Foodland across from Shark's Cove. . . . I think it would be such a shame to develop that piece of land. People come to the north shore to experience the unspoiled beauty of places like Shark's Cove. Each time we put in another strip mall, we lose something irreplaceable.*

Who is this development really going to serve? The developer has listed the types of establishments that could potentially rent there but they could easily all become tourist traps rather than businesses that cater to local people.

Please keep the country country!!!

Response: The North Shore Sustainable Communities Plan (NSSCP) guides development for the region and was prepared with years of input from community members. Among the land uses defined in the NSSCP, the 4.56 acres with existing B-1 Neighborhood Business District that includes the existing Foodland grocery store was identified as the location to consolidate existing and future commercial use.

The Rural Community Commercial Center will expand the services and goods available to residents of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors. The modest development plan utilizes approximately 25 percent of the floor area ratio (FAR) allowed under City land use ordinance for this property and is consistent with the design guidelines of the NSSCP.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

ARCHITECTURE // CIVIL ENGINEERING // INTERIOR DESIGN // PLANNING & ENVIRONMENT

From: Marina Zannino <mari.zannino@gmail.com>
Sent: Monday, January 8, 2018 2:00 AM
To: Pupukea Rural Community Ctr
Cc: ashaw@honolulu.gov; hanapohakullc@gmail.com
Subject: Sharks Cove Benthic Community Misrepresentation
Attachments: Sea Cucumbers (1).docx

Aloha,

After reading the marine survey relied upon by the DEIS, I strongly suggest that a new survey be conducted for the benthic community in Shark's Cove and the surrounding MLCD by a more credible marine consultant. In the summer of 2015, I performed a biological survey of sea cucumbers, a member of the benthic life community, within Shark's Cove, Waimea Bay, and Three Tables. I observed and cataloged a minimum of 20 individuals daily and that was only with a snorkel and mask. If I had access to scuba equipment, I am certain the numbers would have greatly surpassed that. That is only one of the many members of the thriving biotic community found in the MLCD. To say that shoreline "is essentially devoid of benthic biota" is a sizable, misinformed, and just plain erroneous claim.

Attached please find my biological survey. Mischaracterizing the ecological and environmental importance of this special area is unjustifiable. The marine survey must be redone to accurately reflect the "benthic biota" of the area that will be impacted the most by this proposed development.

Mahalo

Also in this article

https://scholarspace.manoa.hawaii.edu/bitstream/10125/7142/1/vol17n3-305-314.pdf

Marina Zannino
570-972-9739

Is That a Sea Cucumber or a Rock? A Biological Inventory of Pupukea's Shark's Cove Tide Pools

An Internship Report.

Submitted to the Faculty of

East Stroudsburg University
Biology department

For partial fulfillment of requirements for the

Degree of Bachelor's of Science .

In cooperations with Malama Pupukea-Waimea

Marina Ann Zannino

Abstract

Introduction

On June 26th, 2015 The Hawaii Department of Land and Natural Resources approved a rule to ban the harvesting of any species of sea cucumber for the following 120 days. This emergency ban was in response to an investigation being conducted by Hawaii's Division of Conservation and Resource Enforcement (DOCARE) confirming a new commercial fishing trend that was leading to the over-harvesting of sea cucumbers on the Hawaiian Islands. Over the course of the 120 days, researchers will be studying the effects that a large scale removal of sea cucumber would have on the reef and ocean.

Holothuroidea also known as sea cucumbers or loli in Hawaiian, are a species of echinoderms. Their bodies are soft and cylindrical, much like a cucumber from which they get the name. They are ocean dwellers, residing at depths up to 8.9 kilometers. Sea cucumbers live in many different marine environments throughout the world. Some species reside rocky substrates, suctioned to the side of coral or tucked underneath rocky ledges. Others can be found buried deep into the sandy ocean floor. Some species are planktonic, meaning they float along the ocean current.

Sea cucumbers are known as the vacuum cleaners of the ocean. Essentially, they are scavengers. These creatures feed on fish waste, algae, and small macroinvertebrates. They use small tubed feet to push the particles and food items into their mouth. A sea cucumber can have anywhere from 8 to 30 tube feet to assist in this process. Their body breaks down the materials into smaller particles and recycles it back into the ecosystem, much akin to the terrestrial earthworm.

Sea Cucumbers are diecious organisms, having two distinct sex among individuals. They can also reproduce sexually and asexually. Sexual reproduction is more common. A female sea cucumber will dispense her eggs and a male with fertilize outside of the body. This results in planktonic larvae that eventually settle to the ocean floor and then undergo metamorphosis. They also participate in allele effects, where individuals must congregate in large social groups to be able to mate successfully. (Photo 1)When disturbed, some Sea Cucumbers emit a stick white thread to entrap their predators (Photo 2), others evacuate their internal organs. There are 1250 known species of sea cucumbers and more than 14 of them are based in Hawaii growing from 6 inches to 3 feet.

The most common sea cucumbers found in the tide pools of Hawaii are the Black Sea cucumber, ashy cucumber, banded cucumber, white-speckled sea cucumber, and difficult sea cucumber. However, less common species like the leopard sea cucumber, and the light-spotted can also be found.

Shark's Cove is located on the North Shore of Oahu in the town of Pupukea. Shark's Cove is on the north side of the Pupukea-Waimea marine life conservation district. The MLCD includes Shark's Cove, Kalua-Maua or Three Tables, and Waimea Bay. In the 1970's a group of divers confronted the North Shore Neighborhood Board on the scarcity of marine life in that region. In 1975 a survey was collected by Sea Grant to show strong support in making Pupukea a new marine life reserve with certain exceptions to limu or seaweed collecting and certain types of fishing. It wasn't until the 1990's did The Hawaii Department of Land and Natural Resources (DNLR) realized that enforcing these exceptions and rules were too difficult. Once again the North Shore Neighborhood Board was called upon.

After conscripting many amendments to change the rules of the MLCD and offering them to DLNR, Senator Robert Bunda and Representative Alex Santiago assembled stakeholders to also support rule changes to DNLR. After a public hearing, the boundaries of the Pupukea MLCD were expanded and rules revised. In 2003, the MLCD became what we know today extending from Kululua point to the Wananapaoa Islets. Inside the MLCD one cannot take, injure, harass, or kill any marine life, bring any form of fishing equipment into the water that may be be used to harm or kill wildlife, take or degrade any coral or geological attributes to this area, or any equipment to alter and geological landscape. There are a few exceptions to these rules. One can collect limu kohu and limu lipe'epe'e up to 2 pounds, freeze-dried as long as the root is left; one can fish from the shore of Waimea bay with two poles per person, one line per pole, and two hooks per line. Lastly, during the months of August and September, one can possess a throw net to harvest 'opelu and akule during November and December. Even with these rules the MLCD is still under constant threat of poaching and over and ill use of the area. The tide pools at Shark's Cove even face more of a threat because there are even more exceptions regarding this area.

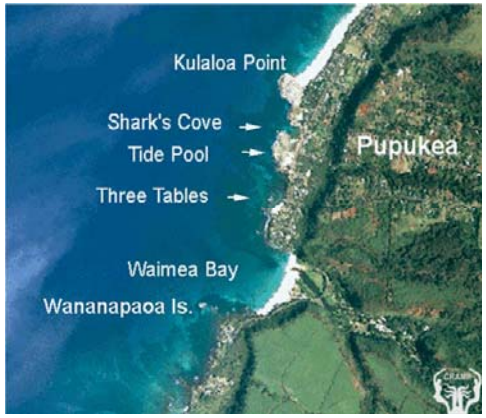
The tide pools that are located south of Shark's Cove were man made. They were created in the 1950's when they were blown out by dynamite to make gravel for the road base. Due to the unnatural way the tide pools were created, they are written to be the property of the City and County of Honolulu Pupukea Beach Park. Due to this fact, even though the tide pools are located in the MLCD, they are treated as if they are not. Though fishing is prohibited in the tide pools, possession of nets, spear guns and other fishing equipment is allowed. This, of course, makes it increasingly difficult to protect the tide pools and to stop poaching. This is what brought attention to the biodiversity index of sea cucumbers at this site.

Objectives and Methods

Survey Site

Surveys were conducted at the tide pools in the ahupua'a, the Hawaiian division of land of Pupukea, Shark's Cove, and Waimea Bay of the ahupua'a of Waimea. These three locations can be all found in Figure 1. Pupukea and Waimea are both low in population of residents, but during the time of the surveys, all sites were rather populated with tourists and visitors. SCUBA divers and snorkelers were common occurrence at the cove while casual beach-goers frequented the tide pools and Waimea often. Popular events like swimming and stand-up paddle board races were also being conducted during this time.

Figure 1



Objective 1: Determining Species Diversity, Species Richness and Biological Features of Sea Cumbers in the tide pools.

Species richness and diversity data of sea cucumbers were collected by doing a wide spread search without transect lines. Transect lines were omitted due to the sea cucumbers sessile behavior. Areas that had large numbers of specimens were re-visited along with exploring new regions with varying depths. These areas were chosen randomly and were not marked, returning was based on memory and photos taken of hotspots. Surveys were conducted twice a week between the hours of 9:00-13:00, with 1 hour to 2 hour durations. The surveys were done on July 7th, 9th, 15th, 17th, 21st, 23rd, 28th, and the 30th. A total of 8 surveys were done in the tide pools, while 2 were done in Shark's Cove and the right side of Waimea Bay for a total of 12 surveys. Interns from Kupu Oahu Team B assisted in the collection.

During each visual survey, photos were taken of each species, width and length of the specimen was measured by a standard 12-inch plastic ruler. Photos were then taken with an iPhone 5c in a WaterShot casing. Once the photo was taken, the species was identified by comparing photo to photos in a *Hawai'i's Sea Creatures:A Guide to Hawai'I's Marine Invertebrate* written by John Hoover.

Objective 2: Measurement of Environmental Variables.

In this study, weather, water temperature, water depth, and environmental composition was taken note of to try and find a correlation between days were large numbers of sea cucumbers were found and their hotspots. Weather was observed once entering the tide pools and written down accordingly to each date. When a specimen was found, water temperature was next to the cucumber with a Taylor Compact Waterproof Digital Thermometer. Depth was then measure in feet by 2 5-foot tape measures. Environmental composition was observed by simple observing of the area around the specimen and what substrates it could be found in.

Objective 3: To compare findings in Tide Pools to Findings in Waimea Bay and Shark's Cove.

Due to the fact that the tide pools are not protected by the laws of the MLCD, I wanted to see if size, species, and abundance differed from the tide pools in Waimea Bay and Shark's cove. These surveys were conducted in the same way as the tide pools. Areas were chosen randomly and explored of any species of sea cucumbers. Areas that were proven to have specimens were revisited and new areas were also examined. Measurements of lengths, depths, and species were taken and compared to that found in the tide pools.

Results

A total of 115 specimens were counted in the entire study. 78 individuals were counted in the tidepools, 15 in Waimea Bay and, 23 in Shark's cove. The most common species found in decending order were ; Holothuria atra (Black Sea Cucumber, Photo 3), Actinopyga mauritiana (White-Spotted Sea Cucumber, Photo 4), Holothuria difficilis (Diffucult Sea Cucumber, Photo 5), Holothuria hilla (Light-Spotted Sea Cucumber, Photo 6), Holothuria whitmaei (Teated Sea Cucumber, Photo 7), lastly Bohadschia argus (Leopared Sea Cucumber, Photo 2).

Table 1- Loli numbers in Waimea Bay, Tide Pools, and Shark's Cove.

	Waimea Bay/ # of individuals	Tide Pools / # of individuals	Shark's Cove / # of individuals
Actinopyga mauritiana	3	9	10
Bohadschia argus	N/A	1	N/A
Holothuria atra	12	57	13
Holothuria difficilis	N/A	4	N/A
Holothuria hilla	N/A	4	N/A
Holothuria whitmaei	N/A	3	N/A

From Table 1, the Black Sea Cucumber was the most common in all three areas, along with The White-Spotted Sea Cucumber. The reason N/A or not available is written in the columns instead of zeros is that the survey was done with a simple snorkel and mask. This prohibited deep diving for long periods of time and prevented the ability to check the ocean floor in Waimea Bay and Shark's Cove to look for these specimens.

Table 2- Daily inventory of Loli in the tide pools

	July 7th	July 9th	July 15th	July 17th	July 21st	July 23rd	July 28th	July 30th
Actinopyga mauritiana	-	1	1	1	2	-	4	-
Bohadschia argus	-	-	1	-	-	-	-	-
Holothuria atra	3	6	23	4	6	4	6	5
Holothuria difficilis	-	-	2	-	1	1	-	-
Holothuria hilla	-	-	3	-	-	-	-	1
Holothuria whitmaei	-	1	2	-	-	-	-	-

The probability of recounting the same individual repeatedly was very high due to the inability to tag the sea cucumbers. Table 2 provides a day by day inventory of the specimen ration found each day to display the species ratio and richness. The Black Sea Cucumber or *Holothuria atra* was continuously found in greater numbers compared to any other species each day. More specimens could have been found on the first day but, I was becoming familiar with the tide pools and learning popular environments for sea cucumbers. Individual day inventories were not added into Table 2 because of the study's focus being the tide pools.

Sea Cucumbers like extremely rocky substrates. The tide pools have many rocks and crevices that the sea cucumbers can wedge themselves happily into. This leads me to assume

species the following species prefer shallower water; Black Sea Cucumber, White-Spotted Sea Cucumber, Teated Sea Cucumber, Leopard Sea Sucumber, and Difficult Sea Cucumber. The light-spotted sea cucumber was found at depths of 4 feet and over, suggesting that this species may prefer deeper water. Sea Cucumbers found in Shark's Cove and Waimea bay were well past 10 feet deep, suctioning to upward faces rocks, however, unlike they tide pools. These individuals were not gathered together but, rather spaced far apart. Weather however, did have a big effect on the number of Sea cucumbers counted in one day.

On days where the sun was out and the temperature was high, Sea Cucumbers were harder to find, the ones that were spotted had placed themselves strategically under rocks to block from the sun. Days of overcast, the numbers of sea cucumbers found were noticeably higher than that on hot days. I believe this is due to water temperature. When a Sea Cucumber was found, the average water temperature around the individuals was 72°-74° Fahrenheit. In deeper water like Waimea Bay and Shark's Cove, some individuals were found at 70° Fahrenheit. Hotter weather would cause the water to heat up making the sea cucumbers take refuges in shady fractures in rocks.

Regardless of the abundance found in the tide pools, individuals found in Shark's Cove and Waimea Bay were much larger than those found in tide pools.

Table 3- Average size comparison Actinopyga mauritiana and Holothuria atra.

	Waimea Bay & Shark's Cove/ Avg size in inches	Tide Pools/ Avrage size in inches
Actinopyga mauritiana	7''-12''	6''-8''
Holothuria atra	12''-16''	4''-9''

Table 3 displays the very noticeable size difference in individuals of the species listed above found in the tide pools compared to individuals found in Shark's Cove and Waimea Bay. The reason the other four species were omitted is that they were not found in Waimea Bay or Shark's Cove, so there wasn't any data to compare.

The information gathered in the study suspects that harvesting might have been done. Since the tide pools are not treated as if they were a part of the Pupukea MLCD, harvesting of the sea cucumbers could have very well been performed here. Harvesting creates reverse natural selection, where the large specimens are taken and smaller, less desirable ones are left. That leaves the individuals with weaker genes to reproduce and create a feebler generation. This would explain the smaller sizes in the tide pools.

Conclusion

After all surveys were conducted it was determined that Black Sea Cucumbers were the most common species found in the North Shore Pupukea Tide pools. It is not certain what species is being targeted but, if the data shown in the tide pools is reflected on other parts of Hawaii, it is safe to say that mass amounts of them are being taken. Sea cucumber, as said above, are somewhat like scavengers. They eat animal scraps and plant matter along the ocean floor. This cleans and keeps the ecosystem healthy. If the numbers are depleted greatly, the health of the reef and ocean would greatly deplete. This would harm all other species living in the ocean including coral. One major thing that could have made this study better would have been a study extending from during the harvesting, throughout the four month ban, and then after decisions that were made. That way all changes in population counts could have been recorded and explained if the species prospered or failed.

Even though Sea Cucumbers are not a threatened species, even with the mass harvesting. The numbers people are collecting them at now could very well endanger their future in Hawaii. This could lead to sea cucumbers being placed on the IUCN Endangered Species list and maybe even becoming extinct in Hawaii. Sadly, when the demand for them is growing I can only imagine that the harvesting will progress to other Pacific islands and maybe the United States mainland's west coast. However, getting support behind them will be difficult with uneducated people because of their less than attractive appearance. That is why educational outreach and emphasis that everything is connected when protecting our resources is necessary.

What should result in the end of this four month ban are very strict rules protecting sea cucumbers. Eating sea cucumbers is a fairly new trend and with money involved, people are more than likely to abuse any harvesting regulations that would be out into place.That means that perhaps a permanent ban may be the answer for this situation.

Work Cited

Denison, Dan. "DLNR NEWS RELEASE: SEA CUCUMBER HARVESTING BANNED FOR 120 DAYS IN HAWAI'I." *Hawaii.gov*. Governor of Hawaii, 26 June 2015. Web. 21 Aug. 2015.

Hoover, John P. *Hawai'i's Sea Creatures: A Guide to Hawai'i's Marine Invertebrates*. Honolulu, HI: Mutual Pub., 1998. Print.

"MLCD Beginnings." *Mālama Pūpūkea-Waimea MLCD*. Malama Pupukea-Waimea, 2015. Web. 21 Aug. 2015.

"Sea Cucumber Facts." *Sea Cucumber Facts*. N.p., n.d. Web. 21 Aug. 2015.

"Sea Cucumber." *National Wildlife Foundation*. NWF, 2005. Web. 21 Aug. 2015.

"Sea Cucumbers Are so Popular in Asia They Face Extinction." *The Conversation*. The Conversation, 14 May 2014. Web. 21 Aug. 2015.

Wallgrov, Richard. "Summary of Shark's Cove Tide Pool Re: Pupukea MLCD." (2008): n. pag. Print.

Photos

Photo 1- *Holothuria atra and Holothuria difficilis displaying clumping.*

Photo 2- *Bohadschia argus emitting its sticky threads*

Photo 3 – *Holothuria atra*

Photo 4- *Actinopyga mauritiana*

Photo 5- *Holothuria difficilis*

Photo 6- *Holothuria hilla*

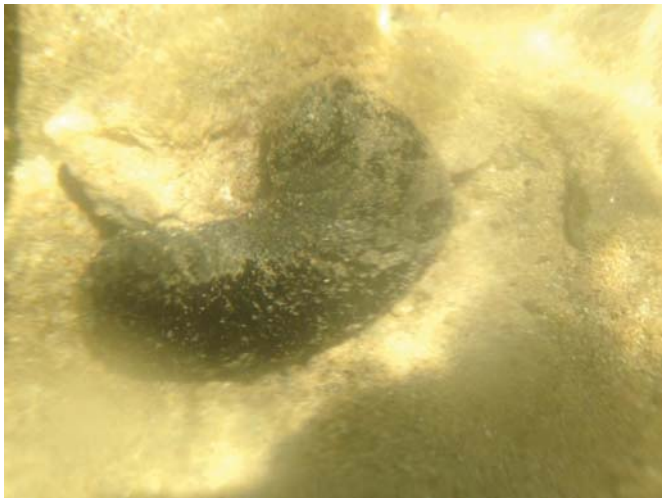


Photo 7- *Holothuria whitmaei with sand removed*

Photo 8- *The common substrate.*

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Marina Zannino
Email: mari.zannino@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Zannino:

Thank you for your comment letter dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comments: *After reading the marine survey relied upon by the DEIS, I strongly suggest that a new survey be conducted for the benthic community in Shark's Cove and the surrounding MLCD by a more credible marine consultant. In the summer of 2015, I performed a biological survey of sea cucumbers, a member of the benthic life community, within Shark's Cove, Waimea Bay, and Three Tables. I observed and cataloged a minimum of 20 individuals daily and that was only with a snorkel and mask. If I had access to scuba equipment, I am certain the numbers would have greatly surpassed that. That is only one of the many members of the thriving biotic community found in the MLCD. To say that shoreline "is essentially devoid of benthic biota" is a sizable, misinformed, and just plain erroneous claim.*

Attached please find my biological survey. Mischaracterizing the ecological and environmental importance of this special area is unjustifiable. The marine survey must be redone to accurately reflect the "benthic biota" of the area that will be impacted the most by this proposed development.

Response: Thank you for providing your biological survey of sea cucumbers. The report will be published alongside your comment letter in the Final EIS. Please note that the purpose of the marine survey was to identify nearshore water quality and to consider potential surface runoff and groundwater influence on marine water quality, for which a comprehensive review of published studies was not relevant. The marine water quality and biology assessment prepared for the EIS followed accepted scientific sampling and analytical procedures for evaluating nearshore environmental conditions, and predictive nutrient concentration projections in conjunction with the inputs determined in the surface water and groundwater quality assessment.

The findings published by Dr. Dollar are very similar to the reported information published by Coral Reef Assessment and Monitoring Program conducted by researchers Dr. Paul Jokiel and colleagues at the Hawaii Institute of Marine Biology.
http://cramp.wcc.hawaii.edu/LT_Montoring_files/lt_study_sites_Oahu_Pūpūkea.htm.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Mari <alohamari@yahoo.com>
Sent: Friday, January 5, 2018 11:34 AM
To: ashaw@honolulu.gov; Pupukea Rural Community Ctr
Subject: Hanapohaku GEIS

January 4, 2018

SUBJECT:
HANAPOHAKU GEIS

Aloha Sir(s),

When it comes to the Hanapohaku GEIS development plan, septic and wastewater comes to my mind. This has been one of the negative issues mentioned at the meetings I have attended.

At one meeting, Hanapohaku tried to sell everyone on the "green" system they had installed on one parcel. The capacity did not seem adequate and almost laughable because their idea was to sell this ever expanding lunch truck parking lot by explaining what a wonderful septic system they had put in.

My question is: Why isn't an oversized, well engineered, non polluting system being planned for this site? Maybe it's 3 parcels and maybe it requires 3 systems, maybe there are other factors.

Foodland has a policy of no public bathrooms, but sends their patrons across the street to the park facilities or the Fire station. Hanapohaku should have enough capacity and restroom availably for anyone, and everyone that patronizes there. Foodland, as part of the big picture, could even send customers "in need", next door instead of crossing Kamehameha Hwy.

Kamehameha Hwy. **** This also reminds me of some of the other negative issues brought up at the meetings:
Local traffic vs. tourist traffic vs. pedestrians vs. random Highway frontage parking vs. delivery service traffic and times vs. lighting pollution.

Hanapohaku,has not been a very good neighbor with misrepresentations and false statements about what they are doing or will do. I'm afraid G70 and Mr. Overton are doing some of the same with this GEIS. We would really like to welcome you as a good neighbor. This is your chance to listen to the community and make it "pono" for this generation and the generations to come.

Mahalo,
Mari Zane-Hartman
(808)638-7210
alohamari@yahoo.com

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Mari Zane-Hartman
Email: alohamari@yahoo.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Zane-Hartman:

Thank you for your comment letter dated January 5, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *When it comes to the Hanapohaku GEIS development plan, septic and wastewater comes to my mind. This has been one of the negative issues mentioned at the meetings I have attended. At one meeting, Hanapohaku tried to sell everyone on the "green" system they had installed on one parcel. The capacity did not seem adequate and almost laughable because their idea was to sell this ever expanding lunch truck parking lot by explaining what a wonderful septic system they had put in. My question is: Why isn't an oversized, well engineered, non polluting system being planned for this site? Maybe it's 3 parcels and maybe it requires 3 systems, maybe there are other factors.*

Foodland has a policy of no public bathrooms, but sends their patrons across the street to the park facilities or the Fire station. Hanapohaku should have enough capacity and restroom availably for anyone, and everyone that patronizes there. Foodland, as part of the big picture, could even send customers "in need", next door instead of crossing Kamehameha Hwy.

Response: The Draft Environmental Impact Statement (DEIS) and Final EIS describe the highly advanced wastewater treatment system to be used at the proposed rural community commercial center. The system will employ aeration and separation of waste with additional ground treatment through absorption beds, which will be twice the required size for 100 percent redundancy. The system will be reviewed, approved, and permitted by the State Department of Health Wastewater Branch.

The system represents a model approach to wastewater management in this sensitive coastal environment which is affected by human waste inputs from the more than 500 onsite wastewater disposal systems (cesspool and septic systems) serving homes in Pūpūkea and Sunset Beach. These existing residential wastewater systems release in excess of 100,000 gallons per day into the groundwater upgradient of the rural center property, all of which ultimately reaches the ocean. The rural center high quality on-site wastewater treatment system demonstrates the highest level of sensitivity to this important concern of protecting nearshore water quality.

Comment: *Kamehameha Hwy. **** This also reminds me of some of the other negative issues brought up at the meetings: Local traffic vs. tourist traffic vs. pedestrians vs. random Highway frontage parking vs. delivery service traffic and times vs. lighting pollution.*

Response: The EIS provides analyses of the existing traffic and roadway conditions in *Section 3.13*. A projection of growth in traffic that would occur with the project is provided. The increased traffic at the intersection of Kamehameha Highway and Pūpūkea Road is expected to continue at "level of service" (LOS) A. Restriping the highway to add a shared turning lane will allow vehicles to enter and exit the rural community commercial center site, including access to the existing Foodland, at an LOS not considered significant under the criteria from State and City transportation departments.

The project will create a pedestrian path along Kamehameha Highway from Pupukea to Pahoe roads. The path will be bordered by low vegetation to deter people from crossing unless at a crosswalk. A curb will be installed along the project's makai edge to improve drainage along the highway; the formed curb will eliminate space for illegal parking along the highway fronting the parcels. The Final EIS (*Section 3.13.2*) notes that deliveries to Foodland should be scheduled during off-peak times in the early afternoon to minimize delays caused by trucks accessing the Foodland loading dock. Lighting will comply with City and Federal requirements to minimize impacts to seabirds (please see EIS *Section 3.17.2*).

Comment: *Hanapohaku has not been a very good neighbor with misrepresentations and false statements about what they are doing or will do. I'm afraid G70 and Mr. Overton are doing some of the same with this GEIS. We would really like to welcome you as a good neighbor. This is your chance to listen to the community and make it "pono" for this generation and the generations to come.*

Response: We appreciate the willingness to welcome Hanapohaku as a good neighbor; the past violations on the property have all been cleared and site improvements authorized by the City Department of Planning and Permitting are underway. Discussions with various community groups have shaped the proposed project as presented in Chapter 6 of the Final EIS. The owners are committed to pursuing Hawai'i-based businesses as tenants of the center, which underlies their objectives to support local businesses that complement and strengthen commerce on the North Shore, while preserving the rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Matthew Pugliese <matthewcpugliese@gmail.com>
Sent: Friday, January 5, 2018 4:27 PM
To: ashaw@honolulu.gov; Pupukea Rural Community Ctr; andrew@hanapohakullc.com
Subject: In Support of the Development at Sharks Cove

Aloha,

I am writing to you to voice my support for the upcoming development at Sharks Cove. I live on Kamehameha Highway at Rocky Point and work in the surf shop at Sharks Cove. Essentially, Sharks Cove is a wonderful place to work and spend time because, like the town center in Haleiwa, it is a gathering place for the North Shore community. As a manager, I work outside, I show tourists how to safely and sustainably enjoy the natural beauty of North Shore, and I meet friends young and old coming down the bike path to buy wax, get a bite to eat, talk story, or browse the ever-changing selection of surfboards.

I care deeply about the preservation and sustainability of this land and believe this development will constitute the highest and best use of the land for our community. A carefully planned, carefully orchestrated facelift to this rural community center will improve the lives of the locals who see this place as a central hub and a livelihood. After attending community meetings and watching Hanapohaku LLC present revised plans shaped by feedback from the local community, especially relating to parking issues, I am excited to see the plans move forward.

Sincerely,

Matt Pugliese

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Matthew Pugliese
Email: matthewcpugliese@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Pugliese:

Thank you for your email dated January 5, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I am writing to you to voice my support for the upcoming development at Sharks Cove. I live on Kamehameha Highway at Rocky Point and work in the surf shop at Sharks Cove. Essentially, Sharks Cove is a wonderful place to work and spend time because, like the town center in Haleiwa, it is a gathering place for the North Shore community. As a manager, I work outside, I show tourists how to safely and sustainably enjoy the natural beauty of North Shore, and I meet friends young and old coming down the bike path to buy wax, get a bite to eat, talk story, or browse the ever-changing selection of surfboards.*

Response: *Your experience describes the vision of the owners – to create a gathering area with an open landscaped park-like setting framed by small-scale clustered buildings linked by meandering pathways. The addition of services not currently available will complement this important community hub and enhance daily life with interactions and a greater variety of goods and services to support living in Sunset Beach-Pūpūkea.*

Comment: *I care deeply about the preservation and sustainability of this land and believe this development will constitute the highest and best use of the land for our community. A carefully planned, carefully orchestrated facelift to this rural community center will improve the lives of the locals who see this place as a central hub and a livelihood. After attending community meetings and watching Hanapohaku LLC present revised plans shaped by feedback from the local community, especially relating to parking issues, I am excited to see the plans move forward.*

Response: We appreciate that you made the time to voice your support for the proposed rural community commercial center at Pūpūkea. The owners are committed to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: meganbark@aol.com
Sent: Friday, January 5, 2018 11:05 AM
To: ashaw@honolulu.gov
Cc: Pupukea Rural Community Ctr
Subject: Comments Regarding The Proposed Pupukea Rural Community Commercial Center (Project # 216041-01)

Dear Ardis Shaw-Kim,

I am writing in regards to the proposed Project named Pupukea Rural Community Commercial Center. I implore you to please deny the application.

As the report itself states, it is **unavoidable** that the Proposed Project will discharge contaminated groundwater at the shoreline into the water and that "the **probable** impact on water quality and the downgradient marine environment from nutrients would **likely** be undetectable in the marine environment at distances from the shoreline where marine communities occur" (pg. 3-56). The report, on pages 3-25, defines the distance from the shoreline where marine communities occur as **starting 330 feet offshore**! There are abundant marine communities directly offshore and directly adjacent to the project site. It is an extremely popular marine reserve area where residents and visitors snorkel and swim every single day. Approval should not be given to the proposed Project that allows such unavoidable contamination of the offshore water endangering both marine and human populations.

The report itself acknowledges that there are severe traffic congestion problems on Kamehameha Highway on the North Shore with no proposed mitigation solutions in sight. The traffic being particularly bad in "the Foodland Pupukea area" (pg 3-56). **This is the exact location of the proposed Project**. The intersection of Kamehameha Hwy and Pupukea Road is a huge problem area that already causes traffic to back up in both directions. I call to question the report findings that the proposed Project, which will draw thousands in increased cars to an already severely congested intersection, will have no significant impaction traffic.

The proposed Project would subject the surrounding residential neighbors to unacceptable levels of noise and has not provided sufficient parking. In addition, while the applicants speak of "open space", they also make reference to filling such "open space" with an unnamed amount of food trucks. This is unacceptable and will also greatly increase waste and traffic that is not even accounted for in the reports.

The word rural is defined as "in, relating to, or characteristic of the countryside rather than the town". Just as the title of the Project says, the area of the proposed Project is a rural area too close to a marine environment in a community that does not want, and can not accommodate, the commercialization.

Thank you,
Megan Bark
59-209D Ke Nui Rd.
Haleiwa, HI 96712

G70
111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Megan Bark
59-209D Ke Nui Road
Haleiwa, HI 96712
Email: meganbark@aol.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Ms. Bark:

Thank you for your email dated January 5, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I am writing in regards to the proposed Project named Pupukea Rural Community Commercial Center. I implore you to please deny the application.*

*As the report itself states, it is **unavoidable** that the Proposed Project will discharge contaminated groundwater at the shoreline into the water and that "the **probable** impact on water quality and the downgradient marine environment from nutrients would **likely** be undetectable in the marine environment at distances from the shoreline where marine communities occur" (pg. 3-56).*

Response: The comment refers to a section in the EIS titled "Adverse Environmental Effects that Cannot be Avoided," and states ". . . disposal of treated wastewater effluent will slightly increase the groundwater concentrations of nitrogen and phosphorus." The project will not discharge contaminated groundwater.

Comment: *The report, on pages 3-25, defines the distance from the shoreline where marine communities occur as starting 330 feet offshore! There are abundant marine communities directly offshore and directly adjacent to the project site. It is an extremely popular marine reserve area where residents and visitors snorkel and swim every single day. Approval should not be given to the proposed Project that allows such unavoidable contamination of the offshore water endangering both marine and human populations.*

Response: *Section 3.7.1* of the EIS identifies the benthic communities in the Pupukea/Sharks Cove area as having developed primarily in response to physical forces associated with the high energy regime generated from the North Pacific winter storms. The coral community structure of the area has low diversity and coral cover owing to the harsh physical characteristics of the open coastal area of the North Shore. Because of the

extreme physical stresses, the biotic communities within the area can be considered limited by physical control compared to other areas in the Hawaiian Islands.

The marine study (contained as *Appendix C* to the EIS) describes the physical and biotic composition found along the transects referring to the distance from shore. For transects 1, 3, 4 and 5, three distance biotopes are found. The inner region (nearest the shore) to a distance of approximately 165 feet is composed primarily of large boulders interspersed with rubble and sand channels. As this shallow area is regularly impacted by large waves during the winter, attached and unattached organisms are rare. The description for transect 1 further notes a second zone composed of the solid limestone bench where corals are relatively scarce. The third zone of Transect 1 is described as occurring approximately 330 feet from shore with small colonies of corals.

Comment: *The report itself acknowledges that there are severe traffic congestion problems on Kamehameha Highway on the North Shore with no proposed mitigation solutions in sight. The traffic being particularly bad in "the Foodland Pupukea area" (pg 3-56). This is the exact location of the proposed Project. The intersection of Kamehameha Hwy and Pupukea Road is a huge problem area that already causes traffic to back up in both directions. I call to question the report findings that the proposed Project, which will draw thousands in increased cars to an already severely congested intersection, will have no significant impaction traffic.*

Response: The general statement referenced in your comment explains that traffic in the region is a community issue extending from Haleʻiwa through Sunset Beach. The paragraph provides context for the intersection at Pūpūkea Road, which has the only stoplight along a 10-mile stretch of highway, in an area that has seen the island-wide growth and increased tourism over the past decades. With the completed project, traffic at the intersection of Kamehameha Highway and the project driveway is anticipated to operate at an acceptable level of operation under both City and State criteria.

Please note that the detailed discussion of traffic can be found in *Section 3.13* of the EIS. The projected increase in net new vehicle trips because of the project is projected to be 926 daily. The actual number of vehicles would be approximately half the net new vehicle trips.

Comment: *The proposed Project would subject the surrounding residential neighbors to unacceptable levels of noise and has not provided sufficient parking. In addition, while the applicants speak of "open space", they also make reference to filling such "open space" with an unnamed amount of food trucks. This is unacceptable and will also greatly increase waste and traffic that is not even accounted for in the reports.*

Response: Noise will be minimized through design of the buildings on the north and east sides of the project. The building design will utilize fixed windows on the exterior walls on the Pāhoe Road side and provide enclosed interior air-conditioned space. The restaurant will be acoustically designed to reduce exterior noise levels to 45 dBA or less at the closest residence. To minimize potential noise from delivery trucks, such as that of back-up alarms, deliveries to the commercial establishments during nighttime or early morning hours will

be avoided. Daytime and nighttime noise limits of the State DOH will be strictly enforced at the property.

Figure 2-6 in the Final EIS updates the location for up to six mobile food trucks. Parking for the center will be consistent with the requirements of the Honolulu Land Use Ordinance (LUO), Chapter 21, Revised Ordinances of Honolulu. Additional parking spaces are provided to allow mobile food truck presence. While the LUO has not yet codified the space required, we are working with the City Department of Planning and Permitting (DPP) to anticipate the future requirements. Six stalls per food truck are required for Haleʻiwa, thus the total parking count for the project includes 36 stalls lot to accommodate up to six food trucks. Please refer to the EIS section on Infrastructure (*Section 3.16.2*) regarding how food truck patrons are accounted for in the wastewater capacity planned for the rural center.

Comment: *The word rural is defined as "in, relating to, or characteristic of the countryside rather than the town". Just as the title of the Project says, the area of the proposed Project is a rural area too close to a marine environment in a community that does not want, and can not accommodate, the commercialization.*

Response: The project also has support from the community - please see the comment letters submitted (*Chapter 6* of the EIS). The supporters value the owners' commitment to pursue Hawaiʻi-based businesses as tenants, and also see jobs opportunity for themselves or their children closer to home. Among the owners' objectives are support of local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community. The proposed development is of a scale prescribed in the North Shore Sustainable Communities Plan (NSSCP) for the parcels and will utilize just 25 percent of the floor area ratio (FAR) allowed under City land use ordinance for this property. Further information on the consistency of the project with the NSSCP can be found in Chapter 2 of the EIS.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Meleana Judd <meleanajudd@gmail.com>
Sent: Monday, January 8, 2018 12:38 PM
To: ashaw@honolulu.gov; Pupukea Rural Community Ctr; Andrew Yani; meleana judd
Subject: Hanapohaku

Aloha,
We are writing in support of Hanapohaku LLC's development at Sharks Cove.
I, Mele, am an environmentalist, voter, home owner in Pupukea, and I manage Waihuena Farm a small farm and community project nearby. Although I have come out to the North Shore my whole life from Honolulu, I am been blessed to finally call it Home for the last 7 years. I am also Cully Judd's daughter and know that he and my brother in law Andrew Yani have worked hard to create a thoughtful, appropriately sized and environmentally sensitive project whose convenient central location will serve our rural North Shore community's needs and reduce resident trips to Haleiwa town.

I, Alex, am a surfer, home owner, and own my own small business building picture frames. I have lived here for over 30 years and see this development as a great thing for other local small businesses and those they employ.

We look forward to the Center being a model for sustainable development and something our children will be proud to know their grandfather built to serve the North Shore.

Mahalo,
Meleana Judd-Cox and Alex Cox
--
MeleanaJudd@gmail.com
808.551.8132

Waihuena Farm, fb, ig, monday afternoon CSA, farmstand, yoga, first monday of month potluck

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Meleana Judd-Cox and Mr. Alex Cox
Email: meleanajudd@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Judd-Cox & Mr. Cox:

Thank you for your email dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *We are writing in support of Hanapohaku LLC's development at Sharks Cove.*

I, Mele, am an environmentalist, voter, home owner in Pupukea, and I manage Waihuena Farm a small farm and community project nearby. Although I have come out to the North Shore my whole life from Honolulu, I am . . . blessed to finally call it Home for the last 7 years. I am also Cully Judd's daughter and know that he and my brother in law Andrew Yani have worked hard to create a thoughtful, appropriately sized and environmentally sensitive project whose convenient central location will serve our rural North Shore community's needs and reduce resident trips to Haleiwa town.

Response: Core to the essence of the Rural Community Commercial Center is protection of the environment, which is a widely held community value for residents of the North Shore. With close proximity to the Pūpūkea Marine Life Conservation District (MLCD), redevelopment of the property will integrate environmental protections in the planning, design and operation.

Comment: *I, Alex, am a surfer, home owner, and own my own small business building picture frames. I have lived here for over 30 years and see this development as a great thing for other local small businesses and those they employ.*

Response: The commitment of the owners to pursue Hawaiʻi-based businesses as tenants of the center underlies their objectives to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Comment: *We look forward to the Center being a model for sustainable development and something our children will be proud to know their grandfather built to serve the North Shore.*

Response: We appreciate that you made the time to express your support of the Pūpūkea Rural Community Commercial Center project.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Meleana Judd-Cox and Mr. Alex Cox
Email: meleanajudd@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Judd-Cox & Mr. Cox:

Thank you for your email dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *We are writing in support of Hanapohaku LLC's development at Sharks Cove.*

I, Mele, am an environmentalist, voter, home owner in Pupukea, and I manage Waihuena Farm a small farm and community project nearby. Although I have come out to the North Shore my whole life from Honolulu, I am . . . blessed to finally call it Home for the last 7 years. I am also Cully Judd's daughter and know that he and my brother in law Andrew Yani have worked hard to create a thoughtful, appropriately sized and environmentally sensitive project whose convenient central location will serve our rural North Shore community's needs and reduce resident trips to Haleiwa town.

Response: Core to the essence of the Rural Community Commercial Center is protection of the environment, which is a widely held community value for residents of the North Shore. With close proximity to the Pūpūkea Marine Life Conservation District (MLCD), redevelopment of the property will integrate environmental protections in the planning, design and operation.

Comment: *I, Alex, am a surfer, home owner, and own my own small business building picture frames. I have lived here for over 30 years and see this development as a great thing for other local small businesses and those they employ.*

Response: The commitment of the owners to pursue Hawaiʻi-based businesses as tenants of the center underlies their objectives to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Comment: *We look forward to the Center being a model for sustainable development and something our children will be proud to know their grandfather built to serve the North Shore.*

Response: We appreciate that you made the time to express your support of the Pūpūkea Rural Community Commercial Center project.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Michael Lyons <mlyons001@hawaii.rr.com>
Sent: Sunday, January 7, 2018 11:02 AM
To: Pupukea Rural Community Ctr
Subject: Pupukea Rural Community Ctr

Aloha,

I am writing to express my support for the proposed Pupukea Rural Commercial Community Center - "McCully's Corner",

I am a concerned North Shore home owner and North Shore business owner, and North Shore Neighborhood Board Member. I have been following this project as I believe it will be of great benefit to our North Shore Community in that it will bring much needed jobs in small business as well as amenities for us residents. My family and I would definitely use the center.

I support the sizing of the proposal. This property has appropriate zoning. This property has a history of supporting business and employing people for a number of years. This project has support of the North Shore Neighborhood board prior to a formal vote.

Sincerely,

Mike Lyons
North Shore Neighborhood Board Member

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Michael Lyons
Email: mlyons001@hawaii.rr.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Lyons:

Thank you for your email dated January 7, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I am writing to express my support for the proposed Pupukea Rural Commercial Community Center - "McCuly's Corner." I am a concerned North Shore home owner and North Shore business owner, and North Shore Neighborhood Board Member. I have been following this project as I believe it will be of great benefit to our North Shore Community in that it will bring much needed jobs in small business as well as amenities for us residents. My family and I would definitely use the center.*

I support the sizing of the proposal. This property has appropriate zoning. This property has a history of supporting business and employing people for a number of years. This project has support of the North Shore Neighborhood board prior to a formal vote.

Response: The supplies currently available to the surrounding community will be supplemented with the buildout of the Rural Community Commercial Center. The addition of services not currently available will complement this important community hub and enhance daily life with interactions and a greater variety of goods and services to support living in Sunset Beach-Pūpūkea.

The modest development plan utilizes approximately 25 percent of the floor area ratio (FAR) allowed under City land use ordinance for this property and is consistent with the design guidelines of the North Shore Sustainable Communities Plan.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Michael Yani <mjyani@gmail.com>
Sent: Wednesday, January 3, 2018 7:31 PM
To: ashaw@honolulu.gov; Pupukea Rural Community Ctr; andrew@hanapohakullc.com
Subject: In support of Hanapohaku - Shark's Cove

Aloha,

I am writing this email in support of the proposed Shark's Cove neighborhood shopping center. I believe that this will benefit the local residents and the community in many different ways. It will support small business as well as give the local North Shore Community the services they desperately need ie: things such as an Urgent Care, some sort of postal service, local eateries staffed by local residents (providing jobs for local residents). Lastly, this developer is planning to only use roughly 25% of the area that they are allowed to build on. This is EXTREMELY rare for ANY developer these days to use only a small percentage of what they are allowed. I believe these developers (Hanapohaku) are not trying to suck the blood out of the land. They intend to develop only 25% of the land because they care about the community and the local residents alike.

Mahalo

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Michael Yani
Email: mjyani@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Yani:

Thank you for your email dated January 3, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I am writing this email in support of the proposed Shark's Cove neighborhood shopping center. I believe that this will benefit the local residents and the community in many different ways. It will support small business as well as give the local North Shore Community the services they desperately need ie: things such as an Urgent Care, some sort of postal service, local eateries staffed by local residents (providing jobs for local residents). Lastly, this developer is planning to only use roughly 25% of the area that they are allowed to build on. This is EXTREMELY rare for ANY developer these days to use only a small percentage of what they are allowed. I believe these developers (Hanapohaku) are not trying to suck the blood out of the land. They intend to develop only 25% of the land because they care about the community and the local residents alike.*

Response: We appreciate that you made the time to express your support of the Pūpūkea Rural Community Commercial Center project. The owners are committed to pursuing Hawai'i-based businesses as tenants of the center. This commitment underlies the objectives of the owners to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community. Business and employment opportunities for area residents will provide additional jobs within the community and avoid long commutes to job centers in urban areas of O'ahu.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: richard lam <kepunaaloha@mac.com>
Sent: Monday, January 8, 2018 12:02 PM
To: ashaw@honolulu.gov
Cc: hanapohakullc@gmail.com; Pupukea Rural Community Ctr
Subject: Sharks Cove Plan

Dear DPP, as residents and homeowners of 2 properties for 40 years in the Sunset Point area, we strongly urge you to deny any permits for retail center development at Sharks Cove. This is the last pristine protected shoreline on the North Shore, already attracting more traffic and visitors than our infrastructure can handle. A retail center in this location would require a traffic light and turn lanes which we have no room for, also impacting environmental issues with sewage which is already an issue of overload for this area.The erosion at Sunset Beach is already a huge problem and we need to protect this shoreline from any extra development. Many of us living here would love to see a new retail center in Kahuku, on the old sugar mill site. We already have a Post Office and First Hawaiian Bank there. This location has ample room for shops and parking, and a demand for better shops and restaurants from both North Shore residents and guests at the Turtle Bay Hilton. Please developers, consider this as residential construction is booming in this area, and sorely needs a new retail center which would be welcomed and used by so many of us from both directions. Mahalo, Richard and Nancy Lam

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Richard & Ms. Nancy Lam
Email: kepunaaloha@mac.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. & Ms. Lam:

Thank you for your email dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *... as residents and homeowners of 2 properties for 40 years in the Sunset Point area, we strongly urge you to deny any permits for retail center development at Sharks Cove. This is the last pristine protected shoreline on the North Shore, already attracting more traffic and visitors than our infrastructure can handle.*

Response: The increase in visitor numbers over the past decade State- and island-wide is well documented by multiple sources and cannot be attributed to a single development. The existing commercial use of the area, Foodland grocery store, supports the Pūpūkea, Waimea and Kawailoa communities and visitors. The North Shore Sustainable Communities Plan (NSSCP) guides development for the region and was prepared with years of input from community members. Among the land uses defined in the NSSCP, the 4.56 acres with existing B-1 Neighborhood Business District that includes the existing Foodland grocery store was identified as the location to consolidate existing and future commercial use.

Comment: *A retail center in this location would require a traffic light and turn lanes which we have no room for, also impacting environmental issues with sewage which is already an issue of overload for this area.*

Response: The EIS provides an analysis of changes in traffic as a result of the center (see *Section 3.13*). A central shared turning lane is proposed and can be accomplished within the existing width of the State highway. No additional traffic light is proposed for the project.

The EIS also describes the proposed wastewater treatment system, which will require review and approval from the State Department of Health Wastewater Branch. The system represents a model approach to wastewater management in this sensitive coastal environment which is already affected by human waste inputs. There are over 500 onsite wastewater disposal systems (cesspool and septic systems) serving homes in Pūpūkea and Sunset Beach. These existing residential wastewater systems release a total wastewater volume in excess of 100,000 GPD into the groundwater upgradient of the rural center property, all of which ultimately reaches the ocean. The rural center will have a low volume

and high quality on-site wastewater treatment system employing ground disposal demonstrating the highest level of sensitivity to this important concern of protecting nearshore water quality.

Comment: *The erosion at Sunset Beach is already a huge problem and we need to protect this shoreline from any extra development.*

Response: The location of the center is across Kamehameha Highway from the Pūpūkea Beach Park and is not near the area of erosion at Sunset Beach. The project will have no impact on beach erosion processes.

Comment: *Many of us living here would love to see a new retail center in Kahuku, on the old sugar mill site. We already have a Post Office and First Hawaiian Bank there. This location has ample room for shops and parking, and a demand for better shops and restaurants from both North Shore residents and guests at the Turtle Bay Hilton. Please developers, consider this as residential construction is booming in this area, and sorely needs a new retail center which would be welcomed and used by so many of us from both directions.*

Response: We acknowledge that you would like to see a new retail center in Kahuku.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Robert Justice <justiceroofing@gmail.com>
Sent: Sunday, January 7, 2018 11:49 AM
To: Pupukea Rural Community Ctr
Subject: McCullys Corner

Aloha,
I am writing you in concern about McCullys Corner, One night i was sitting at McCullys corner eating dinner and thought to myself "do i like this?" Upon reflection i remember the limited choices we had for eating establishments and services in the past and thought , "we have options". its right by my house and do not have to travel into Haleiwa. Especially with the traffic and the overcrowding of our little town. The thing i appreciate about the project the most is it is for us , the community. with so much being focused on tourism and the pressure it has put on us its nice to have a project that will help our quality of life. It will provide much needed jobs and supports local business opportunities. I have been following this project closely since the beginning as being on the North Shore Community Board. and have seen the concern and love they have for us, the community and am looking forward to the NEW McCullys Corner.
Thank you, Bob Justice

--
justiceroofing@gmail.com

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Robert Justice
Email: justiceroofing@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Justice:

Thank you for your email dated January 7, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I am writing you in concern about McCullys Corner, One night i was sitting at McCullys corner eating dinner and thought to myself "do i like this?" Upon reflection i remember the limited choices we had for eating establishments and services in the past and thought , "we have options". its right by my house and do not have to travel into Haleiwa. Especially with the traffic and the overcrowding of our little town. The thing i appreciate about the project the most is it is for us, the community. with so much being focused on tourism and the pressure it has put on us its nice to have a project that will help our quality of life. It will provide much needed jobs and supports local business opportunities. I have been following this project closely since the beginning as being on the North Shore Community Board and have seen the concern and love they have for us, the community and am looking forward to the NEW McCullys Corner.*

Response: We appreciate that you made the time to express your support of the Pūpūkea Rural Community Commercial Center project. The owners, Hanapohaku LLC, are committed to pursuing Hawai'i-based businesses as tenants of the center. This commitment underlies the objectives of the owners to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Shannon Yates <shannon@nbl2.net>
Sent: Monday, January 8, 2018 2:31 PM
To: ashaw@honolulu.gov
Cc: Pupukea Rural Community Ctr; andrew@hanapohakullc.com
Subject: HanaPohaku

As homeowners in Haleiwa, we are supportive of this project. We will particularly appreciate the scale and style being appropriate and the much needed Urgent Care serving the area.

Shannon Yates

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Ms. Shannon Yates
Email: shannon@nbl2.net

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Ms. Yates:

Thank you for your comment letter dated January 8, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *As homeowners in Haleiwa, we are supportive of this project. We will particularly appreciate the scale and style being appropriate and the much needed Urgent Care serving the area.*

Response: We appreciate that you made the time to express your support of the Pūpūkea Rural Community Commercial Center project. The modest development plan utilizes approximately 25 percent of the floor area ratio (FAR) allowed under City land use ordinance for this property and is consistent with the design guidelines of the North Shore Sustainable Communities Plan.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

-----Original Message-----
From: Terrence Sing [mailto:kneon@hawaiiantel.net]
Sent: Tuesday, November 28, 2017 9:00 AM
To: Shaw-Kim, Ardis
Subject: Hanapohaku LLC "rural retail complex"

Aloha,
I oppose the so-called "rural retail complex" being proposed by Hanapohaku LLC across from Shark's Cove in Pupukea. I ask that you do not approve this development.
The project is falsely being described as a rural community center, which the actual residents and community do no want.
This project is clearly commercial in nature and targets the thousands of tourists who visit the north shore. It will adversely impact traffic and the quality of life for residents and tourists alike.
Visitors come to Hawaii, and specifically the north shore of Oahu, to see the natural beauty and world-famous beaches. They don't want to see more strip malls.
Keep the country Country.

Mahalo

Sent from my iPad

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Terrence Sing
Email: kneon@hawaiiantel.net

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, O'ahu, Hawai'i)

Dear Mr. Sing:

Thank you for your comment letter dated November 28, 2017 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *I oppose the so-called "rural retail complex" being proposed by Hanapohaku LLC across from Shark's Cove in Pupukea. I ask that you do not approve this development.*

The project is falsely being described as a rural community center, which the actual residents and community do no want.

This project is clearly commercial in nature and targets the thousands of tourists who visit the north shore. It will adversely impact traffic and the quality of life for residents and tourists alike.

Visitors come to Hawaii, and specifically the north shore of Oahu, to see the natural beauty and world-famous beaches. They don't want to see more strip malls.

Keep the country Country.

Response: The North Shore Sustainable Communities Plan (NSSCP) guides development for the region and was prepared with years of input from community members. Among the land uses defined in the NSSCP, the 4.56 acres with existing B-1 Neighborhood Business District that includes the existing Foodland grocery store was identified as the location to consolidate existing and future commercial use.

The Rural Community Commercial Center will expand the services and goods available to residents of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors. The modest development plan utilizes approximately 25 percent of the floor area ratio (FAR) allowed under City land use ordinance for this property and is consistent with the design guidelines of the NSSCP.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

From: Thomas Heck <littletheck@gmail.com>
Sent: Sunday, January 7, 2018 10:34 AM
To: Pupukea Rural Community Ctr

My name is Chris Heck iam a 27 year member of the IBEW local Union 1186, and residents of the North Shore 12 years. I have 4 boys which 3 have graduated Wahailua High. I support and feel the community center would benefit tremendously for the North Shore and well over due. Mahalos you for your time.

G70

111 S. King Street
Suite 170
Honolulu, HI 96813
808.523.5866
www.g70.design

June 27, 2018

Mr. Thomas Heck
Email: littletheck@gmail.com

Subject: Response to Comments on Draft EIS
Pūpūkea Rural Community Commercial Center
TMK: (1)5-9-011:068, 069, 070, 016
(Pūpūkea, Oʻahu, Hawaiʻi)

Dear Mr. Heck:

Thank you for your comment letter dated January 7, 2018 concerning the Draft Environmental Impact Statement (DEIS) for the Pūpūkea Rural Community Commercial Center project. The following responses are offered to your comments:

Comment: *My name is Chris Heck. I am a 27-year member of the IBEW local Union 1186, and resident of the North Shore 12 years. I have 4 boys which 3 have graduated Wahailua* [sic] *High. I support and feel the community center would benefit tremendously for the North Shore and well over due. Mahalos you for your time.*

Response: We appreciate that you made the time to voice your support for the proposed rural community commercial center at Pūpūkea. The owners are committed to support local businesses that complement and strengthen commerce on the North Shore, while preserving its identity as a rural community.

Your comment letter and this response will be published in the Final EIS, which will be available in the coming weeks through the Office of Environmental Quality Control EA/EIS library: http://oeqc2.doh.hawaii.gov/EA_EIS_Library/Forms/AllItems.aspx. Thank you for your participation in the environmental review process.

Sincerely,

GROUP 70 INTERNATIONAL, INC., dba G70

Jeff Overton, AICP, LEED AP
Principal

7.0

REFERENCES

7.0 LIST OF REFERENCES AND PREPARERS OF THE EIS

7.1 REFERENCES

Documents

City and County of Honolulu. 1990. Section 21-1.20, Revised Ordinances of Honolulu 1990. Chapter 21 as Amended (The Land Use Ordinance).

_____, Department of General Planning. 1992. *General Plan*.

_____, DPP. 2011. *North Shore Sustainable Communities Plan*. Prepared by Helber Hastert & Fee Planners, Inc. May.

Friedlander, A., G. Aeby, R. Brainard, E. Brown, K. Chaston, A. Clark, P. McGowan, T. Montgomery, W. Walsh, I. Williams and W. Wiltse. 2008. The State of Coral Reef Ecosystems of the Main Hawaiian Islands. pp. 219 – 262. In: J.E. Waddell and A.M. Clarke (eds.), The State of Coral Reef Ecosystems of the United States and Pacific Freely Associated States: 2008. NOAA Technical Memorandum NOS NCCOS 73. NOAA/NCCOS Center for Coastal Monitoring and Assessment's Biogeography Team. Silver Spring, MD. 569 pp.

Giambelluca, T.W., X. Shuai, M.L. Barnes, R.J. Alliss, R.J. Longman, T. Miura, Q. Chen, A.G. Frazier, R.G. Mudd, L. Cuo, and A.D. Businger. 2014. Evapotranspiration of Hawai'i. Final report submitted to the U.S. Army Corps of Engineers—Honolulu District, and the Commission on Water Resource Management, State of Hawai'i.

David, Reginald E. 2018. *Avian and Terrestrial Mammalian Surveys Conducted for the Pūpūkea Rural Community Commercial Center, Waialua District, Island of O'ahu*. Prepared for G70. April 4.

State of Hawai'i. 1996. *Hawai'i Revised Statutes, Chapter 226, Hawai'i State Plan*.

_____. Hawai'i Revised Statutes, Chapter 205-A, Coastal Zone Management Act.

_____. *Hawai'i 2050 Sustainability Plan*.

_____ Commission on Water Resource Management (CWRM). 2008. Department of Land and Natural Resources. *Hawaii Water Plan: Water Resource Protection Plan*. Prepared by Wilson Okamoto, Corp. June.

_____ Department of Defense, Civil Defense Division, Office of the Director of Civil Defense. 2013. *State of Hawai'i Multi-Hazard Mitigation Plan 2013 Update*.

_____ Department of Business, Economic Development and Tourism (DBEDT). 2014. *Commuter Adjusted Daytime Population on Oahu* Statistics Brief. Research & Economic Analysis Division.

_____ Department of Health Clean Water Branch (DOH CWB). No Date (n.d.). *Hawai'i's Nonpoint Source Management Plan.* Available on-line: http://health.hawaii.gov/cwb/clean-water-branch-home-page/polluted-runoff-control-program/prc-hawaiis-implementation-plan/

_____ Department of Health Clean Water Branch (DOH CWB). 2017a. *Hawaii Beach Monitoring Program*. May 22. Available on-line: https://health.hawaii.gov/cwb/files/2017/05/Hawaii-Beach-Monitoring-Program-170508.pdf

_____ Department of Health Clean Water Branch (DOH CWB). 2017b. Draft *2016 STATE OF HAWAII WATER QUALITY MONITORING AND ASSESSMENT REPORT: Integrated Report to the U.S. Environmental Protection Agency and the U.S. Congress. Pursuant to §303(d) and §305(b), Clean Water Act (P.L. 97-117)*. March 15.

_____ Department of Health, Clean Water Branch (CWB). 2014. Hawai'i Administrative Rules, Title 11, Chapter 54, *Water Quality Standards* (HAR §11-54). November 15.

United States Census Bureau / American FactFinder. 2010-*2014 American Community Survey 5-Year Estimates*. U.S. Census Bureau's American Community Survey Office. Web. 26 April 2017. Retrieved from http://factfinder2.census.gov.

United States Department of Agriculture, Soil Conservation Service, Soil Survey for the Islands of Kaua'i, O'ahu, Maui, Moloka'i, and Lāna'i, State of Hawai'i, August 1972.

United States Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office. Accessed August 7, 2017: https://www.fws.gov/pacificislands/fauna/HIhoarybat.html. Endangered Species in the Hawaiian Islands, Hawaiian Hoary Bat.

Water Resources Research Center, University of Hawai'i at Manoa, and Engineering Solutions, Inc. 2008. *Onsite Wastewater Treatment Survey and Assessment*. Prepared for: State of Hawai'i Department of Business, Economic Development & Tourism (DBEDT), Office of Planning, Hawai'i Coastal Zone Management Program, and Department of Health. March.

Websites

City and County of Honolulu, Honolulu Police Department. Police District Data. Retrieved from: http://www.honolulupd.org/

City and County of Honolulu, Emergency Services Department. EMS Data. Retrieved from: http://www.honolulu.gov/esdems.html

State of Hawai'i, Department of Education. School District data. Retrieved from: http://doe.k12.hi.us/index.php

7.2 PREPARERS OF THE EIS

Following is a list of individuals that contributed to the preparation and completion of this Environmental Impact Statement (EIS). The list includes the names of individual or company, and role or subfield of professional expertise utilized to conduct and complete the EIS.

G70

Jeffrey H. Overton, AICP, LEED AP	Principal Planner
Paul T. Matsuda, P.E., LEED AP	Principal, Director of Civil Engineering
Steven K. Doo, P.E.	Project Manager
Barrie Fox Morgan, AICP	Environmental Planner
Lauren Esaki-Kua	Planner
Silas Haglund	Graphics and Document Specialist
Stephanie Saephan, GISP	GIS Specialist
Reyna DePonte	Administrative Support
Technical Consultant	**Area of Specialty**
AECOS Consultants	Natural Resources Assessment
Rana Biological Consulting	Avian and Terrestrial Mammalian Survey
Tom Nance Water Resource Engineering	Ground and Surface Water Analyses
Marine Research Consultants, Inc.	Surface Water Quality & Marine Assessment
Keala Pono Consultants	Archaeological Inventory Survey Cultural Impact Assessment
Fehr & Peers	Transportation Impact Analysis Report
Y. Ebisu & Associates	Noise Study
G70, Civil Engineering	Civil Engineering

PŪPŪKEA RURAL COMMUNITY COMMERCIAL CENTER

VOLUME II: TECHNICAL APPENDICES

APPLICANT:

HANAPOHAKU

PREPARED BY:

G70

111 S. KING STREET, SUITE 170 ~~925 BETHEL STREET, 5TH FLOOR~~
HONOLULU, HI 96813

JULY 2018 ~~NOVEMBER 2017~~

PŪPŪKEA RURAL COMMUNITY COMMERCIAL CENTER

VOLUME II: TECHNICAL APPENDICES

TMK (1) 5-9-011:068, 069, 070, 016
PŪPŪKEA, O'AHU, HAWAI'I

APPLICANT:

HANAPOHAKU

59-712 KAMEHAMEHA HIGHWAY
HALE'IWA, HAWAI'I 96712

PREPARED BY:

G70

111 S. KING STREET, SUITE 170 ~~925 BETHEL STREET, 5TH FLOOR~~
HONOLULU, HI 96813

APPROVING AGENCY:

CITY AND COUNTY OF HONOLULU
DEPARTMENT OF PLANNING AND PERMITTING

JULY 2018 ~~NOVEMBER 2017~~

VOLUME 2: TECHNICAL APPENDICES

A. Natural resources assessment for improvements proposed for the Pūpūkea Rural Community Commercial Center, Island of Oʻahu

Avian and Terrestrial Mammalian Surveys Conducted for the Pūpūkea Rural Community Commercial Center, Waialua District, Island of Oʻahu

B. Assessment of Potential Impacts on Water Resources of the Proposed Pupukea Rural Community Commercial Center

C. Assessment of Marine Water Chemistry and Community Structure in the Vicinity of the Proposed Pupukea Rural Community Commercial Center, North Shore, Oahu, Hawaii

D. Cultural Impact Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi

E. Archaeological Assessment

State Historical Preservation Division Acceptance of Archeological Assessment Report

Archaeological Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi

F. Transportation Impact Analysis Report

G. Noise Study for Proposed Pūpūkea Rural Community Commercial Center, Pūpūkea, Oahu

H. Preliminary Engineering Report

APPENDIX A

NATURAL RESOURCES ASSESSMENT FOR THE
PROPOSED PŪPŪKEA RURAL COMMUNITY CENTER, ISLAND OF O'AHU

AVIAN AND TERRESTRIAL MAMMALIAN SURVEYS CONDUCTED FOR
THE PŪPŪKEA RURAL COMMUNITY COMMERCIAL CENTER,
WAIALUA DISTRICT, ISLAND OF O'AHU

NATURAL RESOURCES ASSESSMENT FOR THE PROPOSED PŪPŪKEA RURAL COMMUNITY CENTER, ISLAND OF O‘AHU

Natural resources assessment for improvements proposed for the Pūpūkea Rural Community Commercial Center, Island of Oʻahu[1]

September 13, 2017 *AECOS* No. 1485

Eric B. Guinther and Susan Burr
AECOS Inc.
Kamehameha Hwy., Kāneʻohe, Hawaiʻi 96744
Phone: (808) 235-7770 Fax: (808) 254-3029 Email: guinther@aecos.com

Introduction

Hanapohaku LLC is proposing to make improvements to three lots (TMKs: (1) 5-9-011: 068, 069, & 070 at Pūpūkea on the north shore of Oʻahu (Figure 1). The site is located on Kamehameha Highway between Pahoe Road and the Foodland market and parking lot. The project involves site improvements of existing commercial facilities. This report presents results of biological surveys conducted across the 2.719 ac of land (see Figure 2).

The focus of this report is on determining whether sensitive biological resources occur on the project property. Sensitive biota includes species currently listed or proposed for listing under by the federal Endangered Species Act of 1973 as amended (ESA; see USFWS, 2015), or by state administrative rules (DLNR, 1997, 2015), or species comprising a community of native plants and animals that may or may not be under any specific threat of extirpation, but which would be regarded as special and worthy of preservation. A rare native plant not protected by statute could also be regarded as a "sensitive" or important biological resource, as might a special non-native tree protected by county ordinance. Nearly all of the subject property has been cleared and developed, and the vast majority of plants present there are now landscape plantings.

[1] Report prepared for G70 for use in preparing environmental assessment documents.

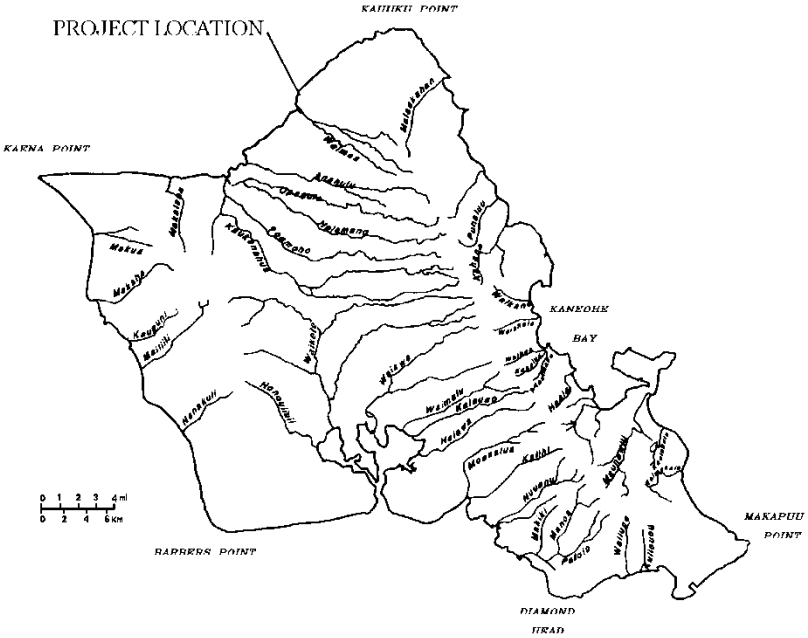


Figure 1. Map of the Island of O'ahu
showing streams and general project location.

Methods

Biological surveys of the site were conducted on April 13, 2017 by the report authors. Plant names follow *Manual of the Flowering Plants of Hawai'i* (Wagner, Herbst, & Sohmer, 1990; Wagner & Herbst, 1999) for native and naturalized flowering plants, *Hawai'i's Ferns and Fern Allies* (Palmer, 2003) for ferns, and *A Tropical Garden Flora* (Staples & Herbst, 2005) for ornamental plants. More recent name changes for naturalized plant species follow Imada (2012).

The avian phylogenetic order and nomenclature used in this report follows the *Checklist* of *North and Middle America Birds* by American Ornithological Society (AOS, 2017).

Plant Survey

A wandering (pedestrian) survey was utilized to survey plants on the property. Plant species were identified as they were encountered. Because a great many

of the plant species are present as a result of plantings made to the landscape, no attempt was made to quantify, even in a relative sense, abundances for these essentially ornamental plants. Only a very narrow band (under 12 m or 36 ft in width) located along the *mauka* or east side of the parcels remains in undeveloped scrub growth that previously dominated the parcels. Image in Fig. 2 shows earlier period when about two-thirds of the project area was in scrub growth.

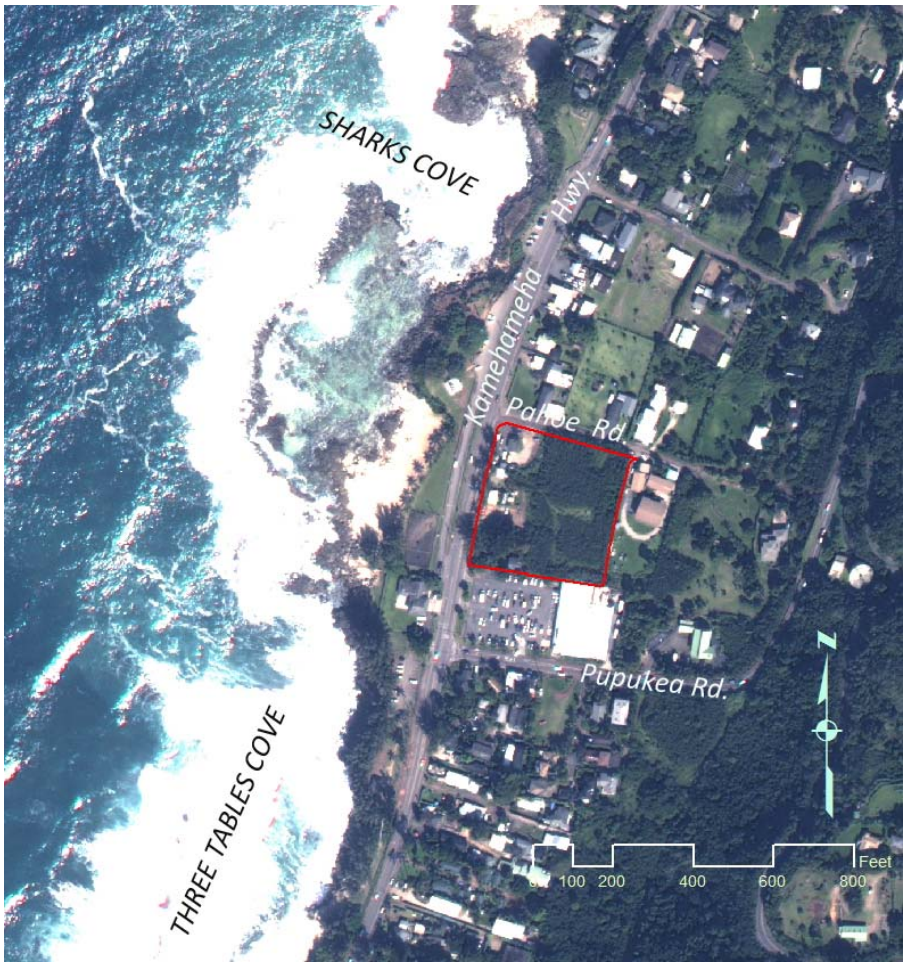


Figure 2. Aerial image of project property (outlined in red).

Any plant not immediately recognized during the survey was photographed and/or a representative feature (flower, fruit, branch) collected for later identification at the laboratory.

Vertebrate Surveys

Two avian count stations were established within the project area and a single six-minute avian point-count was made at each station on April 13, 2017. Field observations were made with the aid of Leica Ultravid 8 X 42 binoculars and by listening for vocalizations. The avian counts were conducted between 0900 and 1030 in the morning. Time not spent counting at point-count stations was used to search the site for species and habitats not detected during the point-counts and any additional species observed are listed as "incidental sightings". Weather conditions were ideal, with no rain, unlimited visibility, and winds of between 10 and 15 kph.

The survey of mammals and other fauna (i.e., notable insects, obvious reptiles) was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally of all terrestrial vertebrate mammalian species detected within the project area was kept along with notes of general abundances.

Survey Results

Vegetation

All but perhaps 5% or less of the project area is developed as parking and numerous small shops (each of these areas landscaped to a lesser or greater degree). The undeveloped land is a secondary scrub forest dominated by *koa haole* (*Leucaena leucocephala*) or Guinea grass (*Megathyrsus maximus*; see Figure 3) in a few open areas.

Flora

The following checklist of plant species (Table 1) was compiled from observations made during our field survey. The entries are arranged alphabetically under their family names and include scientific name, common name, and status of the species (i.e., native or non-native; see key at end of table). Plants with a status other than ornamental that are used in the landscaping (that is, planted for ornamental reasons) are marked with note <1> in the last column. Although naturalized or native species, none of these occurs naturally on the property. "Status" reflects the state-wide distributional status of a species, so an indigenous species used as an ornamental is still an indigenous species.

Figure 3. Remnant of former vegetation dominated by *koa haole* and Guinea grass beyond a gravel parking area.

Table 1. Checklist of plants observed at the Pūpūkea Rural Commercial Center site in Pūpūkea (April 2017).

Species listed by family	Common name	Status	Notes
FERNS AND FERN ALLIES			
DAVALLIACEAE			
Davallia fejeensis W.J. Hooker	lacy hare's-foot fern	Orn	
NEPHROLEPIDACEAE			
Nephrolepis cordifolia (L.) C. Presl.	*kupukupu*	**Ind**	<1>
PSILOTACEAE			
Psilotum nudum (L.) P. Beauv.	*moa*	**Ind**	<1>
GYMNOSPERMS			
CONIFERS AND CYCADS			
CUPRESSACEAE			
Juniperus horizontalis Moench	creeping juniper	Orn	
FLOWERING PLANTS			
DICOTYLEDONES			
ACANTHACEAE			
Asystasia gangetica (L.) T. Anderson	Chinese violet	Nat	<3>
Ruellia brittoniana E. Leonard	---	Nat	<1>
AMARANTHACEAE			
Alternanthera pungens Kunth	khaki weed	Nat	
Amaranthus spinosus L.	spiny amaranth	Nat	
Amaranthus viridus L.	slender amaranth	Nat	
Celosia cristata L.	cockscomb	Orn	
ANACARDIACEAE			
Mangifera indica L.	mango	Nat	<1>
Schinus terebinthefolius Raddi	Christmas berry	Nat	<3>
APOCYNACEAE			
Plumeria rubra L.	graveyard flower	Orn	
Vinca minor L.	common periwinkle	Nat	<1>
ARALIACEAE			
Polycias fruticosa (L.) Harms	parsley panax	Orn	
Polycias guilfoylei (W. Bull) F. Bailey	panax	Orn	
Schefflera actinophylla (Endl.) Harms	octopus tree	Orn	

Table 1 (continued).

Species listed by family	Common name	Status	Notes
ASTERACEAE (COMPOSITAE)			
Calyptocarpus vialis Less.	---	Nat	
Parthenium hysterophorus L.	false ragweed	Nat	
Senecio cineraria A.P. de Cand.	dusty-miller	Orn	
Sonchus oleraceus L.	sow thistle	Nat	
BIGNONIACEAE			
Spathodea campanulata P. Beauv.	African tulip tree	Nat	<3>
BORAGINACEAE			
Cordia subcordata Lam.	*kou*	**Ind**	<1>
Heliotropium currasavicum L.	*kīpūkai*	**Ind**	
BRASSICACEAE			
Coronopus didymus (L.) Sm.	swinecress	Nat	
Lepidium virginicum L.	---	Nat	
CACTACEAE			
Hylocereus undatus (Haworth) Brit. & Rose	night-blooming cereus	Nat	<1>
CASUARINACEAE			
Casuarina equisetifolia L.	ironwood	Nat	
CLUSIACEAE			
Clusea rosea Jacq.	autograph tree	Nat	<3>
COMBRETACEAE			
Conocarpus erectus var. *sericeus* L.	silver buttonwood	Nat	<1>
CONVOLVULACEAE			
Ipomoea obscura (L.) Ker-Gawl	---	Nat	<3>
CUCURBITACEAE			
Coccinia grandis (L.) Voigt	scarlet-fruited gourd	Nat	<2><3>
Momordica charantia L.	wild bitter melon	Nat	
EUPHORBIACEAE			
Codiaeum variegatum (L.) Blume	croton	Orn	
Euphorbia hirta L.	garden spurge	Nat	<3>
Euphorbia hypericifolia L.	graceful spurge	Nat	
Euphorbia leucocephala Lotsy	flor-de-Niño	Orn	
Euphorbia milii Des Moulins	crown-of-thorns	Orn	
Euphorbia prostrata Aiton	prostrate spurge	Nat	
Pedilanthus tithymaloides (L.) Poiteau	Japanese poinsettia	Orn	
Ricinus communis L.	castor bean	Nat	<3>
FABACEAE			
Canavalia cathartica Thouars	*maunaloa*	Nat	<2>

Table 1 (continued).

Species listed by family	Common name	Status	Notes
FABACEAE (continued).			
Desmanthus pernambucanus (L.) Thellung	virgate mimosa	Nat	
Leucaena leucocephala (Lam.) deWit	*koa haole*	Nat	<2><3>
Neonotonia wightii (Wight & Arnott) Lackey	glycine vine	Nat	<2><3>
Senna surattensis (N.L. Burm.) H.S/ Irwin & Barneby	scrambled-egg plant	Nat	<1>
GERANIACEAE			
Pelargonium x *hortorum* L. H. Bailey	bedding geranium	Orn	
GOODINACEAE			
Scaevola sericea Vahl	*naupaka kahakai*	**Ind**	<1>
LAMIACEAE			
Lavandula sp.	lavander	Orn	
Mentha sp.	common mint	Orn	
Ocimum basilicum L.	sweet basil	Orn	
Plectranthus amboinicus (Lour.) Spreng.	false oregano	Orn	
Plectranthus amboinicus 'Variegata'	Cuban oregano	Orn	
Plectranthus parviflorus Willd.	*ʻalaʻala wai nui wahine*	**Ind**	<1>
LYTHRACEAE			
Cuphea carthagenensis (Jacq) Macbr.	false heather	Nat	<1>
MALVACEAE			
Hibiscus acetosella Hiern	red-lvd hibiscus	Orn	<4>
Hibiscus rosa-sinensis L.	Chinese hibiscus cult.	Orn	
Malvastrum coromandelianum (L.) Garcke	false mallow	Nat	<3>
MORACEAE			
Ficus elastica Roxb. ex Hornem.	Indian Rubber tree	Nat	
Ficus microcarpa L. f.	Chinese banyan	Nat	<3>
NYCTAGINACEAE			
Bougainvillea cf. *spectabilis* Willd.	bougainvillea	Orn	
OLEACEAE			
Jasminum sambac (L) W. Aiton	*pikake*	Orn	

Table 1 (continued).

Species listed by family	Common name	Status	Notes
OXALIDACEAE			
Oxalis corniculata L.	*ʻihiʻai,* yellow wood sorrel	**Pol?**	
PASSIFLORACEAE			
Passiflora edulis Sims	passion fruit	Nat	<3>
Passiflora suberosa L.	*huehue haole*	Nat	
PHYTOLACCACEAE			
Rivina humilis L.	coral berry	Nat	<2>
PIPERACEAE			
Peperomia obtusifolia (L.) A. Dietrich	peperomia	Orn	
Peperomia obtusifolia 'variegata'	cult.	Orn	
PLANTAGINACEAE			
Plantago lanceolata L.	English plantain	Nat	
PLUMBAGINACEAE			
Plumbago auriculata Lam.	blue plumbago	Orn	
PORTULACEAE			
Portulaca oleracea L.	pigweed	Nat	
ROSACEAE			
Rosa odorata x *R. chinensis*	tea rose	Orn	
Rosa sp.	rose	Orn	<4>
RUBIACEAE			
Gardenia augusta (L.) Merr.	gardenia	Orn	<4>
Ixora sp.	ixora	Orn	
RUTACEAE			
Murraya paniculata (L.) Jack	mock orange	Nat	<3>
SCROPHULARIACEAE			
Russelia equisetiformis Schlecht.	coral plant	Orn	
SOLANACEAE			
Capsicum annum L.	*nioi*, bird pepper	Nat	
Solanum americanum Mill.	*pōpolo*	**Ind**	
FLOWERING PLANTS			
MONOCOTYLEDONES			
AGAVACEAE			
Agave cf. *attenuata* Salm-Dyck	swan's-neck agave	Nat	<1><4>
Cordyline cf. *australis* 'Purple Tower'	cult.	Orn	
Cordyline fruticosa (L.) A. Chev.	*ki,* ti	Nat	<1>
Dracaena aubryana E. Morren	*lance dracaena*	Orn	

Table 1 (continued).

Species listed by family	Common name	Status	Notes
AGAVACEAE (continued).			
Dracaena marginata Lam.	money tree	Orn	
Dracaena marginata 'Tricolor'	dracaena tricolor	Orn	
Dracaena fragrans (L.) Ker Gawl.	corn plant	Orn	
Dracaena sanderiana M.T. Masters	sanderiana	Orn	
Sansevieria trifasciata Prain	bowstring-hemp	Orn	<3>
Yucca cf. *gloriosa* L.	Spanish-bayonet	Orn	<4>
ARACEAE			
Calocasia esculenta (L.) Schott	*kalo*	**Pol**	<1>
Epipremnum pinnatum (L.) Engler	golden pothos	Nat	<3>
Monstera deliciosa Lieb.	monstera	Orn	
Philodendron xanadu Croat, Mayo & J. Boos	---	Orn	
Spathophyllum sp.	---	Orn	
Syngonium L.	nephthytis	Nat	<3>
ARECACEAE			
Cocos nucifera L.	coconut palm	Nat	
Dypsis decaryi (Jumelle) Beentje & J. Drans.	triangle palm	Orn	
Dypsis lutescens (H. Wendl.) Beentje & J. Dransfield	areca palm	Orn	
Phoenix roebelenii O'Brien	dwarf date palm	Orn	
Pritchardia pacifica Seemann & H. Wendl.	Fiji fan palm	Orn	
Ptychosperma macarthurii (Vietch.) J. D. Hook.	Macarthur palm	Orn	
Rhapis sp.	lady palm	Orn	
Veitchia merrilli (Becarri) H.E. Moore	Manila palm	Orn	
BROMELIACEAE			
Aechmea cf. *blanchetiana* (J. G. Baker) L. B. Smith	---	Orn	
Tilandsia usneoides (L.) L.	*hinahina*	Orn	
CANNACEAE			
Canna x *generalis* L.H. Bailey	garden canna	Orn	
COSTACEAE			
Costus sp.	spiral flag	Orn	
COMMELINACEAE			
Tradescantia spathacea Swartz	oyster plant	Orn	

Table 1 (continued).

Species listed by family	Common name	Status	Notes
CYCLANTHACEAE			
Cyclanthus bipartitus Poit.	cyclanthus	Orn	
CYPERACEAE			
Aechmea cf. blanchetiana		Orn	
Carex wahuensis C.A. Mey.	---	**End**	<1>
Cyperus gracilis R. Br.	McCoy grass	Nat	
HELICONIACEAE			
Heliconia sp	heliconia	Orn	<4>
IRIDACEAE			
Dietes bicolor (Steudel) Klatt	iris	Orn	
LILIACEAE			
Asparagus densiflorus (Kunth) Jess.	asparagus "fern"	Nat	
Asparagus densiflorus 'Myers'	foxtail asparagus	Orn	
Chlorophytum comosum (Thunb.) Jacq.	airplane plant	Orn	
Crinum asiaticum L.	giant lily	Nat	
Dianella sandwicensis Hook. & Arnott	*ʻukiʻuki*	**Ind**	<1>
Ophiopogon sp.	---	Orn	<4>
MUSACEAE			
Musa cf. *acuminata* Colla	banana	Orn	
POACEAE			
Axonopus compressus (Swartz) P. Beauv.	brd-lv carpet grass	Nat	
Chloris barbata (L.) Sw.	swollen fingergrass	Nat	
Chloris radiata (L.) Sw.	plushgrass	Nat	
Cymbopogon citratus (C. Nees) Stapf	lemon grass	Orn	
Cynodon dactylon (L.) Pers.	Bermuda grass	Nat	
Dactyloctenium aegypticum (L.) Willd.	beach wiregrass	Nat	
Digiteria ciliaris (Retz.) Koeler	Henry's crabgrasss	Nat	
Eleusine indica (L.) Gaertn.	wiregrass	Nat	
Lolium multiflorum Lam.	Italian ryegrass	Nat	
Megathyrsus maximus (Jacq.) B.K. Simon & W.L. jacobs	Guinea grass	Nat	<2><3>
Sporobolus sp.	dropseed, rattail grass	Nat	
Stenotaphrum secundatum (Walter) Kuntze	St. Augustine grass	Nat	<1>

Table 1 (continued).

Species listed by family	Common name	Status	Notes
STRELITZIACEAE			
Strelitzia nicolai Regel & Körnicke	white bird-of-paradise	Orn	
ZINGIBERACEAE			
Alpinia purpurata (Vieil.) K. Schum.	red ginger	Nat	<1>

Legend to Table 1

STATUS = distributional status for the Hawaiian Islands:

Ind = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.

Table 1 (continued).

Nat = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.

Orn = A cultivated plant; a species not thought to be naturalized (spreading on its own) in Hawaiʻi.

Pol = An early Polynesian introduction. Introduced before 1778.

NOTES: <1> – Planted here as a landscape plant.
<2> - Found mostly in the *koa haole* scrub forest.
<3> - Also reported by Char (2004) from the same property.
<4> – Plant lacking key diagnostic characteristics (flower, fruit); identification, therefore, uncertain.

The vascular flora of the project site comprises a mix of alien, native, and ornamental species of trees, shrubs, grasses, and forbs, comprising 135 taxa in 56 families. Nine of the 135 taxa (7%) are considered native (8 indigenous; one endemic), and these are common, widely distributed species. Each is planted as part of the landscaping or volunteering due to regular landscape watering (e.g., *moa* or *Psilotum nudum*). Two are weedy volunteers: *kīpūkai* (*Heliotropium currasavicum*) and *pōpolo* (*Solanum americanum*).

Two species (1%) of early Polynesian introductions (so-called "canoe plants") are present. The canoe plants—*ʻihiʻai* (*Oxalis corniculata*) and *kalo* (*Calocasia esculenta*)—are widely distributed throughout the Hawaiian Islands.

Inclusion of the ornamentals on the property obviously accounts for the high species count; and it is likely that a few ornamentals planted here were not encountered (planting beds are extensive close to the numerous small buildings; see Figure 4) or were unrecognized (not in flower or fruit). A total of 63 species

S. Burr photo

Figure 4. Typical view across portion of site showing typical access road, parking, and one of the landscaped commercial venues.

(47%) with the status of "ornamental" is listed in Table 1. However, another 19 species (14%) are planted here as a landscape plants.

Avifauna

During the 6-minute visual surveys, we identified 36 individual birds of 9 alien or domesticated species representing 7 families (Table 2). Common Myna (*Acridotheres tristis*) was the most common species observed at the project site. The only other bird observed at both count stations was Red-vented Bulbul (*Pycnonotus cafer*). Three domestic chicken (*Gallus* sp.) were observed at Sta. 2. All remaining birds were observed once or twice at one of the two stations: Cattle Egret (*Bubulcus ibis*), Spotted Dove (*Streptopelia chinensis*), Zebra Dove (*Geopelia striata*), Red-whiskered Bulbul (*Pycnonotus jocosus*), Japanese White-eye (*Zosterops japonicus*), and Common Waxbill (*Estrilda astrild*). A single Saffron Finch (*Sicalis flaveola*) was recorded as an incidental observation.

Table 2. Avian survey counts for project site on April 13, 2017 (6-min visual surveys).

Scientific name	Common name	Status	6-minute Counts Sta. 1	6-minute Counts Sta. 2	***RA*** (total/Stas.)
	GALLIFORMES				
	PHASIANIDAE – Pheasants & Allies				
Gallus sp.	Domestic Chicken	D	--	3	1.5
	PELECANIFORMES				
	ARDEIDAE – Herons, Bitterns, & Allies				
Bubulcus ibis L.	Cattle Egret	A	--	1	0.5
	COLOMBIFORMES				
	COLUMBIDAE – Pigeons & Doves				
Streptopelia chinensis Scopoli	Spotted Dove	A	2	--	1.0
Geopelia striata L.	Zebra Dove	A	--	2	1.0
	PYCNONOTIDAE – Bulbuls				
Pycnonotus cafer L.	Red-vented Bulbul	A	2	2	2.0
Pycnonotus jocosus L.	Red-whiskered Bulbul	A	1	--	0.5
	ZOSTEROPIDAE – White-eyes				
Zosterops japonicas Temminck & Schlegel	Japanese White-eye	A	1	--	0.5

Table 2 (continued).

Scientific name	Common name	Status	6-minute Counts Sta. 1	6-minute Counts Sta. 2	***RA*** (total/Stas.)
	STURNIDAE – Starlings				
Acridotheres tristis L.	Common Myna	A	8	13	10.5
	PASSERIFORMES				
	ESTRILDIDAE – Estrildid Finches				
Estrilda astrild L.	Common Waxbill	A	1	--	0.5

Legend to Table 2

Status = distributional status for the Hawaiian Islands:

D Domestic – Domesticated species not considered established in the wild on O'ahu

A Alien – Introduced to the Hawaiian Islands by humans

RA Relative abundance – number of birds detected divided by number of count stations.

Mammals

We observed a single pet cat (*Felis catus*) resting near a food truck on the site. Small Indian Mongoose (*Herpestes a. auropunctatus*) and any of the four rodents naturalized in the Hawaiian Islands (Family Muridae) are likely to inhabit the project vicinity.

Other Notable Fauna

Sonoran Carpenter Bee (*Xylocopa sonorina*) was ubiquitous throughout the Project site. Brown Anole (*Anolis sagrei*) was abundant in shrubbery and in the scrub forest on the south end of the project site. We observed a single Green Anole (*Anolis carolinensis*) and the caretaker reported Jackson's Chameleon (*Chamaeleo jacksonii xantholophus*) as present in the area.

Discussion

Botanical Resources

This project site was previously surveyed for plants by Winona Char (Char, 2004). At the time, the subject parcels (then a single parcel) comprised "a few small shops, but most of the parcel [wa]s covered in dense koa haole (*Leucaena leucocephala*) thicket" generally similar to what appears in the aerial image (Fig. 2). In the intervening years, most of the scrub has been cleared. Areas not yet cleared are essentially as described by Char; areas recently cleared are either bare

ground or support a thick growth of Guinea grass (*Megathyrsus maximus*), also described by Char for open areas within the *koa haole* scrub. Char found no plants of any particular interest or conservation concern (indeed, "no native species").

During our survey, no plant species listed as threatened or endangered or proposed for listing as set forth in the Endangered Species Act of 1973, as amended (16 U.S.C. 1531-1543; USFWS, 2015; DLNR, 1997) were seen, and none have been documented historically from the Project area. For plants, state listing follows the federal listing. The vegetation over the 2.3 ac is neither pristine nor unique and is not considered worthy of conservation.

Avian Resources

The findings of the avian survey are consistent with those that would be expected in a highly disturbed area at this elevation on Oʻahu. The only birds observed in the project area are naturalized, urban dwelling birds. Of the ten species observed in 2017, six (Cattle Egret, Red-vented Bulbul, Red-whiskered Bulbul, Common Myna, Spotted Dove, and Japanese White-eye) are listed as injurious species—animals known to be harmful to agriculture, aquaculture, indigenous wildlife or plants, or constitute a nuisance or health hazard (HDLNR, 2015). The property was previously surveyed by Phil Bruner (Bruner, 2004), listing 12 species: 7 in common with our results. Five species observed by Bruner, but not seen in 2017, are all common, non-native birds: White-rumped Shama (*Copsychus malabaricus*), Red-crested Cardinal (*Paroaria coronata*), Northern Cardinal (*Cardinalis cardinalis*), House Finch (*Carpodacus mexicanus*), and House Sparrow (*Passer domesticus*).

No species listed as state or federally endangered or threatened (HDLNR, 2015; USFWS, 2017) are present. The project is not expected to adversely impact avian resources extant in the project vicinity.

Mammalian Resources

The findings of the mammalian survey are consistent with the location of the property and the habitats present on or adjacent to the site. Although no rodents were recorded in our survey, some, if not all, of the four established alien Muridae found on Hawaiʻi—roof rat (*Rattus rattus*), brown rat (*Rattus norvegicus*), black rat (*Rattus exulans hawaiiensis*), and European house mouse (*Mus musculus domesticus*)—could use various resources within the project area. All of these introduced rodents are deleterious to native ecosystems and native species. No mammalian species currently protected or proposed for protection under either the federal or State of Hawaiʻi endangered species

programs were detected during the course of this survey (DLNR, 2015; USFWS, 2015).

The only native terrestrial mammal in Hawaiʻi is the endangered Hawaiian hoary bat or *ʻōpeʻapeʻa* (*Lasiurus cinereus semotus*). No Hawaiian hoary bats were detected during the course of our survey. This bat is known from Oʻahu, but only in small numbers at low elevations. It is possible that this species may use some of the taller trees at the project site as roost trees. Hawaiian hoary bat is a foliage roosting, widely-dispersed mammal: individuals typically roost widely separated from one another.

Other Fauna

Brown Anole, Green Anole, and Jackson's Chameleon are listed as injurious species (HDLNR, 2015). No species listed as state or federally endangered or threatened (HDLNR, 2015; USFWS, 2017) are present.

Potential Impacts to Protected Species

Seabirds - Although no seabirds were detected during our survey, it is possible that the endemic sub-species of Newell's Shearwater (*Puffinus auricularis newelli*)ʻ also known as *ʻaʻo*, over-fly the Project site between April and the middle of December each year in small numbers (USFWS, 1983). Newell's Shearwaters are not known to breed on the Island of Oʻahu, though seabirds likely to be this species have been recorded on ornithological radar in low numbers flying over parts of the island. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, these birds may collide with man-made structures, and either killed outright, or injured to become easy prey for feral mammals. If the Project includes installation of outdoor lights, fixtures should be directional and point down and away from the ocean shore; all lights need to be properly shielded and aimed towards the ground. Outdoor lighting guidelines are provided by HDLNR-DOFAW (2016). Minimizing lighting directed towards the ocean is also an important consideration.

Hawaiian Hoary Bat - The principal potential impact that construction activity poses to bats is if larger trees are removed for anticipated construction. The removal of tall vegetation within the project area may temporarily displace individual bats using the vegetation for roosting. However, bats use multiple roosts within their home territories, so disturbance to one roost is unlikely to be significant. During the pupping season, between June 1 and September 15, females carrying pups may be less able to rapidly vacate a roost site if the tree is

being trimmed or felled. Further, adult female bats sometimes leave their pups in the roost tree while they forage. Very small pups may be unable to flee a tree that is being felled. Potential adverse effects from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 m (15 ft) during the pupping season.

Federal Jurisdictional Waters / Critical Habitat

Our survey revealed no federal jurisdictional waters (streams or wetlands) on the subject property. No federal Critical Habitat exists for any species on or adjacent to the project area. Thus, modification of habitats on all or any part of the site will not result in an impact to federally designated Critical Habitat. There is no equivalent statute under state law.

References

American Ornithologists' Union (AOU). 2017. AOU Checklist of North and Middle American Birds (7th Edition and Supplements). Available online at: http://www.americanornithology.org/content/aou-checklist-north-and-middle-american-birds-7th-edition-and-supplements; last visited April 14, 2017.

Bruner, P. L. 2004. Avifaunal and feral mammal field survey of TMK 5-9-11:17 Pupukea, Oahu. Prp. for Belt Collins Hawaii Ltd. 6 pp.

Char, W. 2004. Untitled, letter report. Prep. for Belt Collins Hawaii Ltd. Char & Associates. 4 pp.

Hawaiʻi Department of Land and Natural Resources (HDLNR). 1997. Chapter 107. Threatened and Endangered Plants. Department of Land and Natural Resources. State of Hawaii. Administrative Rule under Title 13. Subtitle 5, Part 1, dated February 17, 2015.

_____. 2015. Chapter 124. Indigenous Wildlife, Endangered, Injurious Wildlife, Introduced Wild Birds, and Introduced Wildlife. Department of Land and Natural Resources. State of Hawaii. Administrative Rule under Title 13. Subtitle 5, Part 2, dated February 17, 2015.

_____ (HDLNR-DOFAW) 2016. Wildlife Lighting. PDF available at URL: http://dlnr.hawaii.gov/wildlife/files/2016/03/DOC439.pdf.

Imada, C. T. 2012. Hawaiian Native and Naturalized Vascular Plants Checklist (December 2012 update). Bishop Museum Tech. Rept. 60. 380 pp.

Palmer, D. D. 2003. *Hawai`i's ferns and fern allies*. University of Hawaii Press, Honolulu. 324 pp.

Staples, G. W. and D. R. Herbst. 2005. *A Tropical Garden Flora. Plants Cultivated in the Hawaiian Islands and other Tropical Places.* Bishop Museum, Honolulu. 908 pp.

U.S. Fish & Wildlife Service (USFWS). 1983. Hawaiian Dark-Rumped Petrel & Newell's Manx Shearwater Recovery Plan. USFWS, Portland, Oregon. February 1983.

_____. 2017. Endangered and Threatened Wildlife and Plants. 50 CFR 17:11 and 17:12. Available online at URL: http://ecos.fws.gov/tess_public/pub/stateListingAndOccurrenceIndividual.jsp?state=HI&s8fid=112761032792&s8fid=112762573902; last accessed on April 14, 2017.

Wagner, W. L., D. R. Herbst and S.H. Sohmer. 1990. *Manual of the Flowering Plants of Hawaiʻi: Volume I and II*. Bishop Museum Special Publication 83. University of Hawaiʻi Press. 1853 pp.

_____ and _____. 1999. *Supplement to the Manual of the flowering plants of Hawaiʻi*, pp. 1855-1918. *In:* Wagner, W.L., D.R. Herbst, and S.H. Sohmer, Manual of the flowering plants of Hawaiʻi. Revised edition. 2 vols. University of Hawaii Press and B.P. Bishop Museum.

Avian and Terrestrial Mammalian Surveys Conducted for the Pūpūkea Rural Community Commercial Center, Waialua District, Island of O‘ahu

Avian and Terrestrial Mammalian Surveys Conducted for the Pūpūkea Rural Community Commercial Center, Waialua District, Island of O‘ahu

Prepared by:
Reginald E. David
Rana Biological Consulting
P.O. Box 1371
Kailua-Kona, Hawai‘i 96745

Prepared for:
Group 70 International, Inc. (dba) G 70)
111 S. King Street, Suite 170
Honolulu, HI 96813

April 4, 2018

Table of Contents

Introduction **3**
General Site and Project Description 3

Methods **8**
Avian Survey Methods 8
Mammalian Survey Methods 8

Results **8**
Avian Point Count Survey 8
Seabird Search 10
Mammalian Survey 10

Discussion **10**
Avian Resources 10
Mammalian Resources 13

Potential Impacts to Protected Species **13**
Seabirds 13
Hawaiian hoary bat 14

Critical Habitat **14**

Recommendations **14**

Glossary **15**

Literature Cited **16**

Introduction

Hanapohaku LLC is proposing to make improvements to approximately 2.719 acres of land identified as three separate Tax map Keys (TMK), (TMKs: (1) 5-9-011: 068, 069, & 070 located immediately north of the Foodland Grocery Store on the corner of Kamehameha Highway and Pūpūkea Road. The fourth parcel covered by the project is the 1.84-acre parcel on which the Foodland grocery store is located (the "Foodland parcel"), which is owned by The Sullivan Family Limited Partnership and the Maurice and Joanna Sullivan Family Foundation (collectively the "Sullivan Entities"). The Foodland store was built in 1980, and is approximately 21,650 square feet in size and is identified as TMK: (1) 5-9-016. The property has been used for commercial purposes for more than a century.

This report describes the methods used and the results of a supplementary avian and terrestrial mammalian surveys conducted on the subject properties as part of the environmental disclosure process associated with the proposed project.

The primary purpose of the surveys was to determine if there are any avian or mammalian species currently listed, or proposed for listing under either federal or State of Hawaiʻi endangered species statutes within or adjacent to the study area. The federal and State of Hawaiʻi listed species status follows species identified in the following referenced documents, (Department of Land and Natural Resources (DLNR) 1998; U. S. Fish & Wildlife Service (USFWS) 2016). Fieldwork was conducted on March 18, 2018.

Hawaiian and scientific names are italicized in the text. A glossary of technical terms and acronyms used in the document, which may be unfamiliar to the reader, are included at the end of the narrative text.

General Site and Project Description

The Project Area abuts Kamehameha Highway on its west side, and is bound to the north by Pāhoe Road and to the south by the Foodland parcel (Figure 1). All four parcels are developed. They contain small shops, food trucks, surfboard rentals, bicycle rentals, and parking lots etc. (Figures 2 - 6). As can been seen in the figures the site is almost completely developed.

The landowner is proposing to redevelop the three northern lots into a rural community commercial center to expand the commercial services available to the resident of the Pūpūkea, Waimea and Kawailoa communities and the region's visitors. The types of businesses and services may include urgent medical care services, credit union, professional services, surf shop and action sports, fitness studio, childcare, health food market/deli, mobile food establishments and restaurant.

Figure 1 – Site location

Figure 2 - Shops within the project site taken from the northern boundary along Pāhoe Road

Figure 3 – Surfboard rentals within the project site looking west towards the ocean

Figure 4 – Food truck looking west towards the ocean

Figure 5 – Dining area and food truck within the project site looking north

Figure 6 – Stores and Astro-Turf lawn within the project site looking west towards the ocean

The landowner contemplates only minimal alterations to the Foodland parcel – i.e., closure of the driveway from Kamehameha Highway in favor access through a common egress / ingress point on Kamehameha Highway for all four parcels, limited parking lot improvements, and related landscaping improvements. None of the Sullivan Entities or Foodland Super Market, Limited is involved in the subject project as it relates to the three Hanapohaku LLC parcels; and none of the Sullivan Entities or Foodland Super Market, Limited holds any interest in Hanapohaku LLC. Except as expressly otherwise stated, the "project" refers only to development of the three Hanapohaku LLC parcels.

The vegetation present on all four lots was surveyed in 2004 and then again in 2017 (Char 2004; Guinther and Burr, 2017). Alien and ornamental plant species dominate vegetation on the sites. No plants proposed for, or listed as either threatened or endangered have been recorded on the site (Char 2004; Guinther and Burr, 2017). During the course of the most recent survey of the properties Guinther and Burr recorded 135 species, seven of which are considered indigenous species and one, (*Carex wahuensis*) is a common and widespread endemic species (Guinther and Burr, 2017).

Methods

The avian phylogenetic order and nomenclature used in this report follows the *AOU Check-List of North American Birds* (American Ornithologists' Union, 1998), and the 42nd through the 58th supplements to the Check-List (American Ornithologists' Union, 2000; Banks et al., 2002, 2003, 2004, 2005, 2006, 2007, 2008; Chesser *et al*., 2009, 2010, 2011, 2012, 2013, 2014, 2015, 2016, 2017). Mammal scientific names follow (Wilson and Reeder, 2005)). Place names follow (Pukui et al., 1976).

Avian Survey Methods

Three avian point count stations were sited roughly equidistant from each other within the project site. A single six-minute avian point count was made at each count station. Field observations were made with the aid of Leica 8 X 42 binoculars and by listening for vocalizations. The point counts were conducted between 8:30 am and 10:00 am, the period when birds are most active and vocal. Time not spent counting the point count stations was used to search the rest of the site for species and habitats not detected during the point counts. Additionally, the coastline located west of the side, and separated from the site by Kamehameha Highway and the Shark Cove beach access road and parking lot was searched for the presence of previous seabird nesting activity.

Mammalian Survey Methods

With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or *ʻōpeʻapeʻa* as it is known locally, all terrestrial mammals currently found on the Island of Oʻahu are alien species, and most are ubiquitous. The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all terrestrial vertebrate mammalian species detected within the project area during the time spent on the site.

Results

Avian Point Count Survey

A total of 144 individual birds of 15 species, representing 13 separate families, were recorded during point counts. One of the species detected, Pacific Golden-Plover (*Pluvialis fulva*), is a native indigenous migratory shorebird species (Table 1). The remaining 14 species recorded are all alien or domesticated feral species (Table 1).

Avian diversity and densities were in keeping with the location and the alien dominated vegetation and the commercial use of the site. Three introduced species, Common Myna (*Acridotheres tristis*), feral chickens (*Gallus* sp?) and Japanese White-eye (*Zosterops japonicus)* accounted for 54 percent of the total number of birds recorded. Common Myna

was the most commonly tallied species, which accounted for 28 percent of the birds recorded during point counts.

Table 1 – Avian Species Detected During Point Counts Pūpūkea Rural Community Center - 2018

Common Name	*Scientific Name*	*ST*	*RA*
	PHASIANIDAE - Pheasants & Partridges		
	Phasianinae - Pheasants & Allies		
Domestic Chicken	*Gallus* sp.	D	5.67
	COLUMBIFORMES		
	COLUMBIDAE - Pigeons & Doves		
Spotted Dove	*Streptopelia chinensis*	A	3.00
Zebra Dove	*Geopelia striata*	A	3.67
	CHARADRIIFORMES		
	CHARADRIIDAE - Lapwings & Plovers		
	Charadriinae - Plovers		
Pacific Golden-Plover	*Pluvialis fulva*	IM	0.33
	PELECANIFORMES		
	ARDEIDAE - Herons, Bitterns & Allies		
Cattle Egret	*Bubulcus ibis*	A	1.00
	PASSERIFORMES		
	PYCNONOTIDAE - Bulbuls		
Red-vented Bulbul	*Pycnonotus cafer*	A	2.33
Red-whiskered Bulbul	*Pycnonotus jocosus*	A	0.33
	CETTIIDAE - Cettia Warblers & Allies		
Japanese Bush-Warbler	*Horomis diphone*	A	0.33
	ZOSTEROPIDAE - White-eyes		
Japanese White-eye	Zosterops japonicus	A	4.00
	TURDIDAE - Thrushes		
White-rumped Shama	Copsychus malabaricus	A	0.33
	STURNIDAE - Starlings		
Common Myna	*Acridotheres tristis*	A	10.67
	FRINGILLIDAE - Fringilline and Carduline Finches & Allies		
	Carduelinae - Carduline Finches and Hawaiian Honeycreepers		
House Finch	*Haemorhous mexicanus*	A	2.33
	PASSERIDAE - Old World Sparrows		
House Sparrow	*Passer domesticus*	A	0.67
	CARDINALIDAE - Cardinals & Allies		
Northern Cardinal	*Cardinalis cardinalis*	A	1.00

Table 1. Continued

Common Name	*Scientific Name*	ST	RA
	THRAUPIDAE - Tanagers		
	Thraupinae - Core Tanagers		
Red-crested Cardinal	*Paroaria coronata*	A	2.33

Key to table 1

ST Status

D Domesticated – domestic free ranging feral species

A Alien – Introduced to the Hawaiian Islands by humans

IM Indigenous Migrant – Native but not restricted to the Hawaiian Islands, migratory, non-breeder in Hawaii

RA Relative Abundance - Number of birds detected divided by the number of point counts (~3)

Seabird Search

No seabirds or previous nesting activity was detected on the study site or along the shoreline banks fronting Shark Cove Beach Park, the public restrooms and showers and Fire Station #11-Sunset Beach all of which are located to the west of Kamehameha Highway overlooking the ocean.

Mammalian Survey

Two terrestrial mammalian species were detected on the site during the course of this survey. Two cats (*Felis catus*) were seen within the site close to the food trucks. A small Indian mongoose (*Herpestes auropunctatus*) was seen around the collection of dumpsters on the south end of the food truck area.

No mammalian species currently proposed for listing or listed under either the federal or State of Hawaiʻi endangered species statutes was recorded on this site (DLNR 1998; USFWS, 2016).

Discussion

Avian Resources

The findings of the avian survey are consistent with the current habitat present within the survey area, and with two other faunal surveys conducted on the property one in 2004 (Bruner, 2004) and the second in September, 2017 (Gunther and Burr, 2017). They recorded 12 species and nine species respectively. During the course of this most recent survey 15 avian species were recorded (Table 1).

As previously mentioned all but one of the 15 species recorded during this survey, and all of the species recorded by Brunner and Guinther and Burr over a span of 14 years were alien species (Bruner, 2004; Guinther and Burr, 2017) (Table 1).

The lone native species recorded during this survey was one Pacific Golden-Plover, a native, indigenous migratory shorebird species which nest in the high Arctic during the late spring and summer months, returning to Hawaiʻi and the Tropical Pacific to spend the fall and winter months each year. They usually leave Hawaiʻi for their trip back to the Arctic in late April or the very early part of May. They are widely distributed in the Hawaiian Islands during the winter month.

Although no seabirds were detected during the course of this survey, several seabird species could potentially overfly the site on occasion. The primary cause of mortality in resident seabirds is thought to be predation by alien mammalian species at the nesting colonies (USFWS 1983; Simons and Hodges 1998; Ainley et al., 2001). Collision with man-made structures is considered to be the second most significant cause of mortality in locally nesting seabird species in Hawaiʻi. Nocturnally flying seabirds, especially fledglings on their way to sea in the summer and fall, can become disoriented by exterior lighting. When disoriented, seabirds often collide with manmade structures, and if they are not killed outright, the dazed or injured birds are easy targets of opportunity for feral mammals (Hadley 1961; Telfer 1979; Sincock 1981; Reed et al., 1985; Telfer et al., 1987; Cooper and Day, 1998; Podolsky et al. 1998; Ainley et al., 2001; Hue et al., 2001; Day et al 2003).

There is no suitable nesting habitat within or adjacent to the four parcels surveys. Additionally, a survey of the coastline in the general project area did not record any seabirds, or more importantly evidence of previous seabird nesting in the area. The coastline between Shark Cove, south past the Sunset Beach Fire Station is an extremely busy area, with vey little suitable ground cover for seabird nesting and no evidence that it has been used for burrowing in the recent past (Figure 7 and 8).

Figure 7 – Beach cliff looking towards project site from the beach towards the beach bathrooms

Figure 7 – Beach tide pool and coastline South of Shark Cove and west of the project site

The Oʻahu population of White-Tern (*Gygis alba*) is listed as an endangered species by the State of Hawaii; it is not listed under federal statute. This ephemeral species was not recorded during this survey, nor was it expected. The current resident population of White Terns on O'ahu is found on the leeward side of the Island concentrated in the Waikiki area.

Mammalian Resources

The findings of the mammalian survey are consistent with the current habitat present on the site and the current land usage of the area surveyed. Although, no rodents were recorded during the course of this survey, it is likely that one or more of the other four established alien Muridae found on Oʻahu - European house mouse (*Mus musculus domesticus*), roof rat (*Rattus rattus*), brown rat (*Rattus norvegicus*), and black rat (*Rattus exulans hawaiiensis*) - use various resources found within the general project area on a seasonal basis. These human commensal species are drawn to areas of human habitation and activity. All of these introduced rodents are deleterious to native ecosystems and the native faunal species dependent on them.

No Hawaiian hoary bats were detected during the course of this survey. This endemic species is a solitary, widely dispersed, foliage roosting bat, which is cryptic by nature. The difficulty in studying this species has resulted in a dearth of information regarding much of its life history and ecology. It has only been within the last 15 years that the presumption that the bat was likely extirpated on Molokaʻi and Oʻahu, and breeding was limited to the islands of Kauaʻi and Hawaiʻi has been found to be incorrect (Mitchel et al. 2005, Amlin and Siddiqi, 2015). Research by USGS biologists and others has now shown that the bat occurs and breeds on all of the main Hawaiian Islands with the exception of Niʻihau and Kahoʻolawe. The species roosts primarily in woody vegetation exceeding 15 feet in height (Bonaccorso et al. 2015). It is within the realm of possibility that this species may forage above the project site on a seasonal basis but given the level of disturbance and activity with the site and the highly manicured and heavily pruned and shaped trees present on the site, it is in my opinion, unlikely that a bat would roost within the project site.

Potential Impacts to Protected Species

Seabirds

The principal potential impacts posed to protected seabirds that the construction and continued operation of the facilities are associated with the increased threat that birds will be downed after becoming disoriented by lights associated with the proposed action during the nesting season. The two main areas that outdoor lighting could pose a threat to these nocturnally flying seabirds is if; a) during construction, if it is deemed expedient, or necessary to conduct night-time construction activities – currently no nighttime construction is anticipated; b) following build-out, the potential use of streetlights or other exterior lighting during the seabird fledging season which runs from September 15 through December 15th.

Hawaiian hoary bat

The principal potential impact that construction poses to bats is during the clearing and grubbing phase of the construction. The trimming or removal of foliage and/or trees within the construction areas may temporarily displace individual bats, which may use the vegetation as a roosting location. As bats use multiple roosts within their home territories, the potential disturbance resulting from the removal of the vegetation is likely to be minimal. During the pupping season, female carrying their pups may be less able to rapidly vacate a roost site while vegetation is cleared. Additionally, adult female bats sometimes leave their pups in the roost tree while they themselves forage, and very small pups may be unable to flee a tree that is being felled. Potential adverse effects from such disturbance can be avoided or minimized by not clearing woody vegetation taller than 4.6 meters (15-feet), between June 1 and September 15, the pupping season. As previously mentioned the highly pruned trees within the site are not typical of what one would expect this species to roost in.

Critical Habitat

There is no federally delineated Critical Habitat for any species on, or close to the proposed project site. Thus, modifications of habitat on the site will not result in impacts to federally designated Critical Habitat. There is no equivalent statute under state law.

Recommendations

- Schedule clearing and grubbing clearing of woody vegetation taller than 4.6 meters (15-feet), activities outside of the bat pupping season between June 1 and September 15.

- If streetlights or exterior facility lighting is installed in conjunction with the project, it is recommended that the lights be shielded to reduce the potential for interactions of nocturnally flying seabirds with external lights and man-made structures (Reed et al., 1985; Telfer et al., 1987).

Glossary

Alien – Introduced to Hawaiʻi by humans
Commensal – Animals that share humans' food and lodgings, such as rats and mice.
Diurnal – Daytime, an animal that hunts and feeds during daylight hours, the opposite of nocturnal
Domesticated – Feral species, not considered established in the wild on the Island of Oʻahu
Endangered – Listed and protected under the Endangered Species Act of 1973, as amended (ESA) as an endangered species
Endemic – Native to the Hawaiian Islands and unique to Hawaiʻi
Indigenous – Native to the Hawaiian Islands, but also found elsewhere naturally
Nocturnal – Night-time, after dark
ʻŌpeʻapeʻa – Endemic endangered Hawaiian hoary bat (Lasiurus cinereus semotus)
Pelagic – An animal that spends its life at sea – in this case seabirds that only return to land to nest and rear their young
Makai – Towards the ocean
Phylogenetic – The evolutionary order that organisms are arranged by
Threatened – Listed and protected under the ESA as a threatened species

DLNR – Hawaiʻi State Department of Land & Natural Resources
ESA – Endangered Species Act of 1973, as amended
USFWS – United State Fish & Wildlife Service

Literature Cited

Ainley, D. G, R. Podolsky, L. Deforest, G. Spencer, and N. Nur. 2001. The Status and Population Trends of the Newell's Shearwater on Kaua'i: Insights from Modeling, *in*: Scott, J. M, S. Conant, and C. Van Riper III (editors) *Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna.* Studies in Avian Biology No. 22: Cooper's Ornithological Society, Allen Press, Lawrence, Kansas. (Pg. 108-123).

American Ornithologist's Union. 1998. *Check-list of North American Birds*. 7th edition. AOU. Washington D.C. 829pp.

_____. 2000. Forty-second supplement to the American Ornithologist's Union *Check-list of North American Birds*. The Auk 117:847-858.

Amlin, A., and A. Siddiqi, 2015. Endangered Species Recovery Committee Hawaiian Hoary Bat Guidance Document. State of Hawaiʻi Department of Land and Natural Resources Division of Forestry and Wildlife, December 2015.

Banks, R. C., C. Cicero, J. L. Dunn, A. W. Kratter, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz. 2002. Forty-third supplement to the American Ornithologist's Union *Check-list of North American Birds*. The Auk 119:897-906.

_____. 2003 Forty-fourth supplement to the American Ornithologist's Union *Check-list of North American Birds*. The Auk 120:923-931.

_____. 2004 Forty-fifth supplement to the American Ornithologist's Union *Check-list of North American Birds*. The Auk 121:985-995.

_____. 2005 Forty-sixth supplement to the American Ornithologist's Union *Check-list of North American Birds*. The Auk 122:1026-1031.

_____. 2006 Forty-seventh supplement to the American Ornithologist's Union *Check-list of North American Birds*. The Auk 123:926-936.

Banks, R. C., C. R. Terry Chesser, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz. 2007 Forty-eighth supplement to the American Ornithologist Union *Check-list of North American Birds*. The Auk 124:1109-1115.

Banks, R. C., C. R. Terry Chesser, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz, and K. Winker. 2008 Forty-ninth supplement to the American Ornithologist Union *Check-list of North American Birds*. The Auk 125:758-768.

Bonaccorso, F.J., C.M. Todd, A.C. Miles, and P.M. Gorresen. 2015. Foraging Range Movements of the Endangered Hawaiian Hoary Bat, Lasiurus cinereus semotus. Journal of Mammalogy 96(1):64-71.

Bruner, P. L. 2004. Avifaunal and feral mammal field survey of TMK 5-9-11:17 Pupukea, Oahu. Prp. for Belt Collins Hawaii Ltd. 6 pp.

Char, W. 2004. Untitled, letter report. Prep. for Belt Collins Hawaii Ltd. Char & Associates.

Chesser, R. T., R. C. Banks, F. K. Barker, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz, and K. Winker. 2009. Fiftieth supplement to the American Ornithologist Union *Check-list of North American Birds*. The Auk 126:1-10.

Chesser, R. T., R. C. Banks, F. K. Barker, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, and D. F. Stotz, and K. Winker. 2010. Fifty-first supplement to the American Ornithologist Union *Check-list of North American Birds*. The Auk, 127: 726-744.

_____.2011. Fifty-second supplement to the American Ornithologist Union *Check-list of North American Birds*. The Auk 128:600-613.

_____. 2012. Fifty-third supplement to the American Ornithologist Union *Check-list of North American Birds*. The Auk 129:573-588.

_____. 2013. Fifty-fourth supplement to the American Ornithologist Union *Check-list of North American Birds*. The Auk 130: 558:571.

Chesser, R. T., R. C. Banks, F. K. Barker, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, A. G. Navarro-Sigüenza, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, D. F. Stotz, and K. Winker. 2014. Fifty-fifth supplement to the American Ornithologist Union Check-list of North American Birds. The Auk, Ornithological Advances, 131: CSi-CSxv.

Chesser, R. T., R. C. Banks, K. J. Burns, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, A. G. Navarro-Sigüenza, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, D. F. Stotz, and K. Winker. 2015. Fifty-sixth supplement to the American Ornithologist Union Check-list of North American Birds. The Auk, Ornithological Advances, 132: 748-764.

Chesser, R. T., K. J. Burns, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, D. F. Stotz, and K. Winker. 2016. Fifty-seventh supplement to the American Ornithologist Union *Check-list of North American Birds*. The Auk, Ornithological Advances, 133: 544-560.

Chesser, R. T., K. J. Burns, C. Cicero, J. L. Dunn, A. W. Kratter, I. J. Lovette, P. C. Rasmussen, J. V. Remsen, Jr., J. D. Rising, D. F. Stotz, and K. Winker. 2017. Fifty-eighth supplement to the American Ornithologist Societys *Check-list of North American Birds*. The Auk, Ornithological Advances, 134: 751-773.

Cooper, B. A and R. H. Day. 1998. Summer Behavior and Mortality of Dark-rumped Petrels and Newells' Shearwaters at Power Lines on Kauai. Colonial Waterbirds, 21 (1): 11-19.

Day, R. H., B. Cooper, and T. C. Telfer. 2003. Decline of Townsend's (Newell's Shearwaters (*Puffinus auricularis newelli*) on Kauai, Hawaii. The The Auk 120: 669-679.

Department of Land and Natural Resources (DLNR). 1998. Indigenous Wildlife, Endangered And Threatened Wildlife And Plants, And Introduced Wild Birds. Department of Land and Natural Resources. State of Hawaii. Administrative Rule §13-134-1 through §13-134-10, dated March 02, 1998.

Guinther, E.B., and S. Burr. 2017. Natural resources assessment for improvements proposed for the Pūpūkea Rural Community Commercial Center, Island of Oʻahu. Prepared for: G70

Hadley, T. H. 1961. Shearwater calamity on Kauai. Elepaio 21:60.

Hue, D., C. Glidden, J. Lippert, L. Schnell, J. MacIvor and J. Meisler. 2001. Habitat Use and Limiting Factors in a Population of Hawaiian Dark-rumped Petrels on Mauna Loa, Hawaiʻi. , *in:* : Scott, J. M, S. Conant, and C. Van Riper III (editors) *Evolution, Ecology, Conservation, and Management of Hawaiian Birds: A Vanishing Avifauna*. Studies in Avian Biology No. 22. Cooper's Ornithological Society, Allen Press, Lawrence, Kansas (Pg. 234-242).

Mitchell, C., C. Ogura, D.W. Meadows, A. Kane, L. Strommer, S. Fretz, D. Leonard, and A. McClung. October 2005. Hawaii's Comprehensive Wildlife Conservation Strategy. Department of Land and Natural Resources. Honolulu, Hawaiʻi. 722 pp.

Podolsky, R., D.G. Ainley, G. Spencer, L. de Forest, and N. Nur. 1998. "Mortality of Newell's Shearwaters Caused by Collisions with Urban Structures on Kauaʻi". Colonial Waterbirds 21:20-34.

Pukui , M. K., S. H. Elbert, and E. T. Mookini 1976. *Place Names of Hawaii*. University of Hawaii Press. Honolulu, Hawaiʻi. 289 pp.

Reed, J. R., J. L Sincock, and J. P. Hailman 1985. Light Attraction in Endangered Procellariform Birds: Reduction by Shielding Upward Radiation. The Auk 102: 377-383.

Simons, T. R., and C. N. Hodges. 1998. Dark-rumped Petrel (*Pterodroma phaeopygia*). *In* A. Poole and F. Gill (editors). The Birds of North America, No. 345. The Academy of Natural Sciences, Philadelphia, PA. and the American Ornithologists Union, Washington, D.C.

Sincock, J. L. 1981. Saving the Newell ʻ s Shearwater. Pages 76-78 in Proceedings of the Hawaii Forestry and Wildllife Conference, 2-4 October 1980. Department of Land and Natural Resources, State of Hawaii, Honolulu.

Telfer, T. C. 1979. Successful Newell's Shearwater Salvage on Kauai. ʻElepaio 39:71

Telfer, T. C. , J. L. Sincock, G. V. Byrd, and J. R. Reed. 1987. Attraction of Hawaiian seabirds to lights: Conservation efforts and effects of moon phase. Wildlife Society Bulletin 15:406-413.

U.S. Fish & Wildlife Service (USFWS) 1983. Hawaiian Dark-Rumped Petrel & Newell's Manx Shearwater Recovery Plan. USFWS, Portland, Oregon. February 1983.

_____. 2016. USFWS Endangered Species. Available online at https://www.fws.gov/endangered/; Last visited on July 30, 2017.

Wilson, D.E., and D. M. Reeder, (Editors), 2005. *Mammal species of the world: a taxonomic and geographic reference.* 3rd edition. 2 vols. John Hopkins University Press. Baltimore, Maryland. 2142 pp.

APPENDIX B

ASSESSMENT OF POTENTIAL IMPACTS ON WATER RESOURCES OF THE PROPOSED PUPUKEA RURAL COMMUNITY COMMERCIAL CENTER

Assessment of Potential Impacts on Water Resources of the Proposed Pupukea Rural Community Commercial Center

Prepared for:

Group 70 International, Inc.
925 Bethel Street – 5th Floor
Honolulu, Hawaii 96813

Prepared by:

Tom Nance Water Resource Engineering
560 N. Nimitz Hwy. - Suite 213
Honolulu, Hawaii 96817

September 2017

Table of Contents

	Page
Introduction	1
Proposed Infrastructure Improvement Relevant to the Assessment of the Project's Potential Impact on Water Resources	1
Water Supply	1
Drainage	1
Wastewater Collection, Treatment, and Disposal	4
Groundwater Occurrence in the Vicinity of the Project Site	
Overview of Groundwater Occurrence	5
Regulatory Environment	5
Sustainable Yield of the Kawailoa Aquifer	5
Issued Water Use Permits	8
Actual Water Use	8
Characterization of the Groundwater Beneath the Project Site	12
Stratigraphy Encountered at the Monitor Well Sites	12
Salinity Profiles of the Water Columns in the B-1 and B-7 Monitor Wells	12
Water Level Response to Ocean Tides	12
Water Quality Samples from the B-1 and B-7 Monitor Wells	19
Shoreline Discharge of Groundwater	19
Surface Water Occurrence in the Vicinity of the Project Site	
Overview of Surface Water Occurrence	25
Existing Stormwater Runoff Infrastructure	25
Potential Impacts on Water Resources of the Pupukea RCCC Project	
Overview	25
Additional Consumption of Drinking Water from the BWS System	27
Implementation of the Drainage System	27
Wastewater Collection, Treatment, and Disposal	27
Foodland Onsite Wastewater Treatment System	29
Existing Wastewater Treatment System on TMK 5-9-011:068	29
System Proposed for the Pupukea RCCC Project	29
Net Increase of Treated Wastewater to the Groundwater and Marine Environment	29
References	
Appendix: Logs of the B-1 and B-7 Boreholes by Geolabs, Inc.	

List of Figures

No.	Title	Page
1	Four Contiguous Parcels that Comprise the Pupukea Rural Community Commercial Center Project Site	2
2	Pupukea Rural Community Center – Concept Plan	3
3	Wells in the Near Vicinity of the Pupukea Project Site	6
4	Pumpage of Waialua Sugar Company's P4 Well Battery from February 1986 through the Last Reported Pumpage in August 1995	10
5	Total Pumpage of Wells in the Kawailoa Aquifer Compared to Permitted Use for the Period from January 2010 through November 2016	11
6	Comparison of Pumpage by BWS' Waialee Wells and Total Pumpage in the Aquifer	13
7	Locations of the B-1 and B-7 Monitor Wells on the Pupukea Project Site	14

List of Figures
(continued)

No.	Title	Page
8	Salinity Profiles through the Water Columns of the B-1 and B-7 Monitor Wells on January 6, 2017	15
9	Sequence of Salinity Profiles through the Water Column of the B-1 Monitor Well on January 6, April 11, and May 24, 2017	16
10	Sequence of Salinity Profiles through the Water Column of the B-7 Monitor Well on January 6, April 11, and May 24, 2017	17
11	Recorded Water Levels in the B-1 and B-7 Monitor Wells in January 2017 in Comparison to the Predicted Tide at Waialua Bay	18
12	Locations of the Five Offshore Transects Sampled by Marine Research Consultants on May 17, 2017	21
13	Mixing Line Analysis of Total Nitrogen in Shoreline Samples at Transects 1 to 5 (Refer to Figure 12 for Transect Locations)	23
14	Mixing Line Analysis of Total Phosphorus in Shoreline Samples at Transects 1 to 5 (Refer to Figure 12 for Transect Locations)	24
15	Locations of Concentrated Stormwater Discharge in the Near Vicinity of the Project Site	26
16	Residences in the Mauka-to-Makai Corridor Upgradient of the Pupukea RCCC Project	31

List of Tables

No.	Title	Page
1	Summary of Wells in the Near Vicinity of the Project Site	7
2	Current Water Use Permits in the Kawailoa Aquifer System	9
3	Water Quality Results of Grab Samples from the B-1 and B-7 Monitor Wells on April 11 and May 24, 2017	20
4	Water Quality Results from the Five Shoreline Transects Shown on Figure 10 as Sampled by Marine Research Consultants on May 17, 2017	22
5	Comparative Runoff Volumes for Pre- and Post-Development of the Three Hanapohaku Parcels for 24-Hour Storms of Varying Recurrence Intervals	28

INTRODUCTION

This report presents an assessment of the potential impact on water resources of the proposed Pupukea Rural Community Commercial Center (Pupukea RCCC). Three contiguous parcels owned by Hanapohaku LLC (TMKs 5-9-011:068, 069, and 070) totaling 2.72 acres would be redeveloped along with a new connection to the adjacent Foodland parcel (TMK 5-9-011:016).

The location of the project site is shown on Figure 1. Its development plan is shown on Figure 2. The Pupukea RCCC would consist of approximately 30,000 square feet of building area, substantial parking, landscaping, and infrastructure to support the new facilities. Access off Kamehameha Highway to the Foodland parking lot would also be reconfigured.

PROPOSED INFRASTRUCTURE IMPROVEMENT RELEVANT TO THE ASSESSMENT OF THE PROJECT'S POTENTIAL IMPACT ON WATER RESOURCES

The August 2017 Preliminary Engineering Report by Group 70 International, Inc. provides detailed descriptions of the project's proposed infrastructure improvements. Those relevant to the assessment of the potential impact on water resources are described in the sections following.

Water Supply

Potable water to the area is supplied by the Honolulu Board of Water Supply (BWS) via a 16-inch main in Kamehameha Highway. Water service to the three Hanapohaku parcels is presently provided by a 1-inch meter to TMK 5-9-011:068. Present use has averaged about 2500 gallons per day (GPD). Based on BWS design guidelines of 3000 GPD/acre, post development water use on the 2.72 acres of the Hanapohaku parcels may average about 8160 GPD. BWS has indicated that its system can accommodate this increase in use (Group 70, 2017).

Water supply from BWS for Foodland is supplied by a 1½-inch meter. Its use has averaged about 2200 GPD. This use may increase by 15 to 20 percent to irrigate the proposed new landscaping at the makai end of its parking lot.

Drainage

At present, there are no drainage improvements on the three Hanapohaku parcels. Stormwater runoff sheet flows off the property to the shallow and generally unimproved gutter on the mauka side of Kamehameha Highway, flows south in the gutter to a grated field inlet, and from there is conveyed in a 24-inch pipe beneath the highway to a discharge point close to the shoreline.

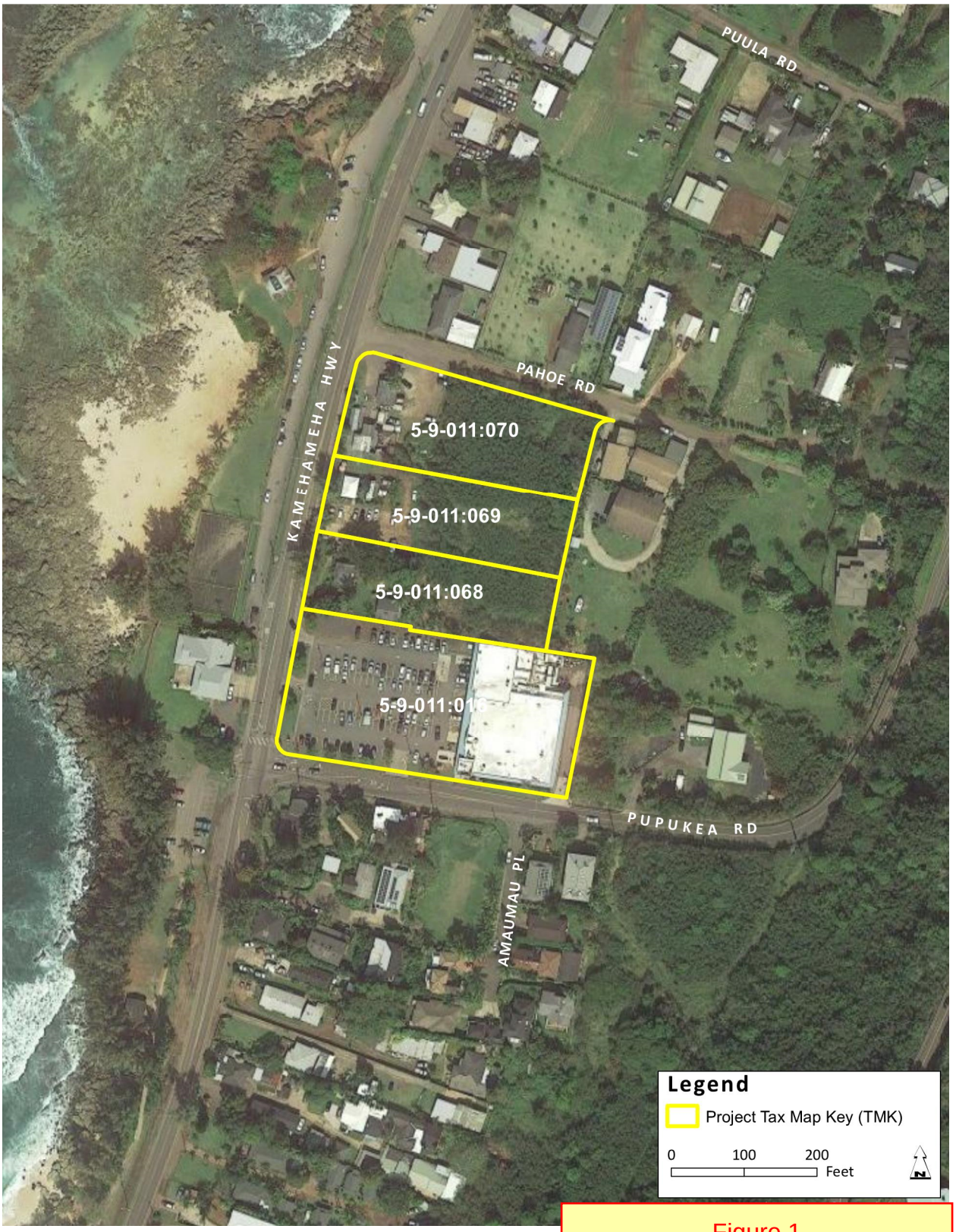
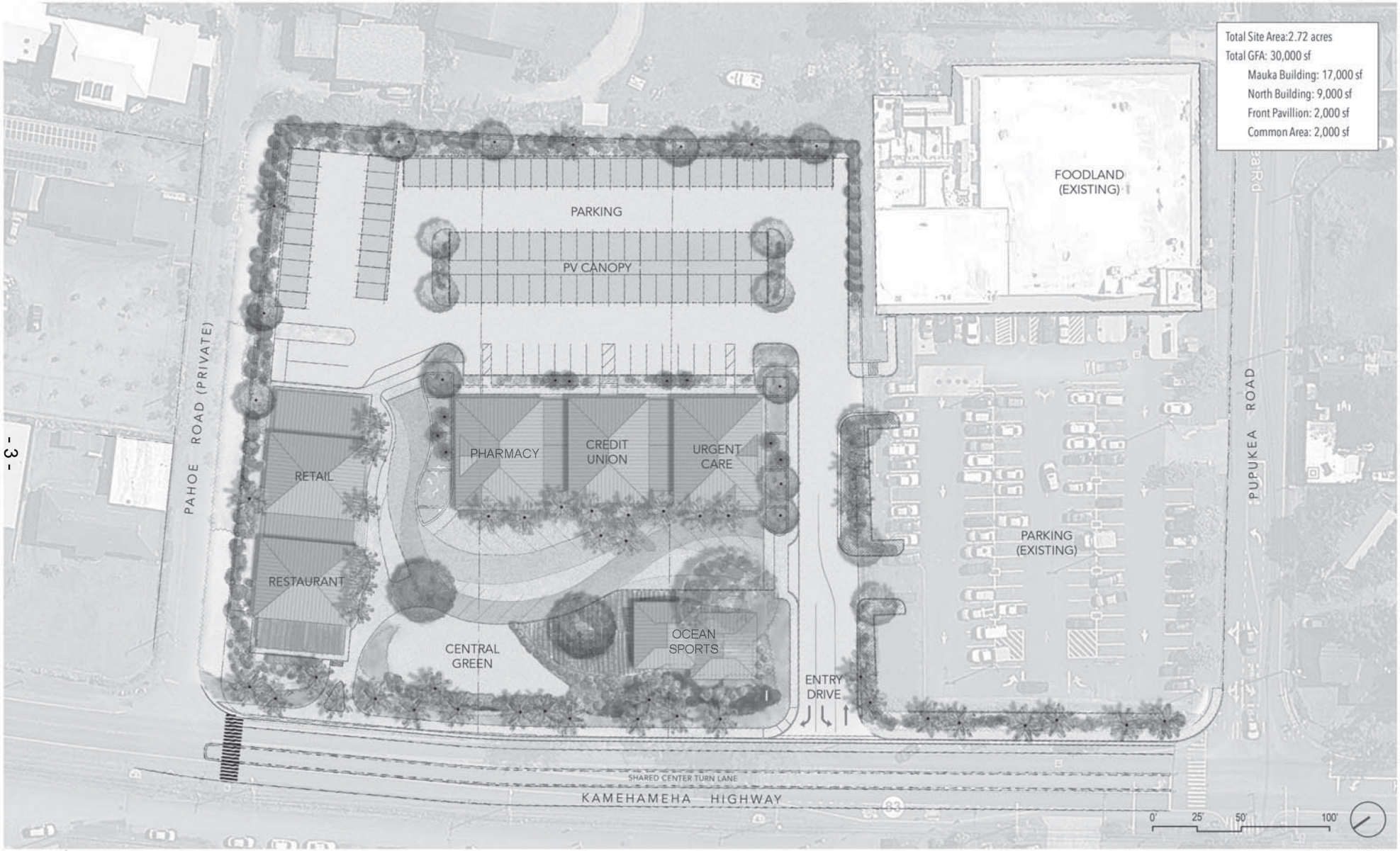


Figure 1

Four Contiguous Parcels that Comprise the Pupukea Rural Community Commercial Center Project Site



G70

Figure 2

Pupukea Rural Community Commercial Center Concept Plan

P:\2016\216041-01 Pupukea Commercial\Graphics\pupukea_commercial_site_plan_11x17.pdf

Group 70's Preliminary Engineering Report describes the drainage improvements that would be implemented on the three Hanapohaku parcels. Development of the project, due to the increase in impervious surfaces, will increase the surface runoff. That runoff would be collected in gutters, drain inlets, trench drains, and from paved areas. The collected runoff would be transported through flow and volume based BMP's into a subsurface detention basin at the makai end of the project fronting Kamehameha Highway. Based on the City and County Drainage Standards of January 2000, a detention basin volume of 16,146 cubic feet is required so that the peak discharge from the three Hanapohaku parcels during a 1-hour, 10-year storm rainfall is not increased as a result of the project's development. The calculated required retention volume is 16,146 cubic feet (Group 70, 2017). A detention basin volume of 26,600 cubic feet, much larger than the drainage standards require, is proposed.

Rainfall-runoff from the Foodland parcel leaves the property in two directions. Runoff from most of the parking lot sheet flows down its two access driveways to the mauka gutter of Kamehameha Highway. The balance of runoff from the site is directed into the drainage system at the bottom end of Pupukea Road and is discharged to the shoreline just south of the beach park. The pattern of stormwater runoff will remain the same, except that landscaping along the parking lot's Kamehameha Highway frontage will replace the two driveways. Runoff will flow into this landscaping. BMPs and stormwater detention will be provided such that runoff will be less than present conditions and its quality will be improved by the detention of bed load and suspended solids.

Wastewater Collection, Treatment, and Disposal

At present, there is no existing municipal wastewater collection system serving the area. As such, an onsite wastewater treatment and disposal system will need to be constructed. A description and basis of design of the system is presented in Enviniti LLC (August 2017) and summarized in Group 70 (2017). It would be comprised of an aerobic treatment unit (ATU) with the treated effluent disposed of in six absorption beds located in the parking lot. The combined 27,000 square feet of bed area to be installed would provide 100 percent back up capacity.

Several other points should be noted about the project's proposed wastewater system. First, the design wastewater flowrate in the Enviniti report and repeated in the Group 70 Preliminary Engineering Report is 10,533 GPD, about 30 percent greater than the 8160 GPD of projected water use. This wastewater production rate is used as the basis for sizing infrastructure but is greater than what is likely to actually occur. For the assessment herein, the actual wastewater production is estimated to be the water use of 8160 GPD less the amount of landscape irrigation. That irrigation will be about 2000 GPD per acres on 0.12 acre of grass and 1200 GPD per acre on 0.50 acres of shrubs and trees.

These irrigation rates amount to 840 GPD, meaning the remaining 7320 GPD of water use would become wastewater.

Second, there are two recently installed ATU on TMK 5-9-011:068 with disposal in absorption beds. Its design is described in Laulea Engineering LLC (April 2016). The ATU and absorption beds will be completely removed in the development of the Pupukea RCCC.

Third, Foodland parcel has its own ATU system and absorption beds located in its parking lot. These are described in J^3 Engineering LLC (August 2011). No changes to this system are envisioned for the Pupukea RCCC project.

GROUNDWATER OCCURRENCE IN THE VICINITY OF THE PROJECT SITE

Overview of Groundwater Occurrence

Knowledge of the groundwater occurrence in the vicinity of the project site comes primarily from the wells shown on Figure 3 and listed in Table 1. The groundwater occurs as a thin basal lens for at least 1.5 miles inland from the coastline. Water levels are on the order of two feet above mean sea level for up to 2000 feet inland, rising to about 3.7 feet above sea level 6500 to 7000 feet from the shoreline. Groundwater within several thousand feet from the shoreline is typically slightly brackish.

Regulatory Environment

The State Commission on Water Resource Management (CWRM) regulates well construction and groundwater use. The project site is within the CWRM-delineated Kawailoa Aquifer System. Its area is bounded by the Anahulu River on the south and the ridgeline of the Koolau mountain on the north. Its inland limit is what is thought to be the makai end of the Wahiawa high level aquifer. The aquifer's delineated area is 37.7 square miles and spans the 9-mile coastal segment from Waialua Bay to Kawela Bay.

The CWRM regulates groundwater use of the Kawailoa Aquifer in two ways: establishment of the aquifer's sustainable yield; and the issuance of water use permits. Both of these are described in the sections below.

<u>Sustainable Yield of the Kawailoa Aquifer</u>. In the State's first Water Resources Protection Plan (Yuen, 1990), the Kawailoa Aquifer's sustainable yield was set at 29 million gallons per day (MGD). This was based on a relatively coarse calculation of rainfall-recharge directly on the aquifer itself and that 44

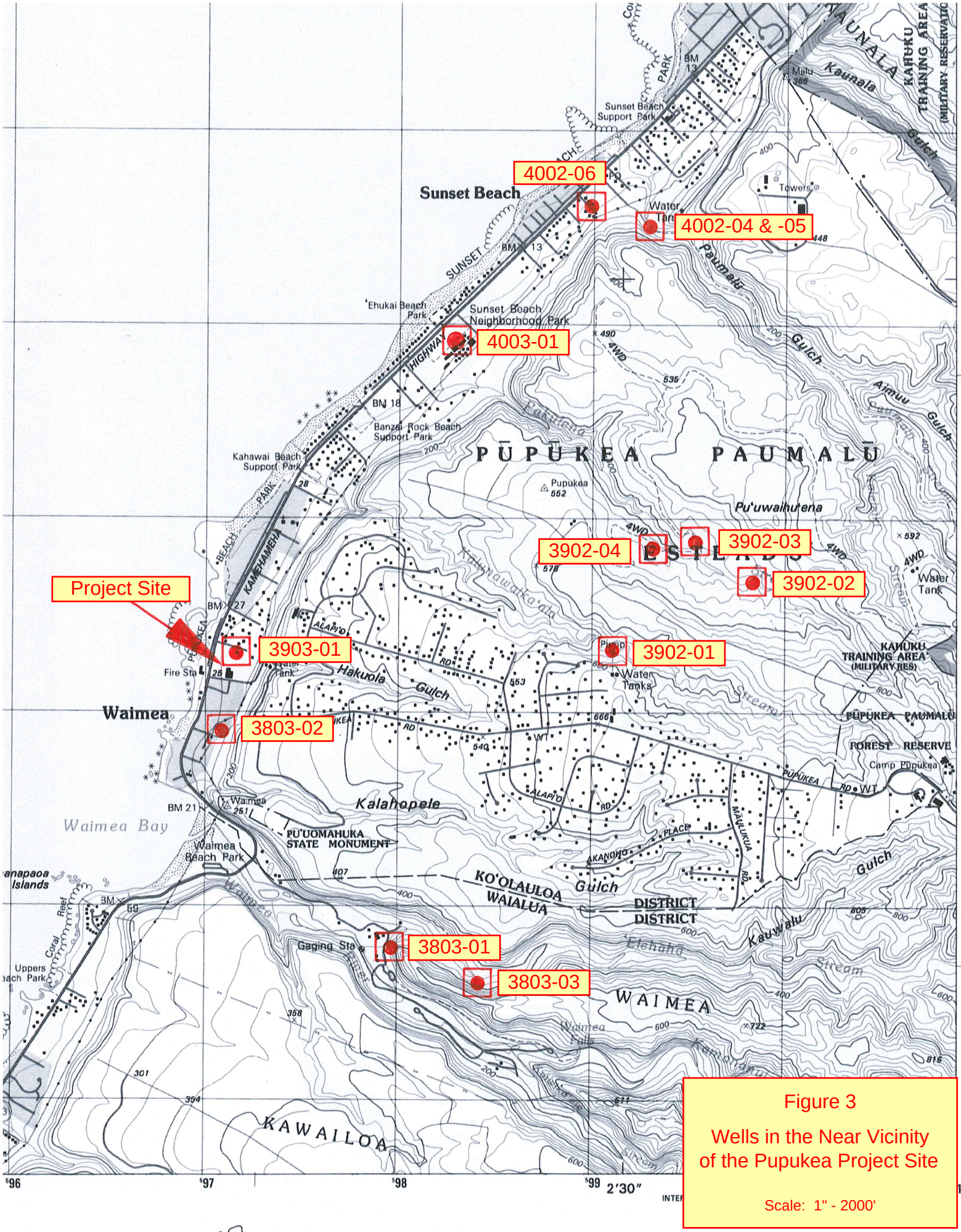


Figure 3

Wells in the Near Vicinity of the Pupukea Project Site

Scale: 1" - 2000'

Table 1. Summary of Wells in the Near Vicinity of the Project Site

Well		Year Drilled	Casing Diameter (Inches)	Ground Elevation (Feet MSL)	Total Depth (Feet)	Elevation at Bottom (Feet MSL)	Water Level (Feet MSL)	Pumped Water Chlorides (MG/L)
State Number	Name							
3803-01	Waimea Falls 1	1946	99	42	46	-4	10 (?)	167
3803-02	Waimea	1949	6	36	105	-69	1.8	1,230
3803-03	Waimea Falls 2	1993	12	171	235	-64	4.0	210
3902-01	Wallace	1946	12	499	554	-55	2.8	225 to 285
3902-02	Pupukea	1956	1	511	560	-49	- -	- -
3902-03	GC-1	1988	12	420	454	-34	3.8	255
3902-04	GC-2	1989	12	466	500	-34	3.7	336
3903-01	Beach Park	1956	8	50	57	-50	2.1	375 to 635
4002-04	Sunset Beach	1948	7	66	129	-59	2.7	66
4002-05	Sunset Beach	1949	10	70	140	-70	2.5	72
4002-06	Sunset	1955	8	32	109	-77	2.1	1,220
4003-01	Sunset Beach	1941	6	46	64	18	2.6	204

percent of this recharge was available as the sustainable yield. The 44 percent was an application of the Robust Analytical Model (RAM) developed by John Mink. The aquifer's recharge did not include subsurface from the upgradient Wahiawa high level aquifer, an amount which is considered to be significant.

In the first update of the WRPP (Wilson Okamoto, 2008), 29 to 31 MGD was listed as the potential range of the sustainable yield but 29 MGD remained as the adopted amount. The aquifer's recharge of 67.39 MGD computed in Shade and Nichols, 1996, was apparently not considered for the 2008 WRPP update.

A draft of the second update of the WRPP is expected to be out for public review and comment in late 2017. For the Kawailoa Aquifer, the recommendation is to reduce the aquifer's sustainable yield from 29 to 22 MGD based primarily on the recharge calculation in Engott et al, 2015, considered to be the most detailed and accurate calculation available, plus an allowance of "spillover" from the upgradient Wahiawa high level aquifer. The recommended reduction has not yet been adopted.

Issued Water Use Permits. The Kawailoa Aquifer is a CWRM-designated Groundwater Management Area. For this designation, a Water Use Permit (WUP) is required to use a well. When the WUPs for the aquifer were first issued in 1980, just two permits were issued, one for Waialua Sugar's Pump 4 well battery in the amount of 5.530 MGD and the other for Meadow Gold's dug shaft (Well No. 3704-01) in the amount of 0.043 MGD. With the closing of Waialua Sugar, present WUP's for the aquifer total 1.841 MGD (Table 2). This includes the 0.043 MGD for the Meadow Gold Shaft, now named Paniolo Ranch on Table 2.

Actual Water Use

Historically when Waialua Sugar Company was still active, most of the aquifer's pumpage was from the plantation's Pump 4 well battery which consisted of 23 closely grouped wells located three miles south of the Waimea River. As shown on Figure 4 for its last decade of use (1984 through 1995), monthly pumpage of the well battery reached 10 MGD in some months and its 12-month moving average (12-MAV) was as high as 5.7 MGD.

Since the closure of Waialua Sugar Company, pumpage from wells in the Kawailoa Aquifer has been substantially less. The total permitted use of all active wells is just 1.841 MGD, amounting to 8.4 percent of the aquifer's proposed reduced sustainable yield. Actual pumpage has been far less than the authorized use. Over the period from January 10, 2010 through November 2016 shown on Figure 5, reported pumpage averaged 0.434 MGD. This amounts to 24 percent of the permitted use and 2.0

Report Parameters

WUP Type: Water Use Permit, Administrative Modification, Reservation, Transfer, CWRM Decision and Orders, Court Orders, Other

Island of Oahu

Aquifer System Ground Water Management Area: 30403 Kawailoa

Sustainable Yield (mgd): 29

Wup No	Approved	Permittee	Well No	Well Name	WUP (mgd)
00056	09/11/1981	Royal Paniolo Ranch	3-3704-001	Paniolo Ranch	0.430
00173	02/19/1992	Attractions Hawaii	3-3803-001	Waimea Falls 1	0.200
			3-3803-003	Waimea Falls 2	
00179	11/18/1992	c/o Glenn Nakamura (Takemitsu Nakamura Tr EST)	3-4002-009	Sunset-Nakamura	0.001
00323	01/26/1994	Honolulu Board of Water Supply, BWS	3-4101-007	Waialee I	0.339
00324	01/26/1994	Honolulu Board of Water Supply, BWS	3-4101-008	Waialee II	0.411
00528	10/26/2000	UH DEPT OF ANIMAL SCIENCE	3-4101-010	Waialee UH	0.026
00812	11/13/2007	Sean Ginella	3-4100-006	Kawela Mauka	0.102
00861	11/18/1992	Patricia L. Clark	3-4002-006	Sunset-Henry F	0.005
00881	08/25/2010	Sean Ginella	3-3901-001	Paumalu	0.300
00955	09/19/2012	Ted Nakamura	3-3605-030	Thurston 2011	0.024
01015	06/17/2016	Justin & Cynthia Smith	3-3605-029	Kawailoa Mauka	0.003
Summary for Kawailoa (12 detail records)				**Total:**	1.841
				SY Available:	27.159

Table 2

Current Water Use Permits in the Kawailoa Aquifer System

Figure 4. Pumpage Of Waialua Sugar Company's Pump 4 Well Battery from February 1986 through the Last Reported Pumpage in August 1995

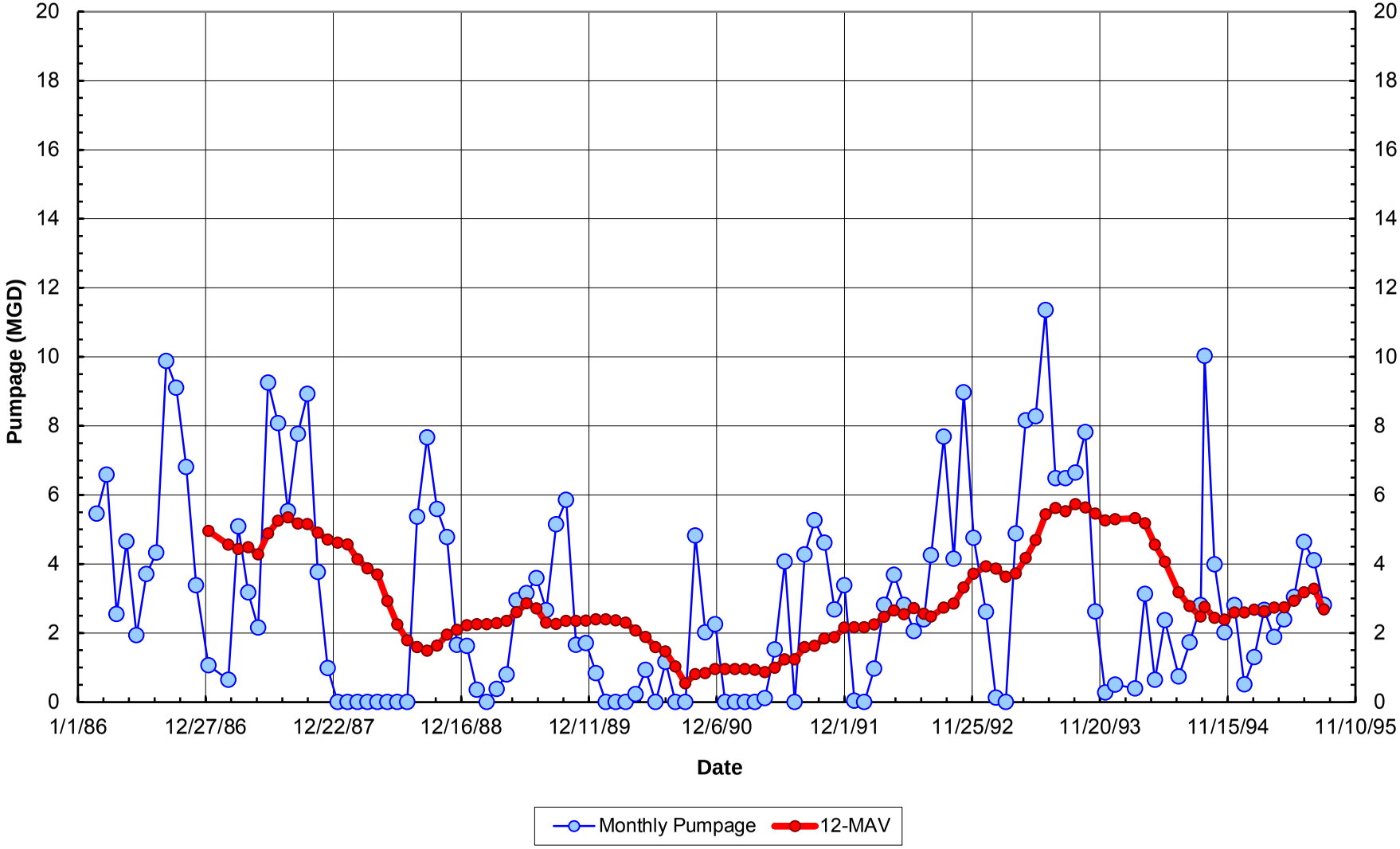
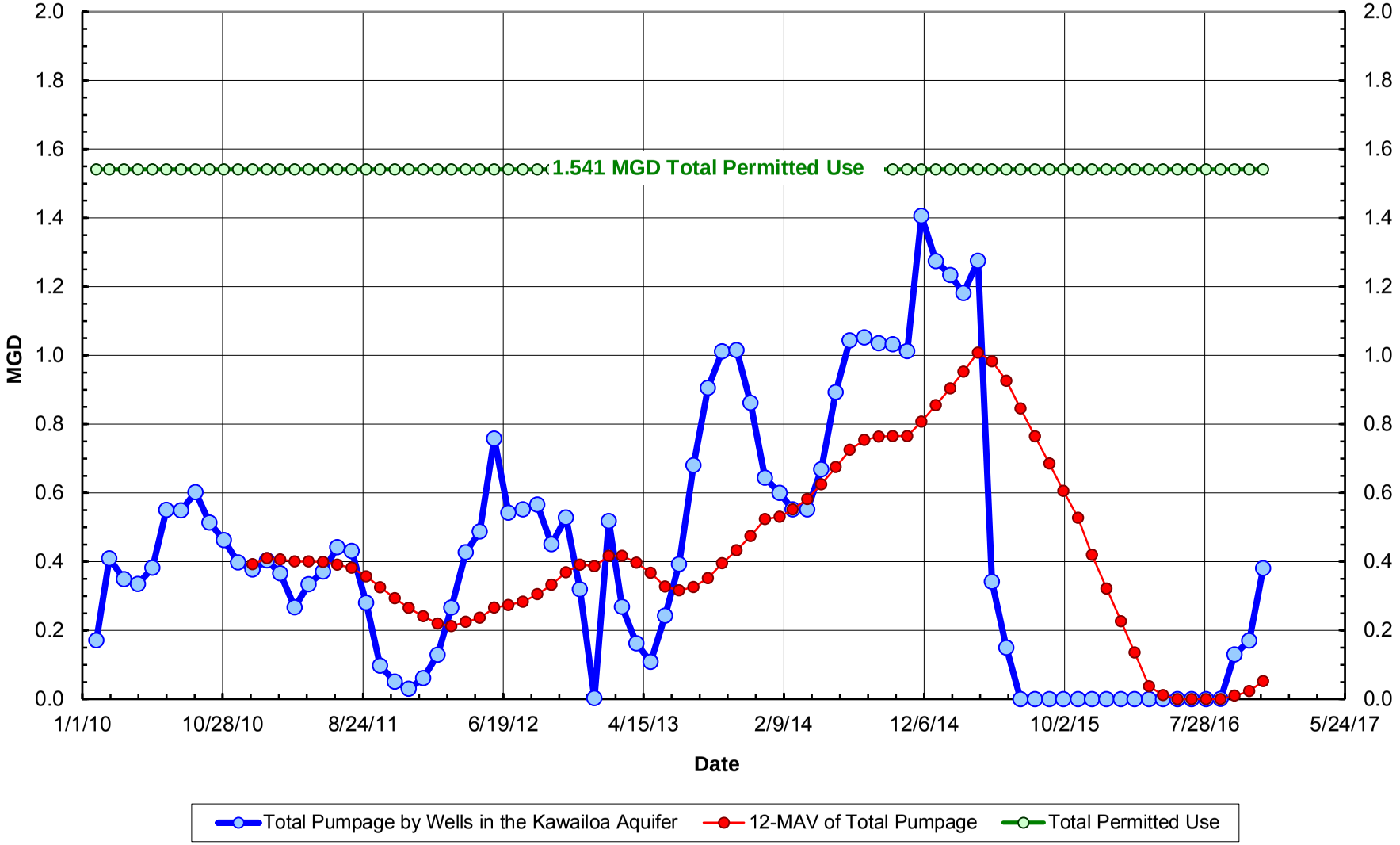


Figure 5. Total Pumpage of Wells in the Kawailoa Aquifer Compared to Permitted Use for the Period from January 2010 through November 2016



percent of the Kawailoa Aquifer's 22 MGD proposed sustainable yield. Since June 2013, average pumpage dropped even further to 0.038 MGD. None of the ongoing pumpage is from any of the wells shown on Figure 1. Virtually all of the ongoing pumpage is by the two Board of Water Supply Waialee wells which are located within the Koolau rift zone at the northern end of the aquifer (Figure 6).

Characterization of the Groundwater Beneath the Project Site

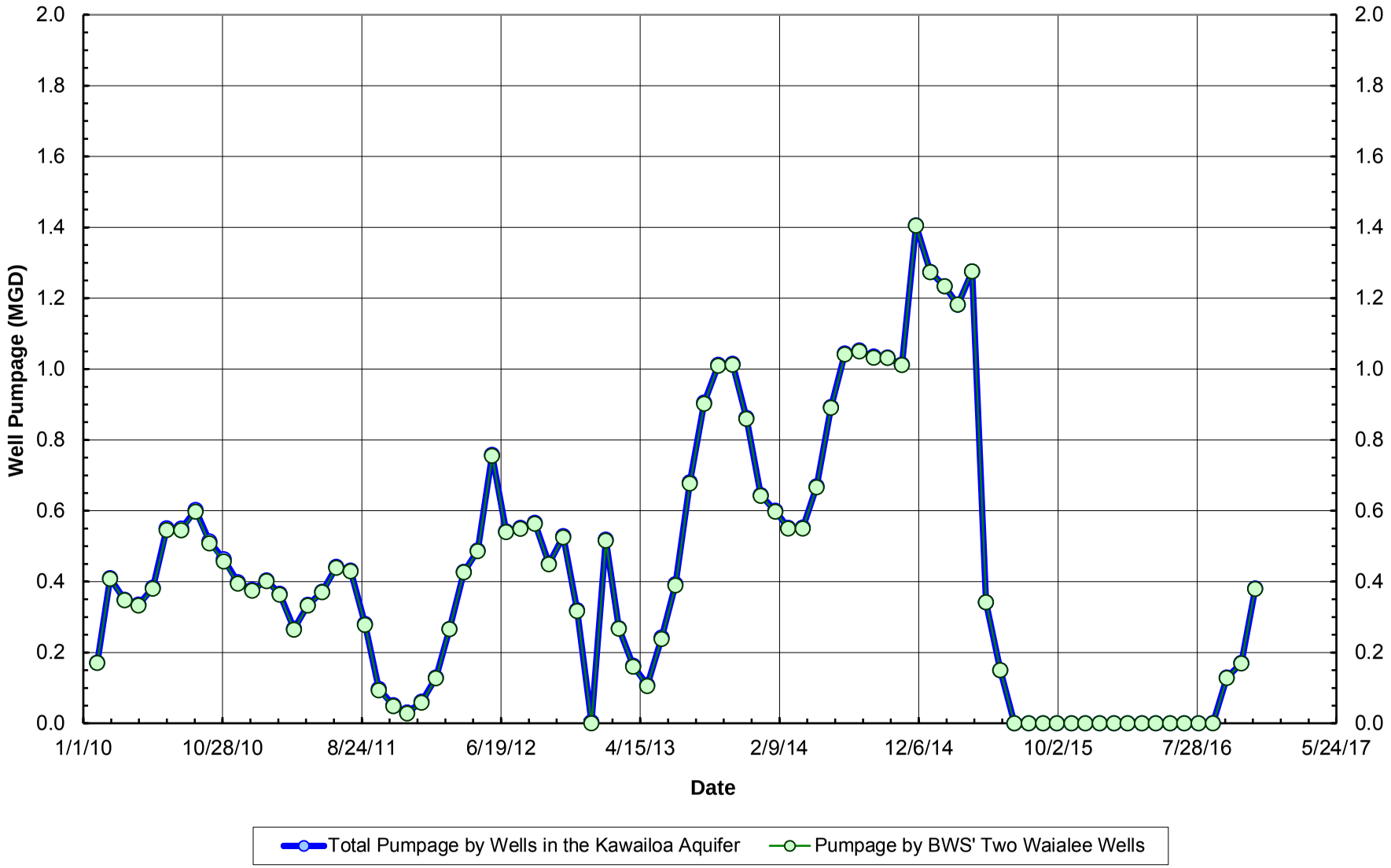
In order to characterize groundwater conditions directly beneath the project site, two 100-foot deep monitor wells were constructed. Their locations on the site are shown on Figure 7. The B-1 well is located toward the inland end of the site at about 45-foot elevation and the B-7 well is located closer to the makai end at about 37-foot elevation.

Stratigraphy Encountered at the Monitor Well Sites. Logs of the formations encountered at the two monitor well sites can be found in the Appendix to this report. At the B-1 site, the upper 18 feet is comprised of silty clay. Below the silty clay to the bottom of the well at 100-foot depth are layers of slightly weathered to unweathered basalt lava flows and clinker. At the B-7 site, silty clay comprises the upper 16 feet. Below that to a depth of 31 feet are coral and coralline sand and gravel. From 31-foot depth to the bottom of the well at 100-foot depth are slightly weathered to unweathered layers of basalt.

Salinity Profiles of the Water Columns in the B-1 and B-7 Monitor Wells. At both well sites, the groundwater resides entirely within the basalts. Figure 8 presents salinity profiles through the water columns of both wells made on January 6, 2017. For the first 30 feet into groundwater, the salinities at both sites are slightly brackish and essentially identical. Below that depth, the salinities increase with a very sharp salinity increase in B-7 at about 52 feet into groundwater. To confirm these initial results, two more sets of salinity profiles were made on April 11 and May 24, 2017. Results of all three sets of salinity profiles are shown on Figures 9 and 10. All three sets are very consistent with each other.

Water Level Response to the Ocean Tide. Water levels were recorded in both monitor wells over the January 3 to 6, 2017 period. These records are shown in comparison to the predicted tide for Waialua Bay on Figure 11. The groundwater levels are to an arbitrary (not sea level) datum, as neither well site has been surveyed to a sea level datum. However, their levels with respect to each other were surveyed and are correct. Two aspects of this water level record are notable. First, there is a strong tidal response at both well sites, with amplitudes on the order of one third to one half of the ocean's tidal amplitude. Permeability of the volcanics in which the groundwater resides is very high. Second, the water level in the B-1 well is consistently 0.115 ± 0.032 feet higher than in the B-7 well. This is equivalent to a gradient toward the shoreline of 0.00055 feet/feet (about 2.9 feet per mile). This relatively steep gradient is indicative of a rapid thinning of the basal lens as it nears its shoreline discharge.

Figure 6. Comparison of Pumpage by BWS' Waialee Wells and Total Pumpage in the Aquifer



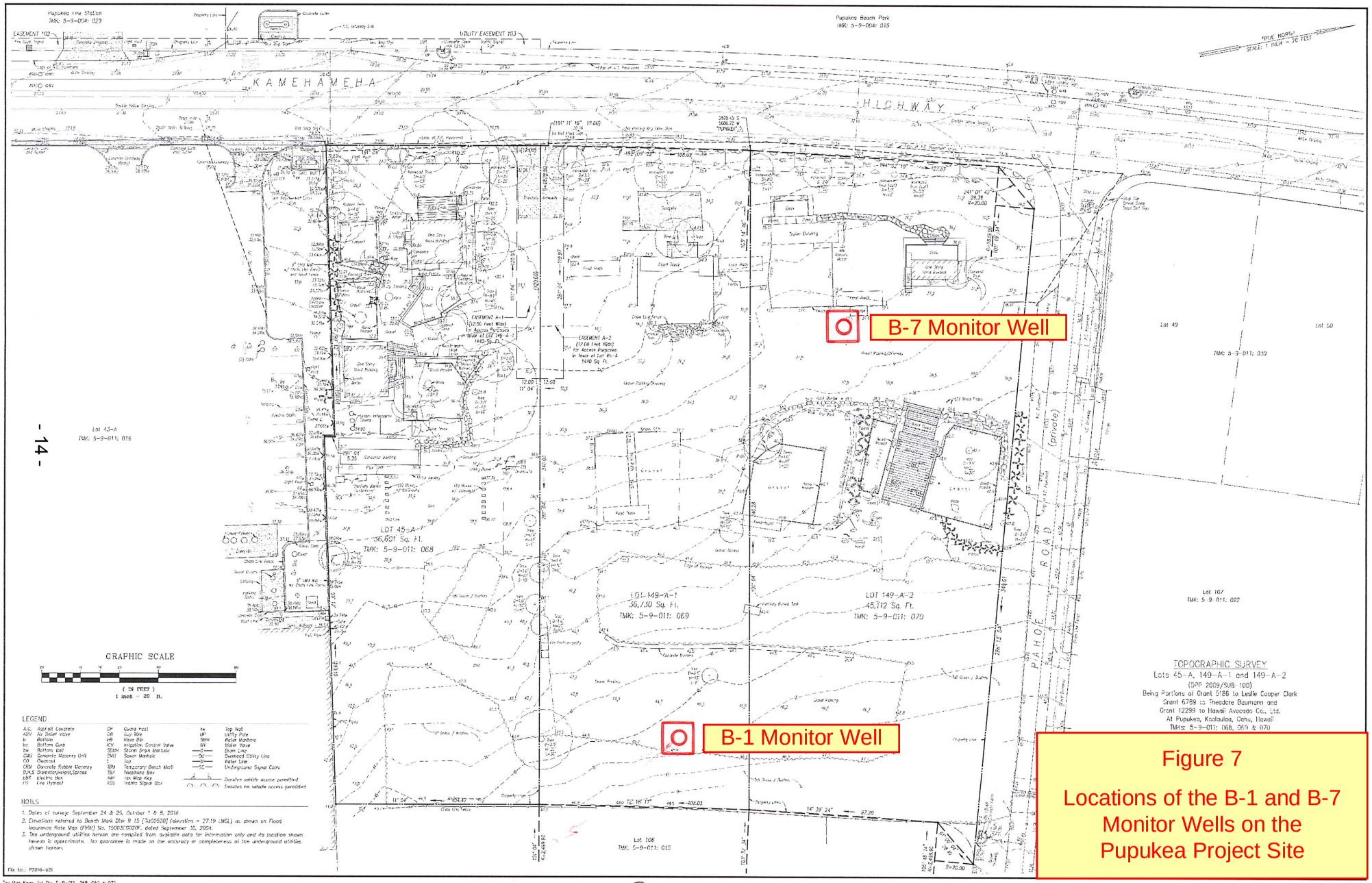


Figure 7

Locations of the B-1 and B-7 Monitor Wells on the Pupukea Project Site

Figure 8. Salinity Profiles through the Water Columns of the B-1 and B-7 Monitor Wells on January 6, 2017

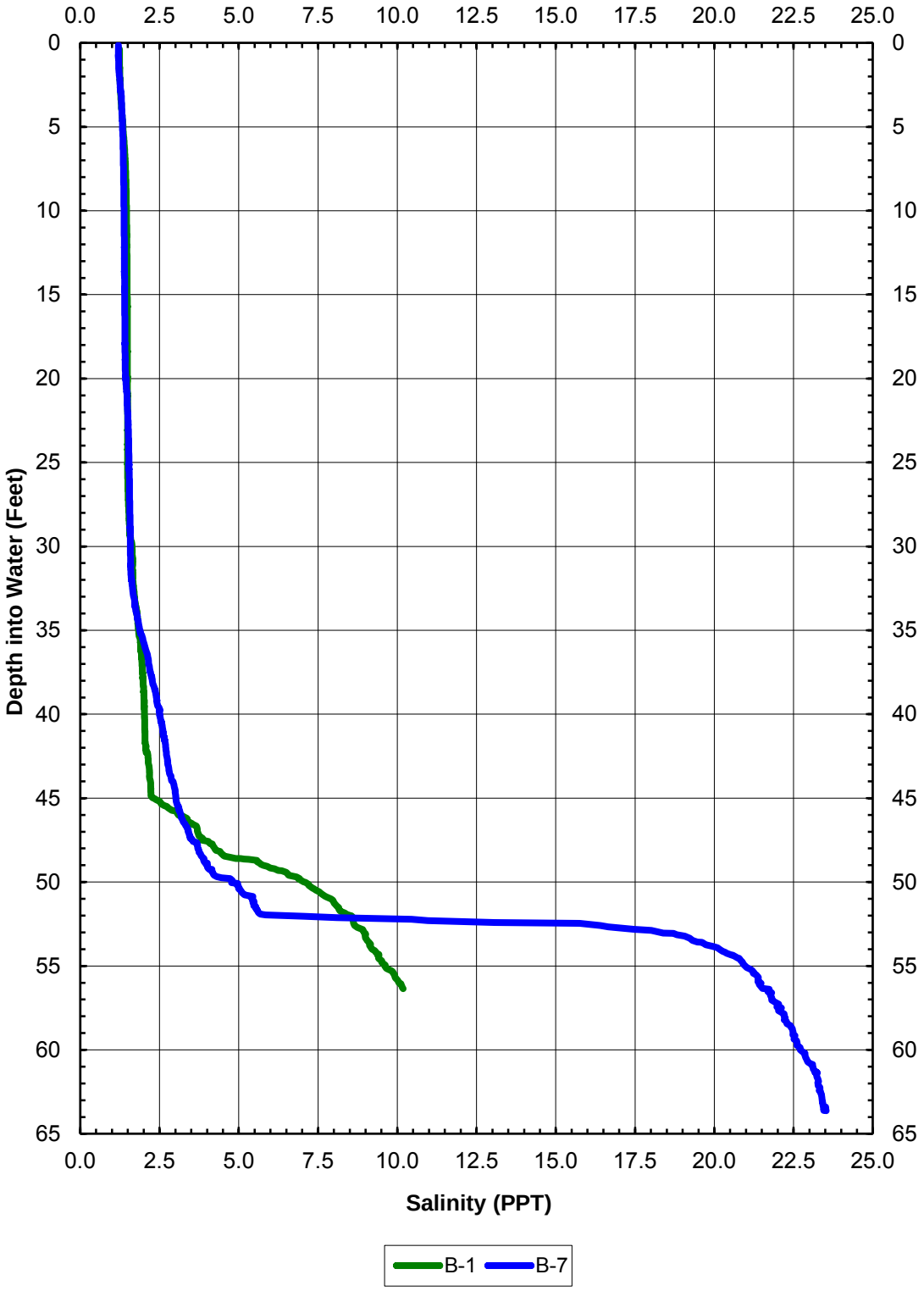


Figure 9
Sequence of Salintiy Profiles through the Water Column of the B-1 Monitor Well on Janaury 6, April 11, and May 24, 2017

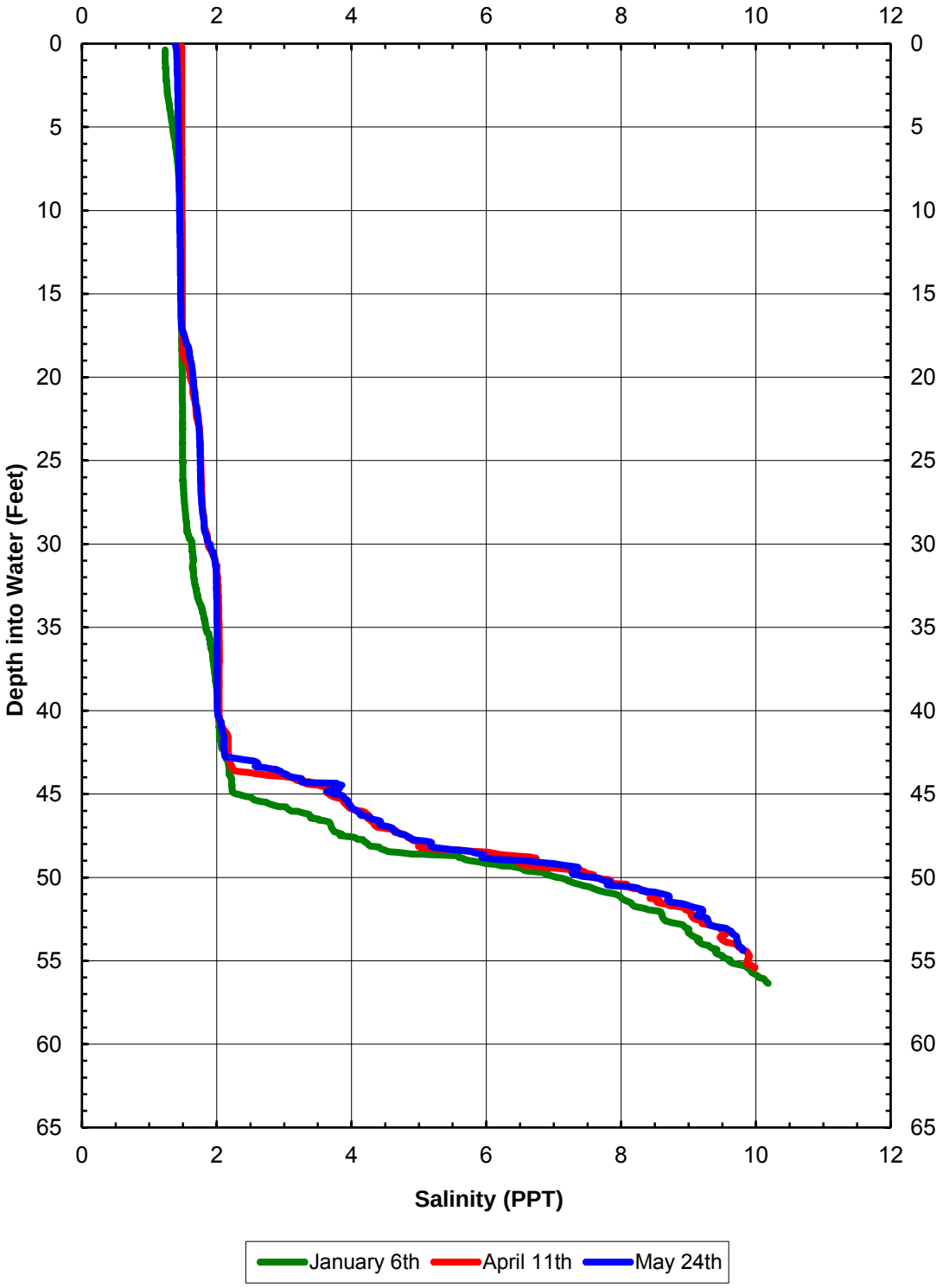


Figure 10
Sequence of Salintiy Profiles through the Water Column of the B-7 Monitor Well on Janaury 6, April 11, and May 24, 2017

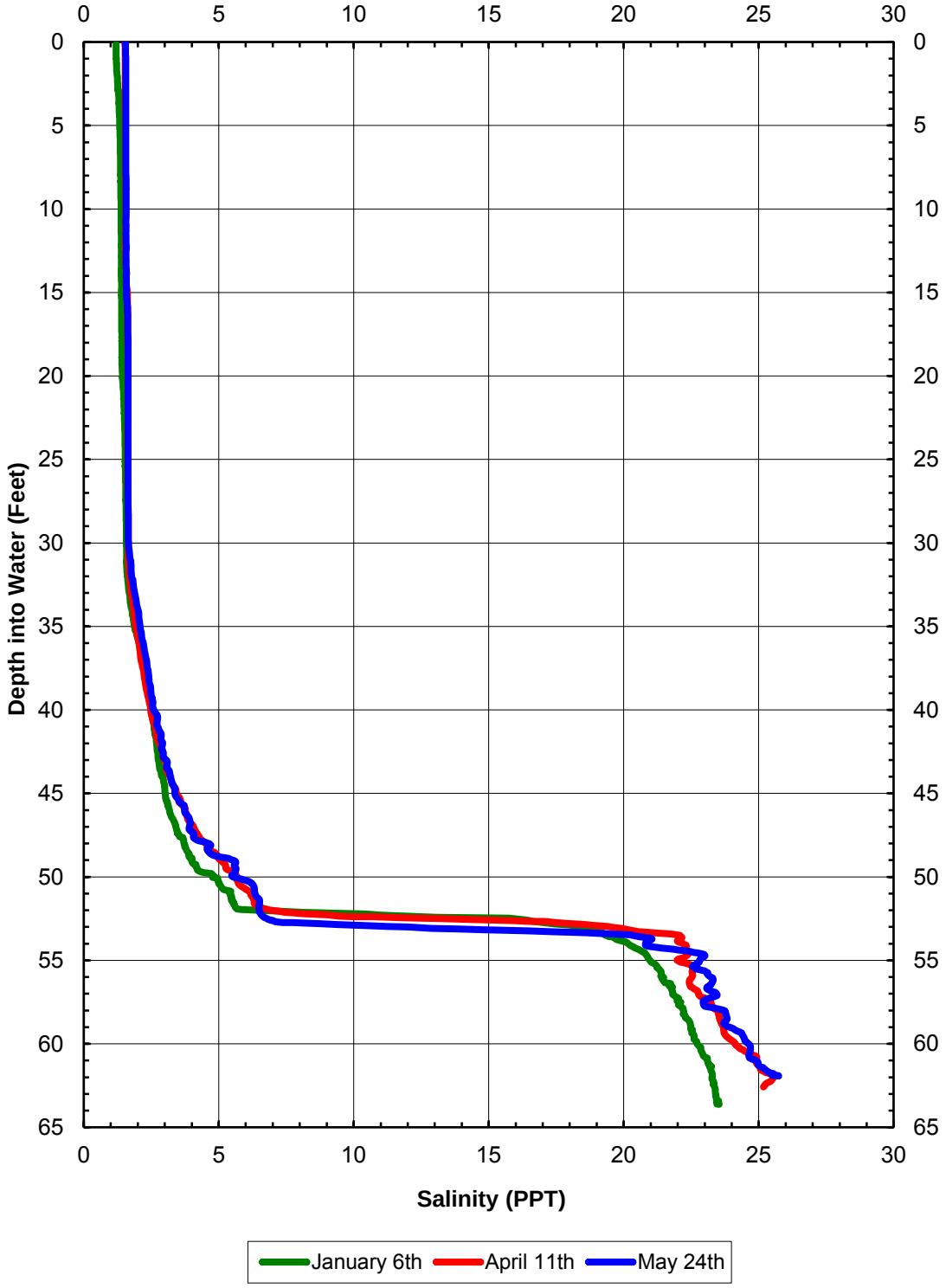
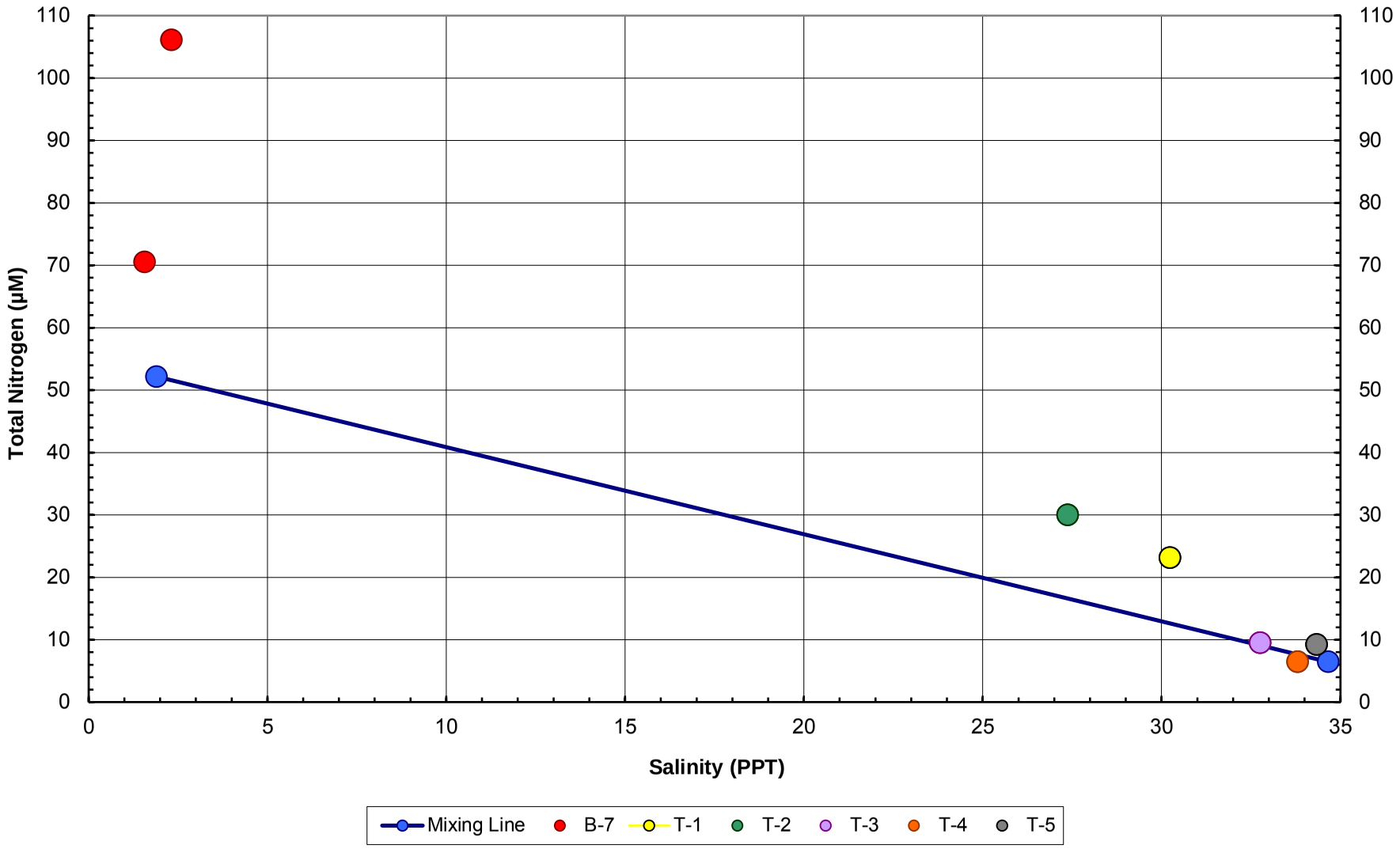


Figure 11. Mixing Line Analysis of Total Nitrogen in Shoreline Samples at Transects 1 to 5
(Refer to Figure 10 for Transect Locations)



Water Quality Samples from the B-1 and B-7 Monitor Wells. Samples were collected from three depths in each of the monitor wells on April 11, 2017 and again on May 24, 2017. All samples were analyzed for their nitrogen, phosphorus, silica, and salinity levels. These results are presented on Table 3. They provide a benchmark of existing groundwater quality against which potential changes of the proposed project can be compared. The somewhat higher nitrogen levels in the downgradient B-7 monitor well in comparison to the B-1 monitor well may reflect the input by the present activities on the site.

Shoreline Discharge of Groundwater. The basal groundwater described in the sections above discharges into and mixes with the ocean water along the shoreline. To depict this discharge and its mixing with the ocean water, water samples were collected by Marine Research Consultants (MRC) along the five transects shown on Figure 12. Along each transect, samples were taken at the shoreline and as far offshore as 1200 feet. The samples at the shoreline, based on lowest salinity and highest nutrient levels (top of Table 4) have the greatest amount of groundwater in them. The samples furthest offshore (bottom of Table 4) show virtually no amount of groundwater present and are considered to be representative of ocean water salinity and nutrient levels.

The best way to depict the changes in groundwater discharging at the shoreline as a result of activities on land is by a mixing line analysis. Based on available data in this case, such an analysis would depict the changes in groundwater chemistry between the B-1 monitor well and in the groundwater discharged along the shoreline. For both nitrogen and phosphorus, the mixing line is created by the average of the top samples in the B-1 monitor well (top of Table 3) and the median value of the offshore samples (bottom of Table 4) plotted against salinity. If there are no changes to the nutrient levels in the groundwater as it moves from the B-1 monitor well to discharges at the shoreline, the shoreline samples would plot directly on or near to the mixing line based on the assumption that the shoreline sample is simply a dilution of the groundwater in the B-1 monitor well and the ocean water as represented by the median of the offshore samples. If onshore activities are adding either nitrogen or phosphorus to the groundwater, the shoreline samples would plot above the mixing line. Conversely, if natural processes are removing either nitrogen or phosphorus, the shoreline samples would plot below the mixing line.

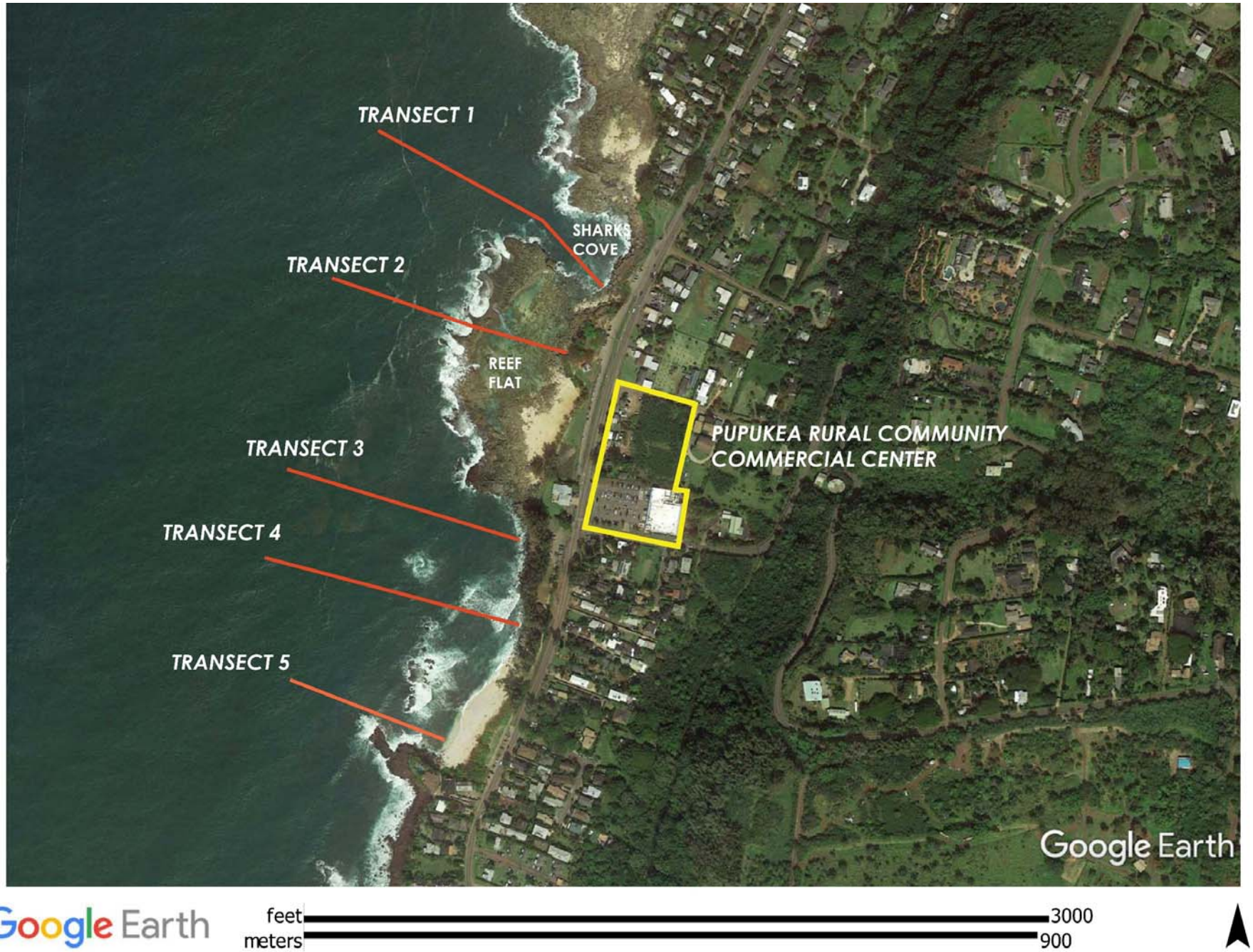
Figure 13 is a mixing line plot of total nitrogen. Clearly, results for the shoreline samples at Transects 1 and 2, as well as in the B-7 monitor well, show an addition of nitrogen in the movement of groundwater across the project site to the shoreline. The shoreline samples at Transects 3, 4, and 5, which are all located to the south of the project site, do not show such an enrichment.

Figure 14 is a similar mixing line plot for total phosphorus. All five of the shoreline samples plot on or below the mixing line. Those plotting significantly below the mixing line (Transects 1, 2, and 3)

Table 3. Water Quality Results of Grab Samples from the B-1 and B-7 Monitor Wells on April 11 and May 24, 2017

Monitor Well	Sample Date	Sample Depth	Forms of Nitrogen (μM)				Forms of Phosphorus (μM)			Silica (μM)	Salinity (PPT)
			NO_3	NH_4	TON	TN	PO_4	TOP	TP		
B-1	4/11/2017	Top	33.80	1.90	17.10	52.80	2.60	0.80	3.40	812	1.52
	5/24/2017	Top	36.80	6.80	7.90	51.50	3.20	0.85	4.05	809	2.29
	4/11/2017	Mid	33.90	3.50	13.10	50.50	3.60	0.30	3.90	830	1.62
	5/24/2017	Mid	31.80	2.50	3.60	37.90	3.20	0.45	3.65	794	2.59
	4/11/2017	Bottom	33.00	3.50	7.00	43.50	3.90	0.20	4.10	827	1.85
	5/24/2017	Bottom	31.50	1.70	5.40	38.60	3.20	1.75	4.95	783	2.55
B-7	4/11/2017	Top	45.80	2.60	22.10	70.50	2.60	0.60	3.20	842	1.57
	5/24/2017	Top	47.10	1.20	57.80	106.10	3.20	0.75	3.95	808	2.32
	4/11/2017	Mid	13.30	3.30	16.30	32.90	4.80	0.10	4.90	530	3.09
	5/24/2017	Mid	20.10	0.70	63.30	84.10	5.30	0.05	5.35	562	3.02
	4/11/2017	Bottom	4.30	5.20	26.30	35.80	4.50	0.10	4.60	455	21.23
	5/24/2017	Bottom	26.80	0.10	65.30	92.20	4.10	0.45	4.55	714	8.63

Notes:
1. Grab Samples taken by TNWRE with a thief sampler.
2. Water quality analysis by Marine Analytical Specialists.
3. Results in micro-molar (μM) can be converted to milligrams per liter (MG/L) by multiplying by the atomic weight and dividing by 1000.



Google Earth

feet 3000
meters 900

Figure 12

Locations of the Five Offshore Transects Sampled by Marine Research Consultants on May 17, 2017

Table 4. Water Quality Results from the Five Shoreline Transects Shown on Figure 10 as Sampled by Marine Research Consultants on May 17, 2017

Transect No.	Forms of Nitrogen (μM)				Forms of Phosphorus (μM)			Silica (μM)	Salinity (PPT)
	NO_3	NH_4	TON	TN	PO_4	TOP	TP		
1	8.11	1.32	13.68	23.11	0.14	0.32	0.46	83.9	30.24
2	16.29	2.57	11.13	29.99	0.41	0.24	0.65	157	27.38
3	1.44	0.25	7.79	9.48	0.18	0.18	0.36	53.6	32.76
4	0.60	0.39	5.48	6.47	0.16	0.19	0.35	25.9	33.81
5	0.32	0.29	8.61	9.22	0.13	0.20	0.33	11.0	34.34

Offshore Surface Samples

Transect No.	Forms of Nitrogen (μM)				Forms of Phosphorus (μM)			Silica (μM)	Salinity (PPT)
	NO_3	NH_4	TON	TN	PO_4	TOP	TP		
1	0.55	0.53	7.36	8.44	0.14	0.19	0.33	13.9	34.59
2	0.28	0.33	7.56	8.17	0.12	0.18	0.30	5.55	34.67
3	0.10	0.43	5.87	6.40	0.12	0.23	0.35	8.00	34.67
4	BDL	0.24	5.26	5.50	0.10	0.23	0.33	3.69	34.74
5	0.09	0.53	5.81	6.43	0.13	0.23	0.36	5.67	34.68
Median	0.10	0.43	5.87	6.43	0.12	0.23	0.33	5.67	34.67

Notes:
1. Samples taken by Marine Research Consultants on May 17, 2107.
2. Water quality analysis by Marine Analytical Specialists.
3. Results in micro-molar (μM) can be converted to milligrams per liter (MG/L) by multiplying by the atomic weight and dividing by 1000.

Figure 13. Mixing Line Analysis of Total Nitrogen in Shoreline Samples at Transects 1 to 5
(Refer to Figure 12 for Transect Locations)

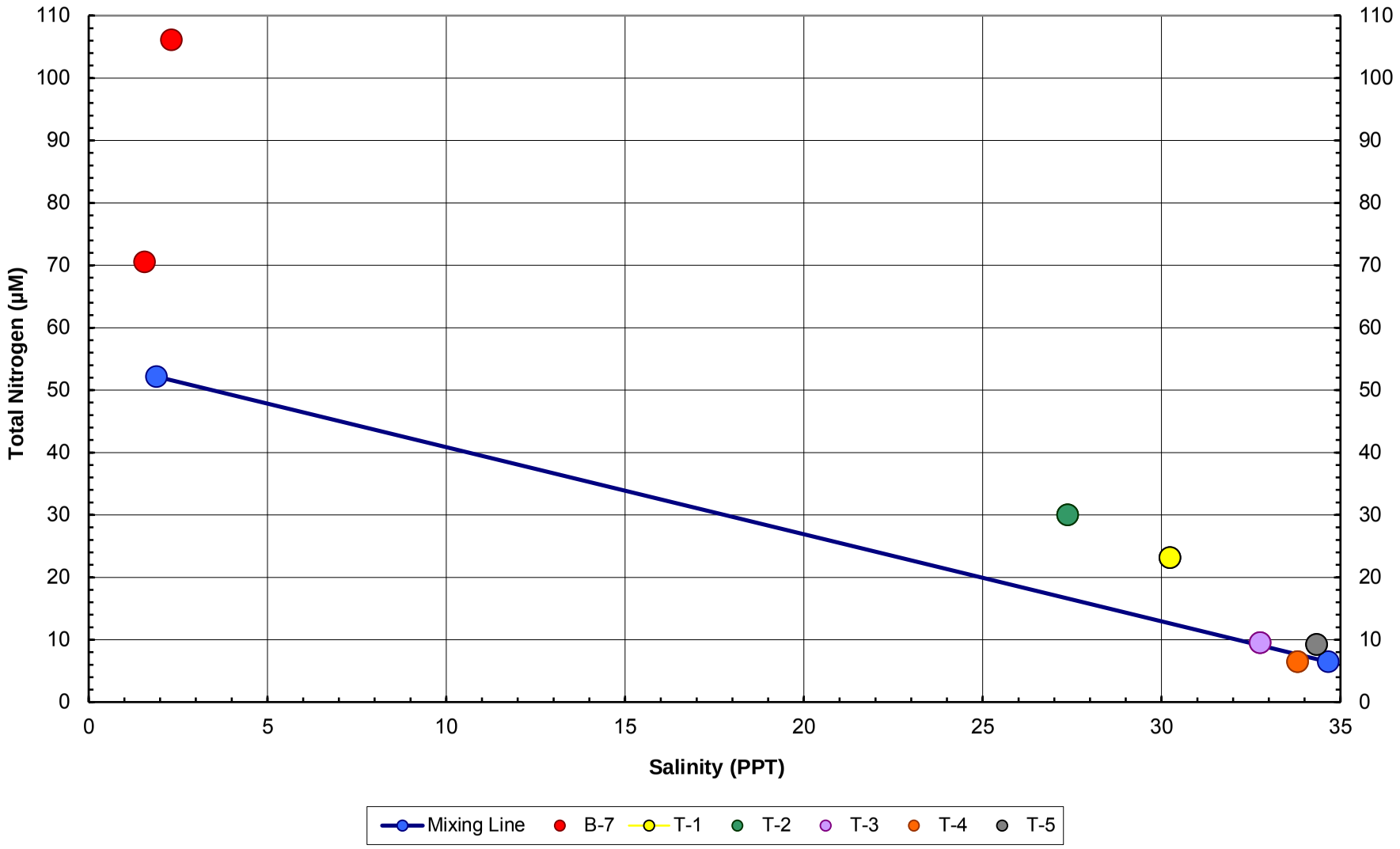
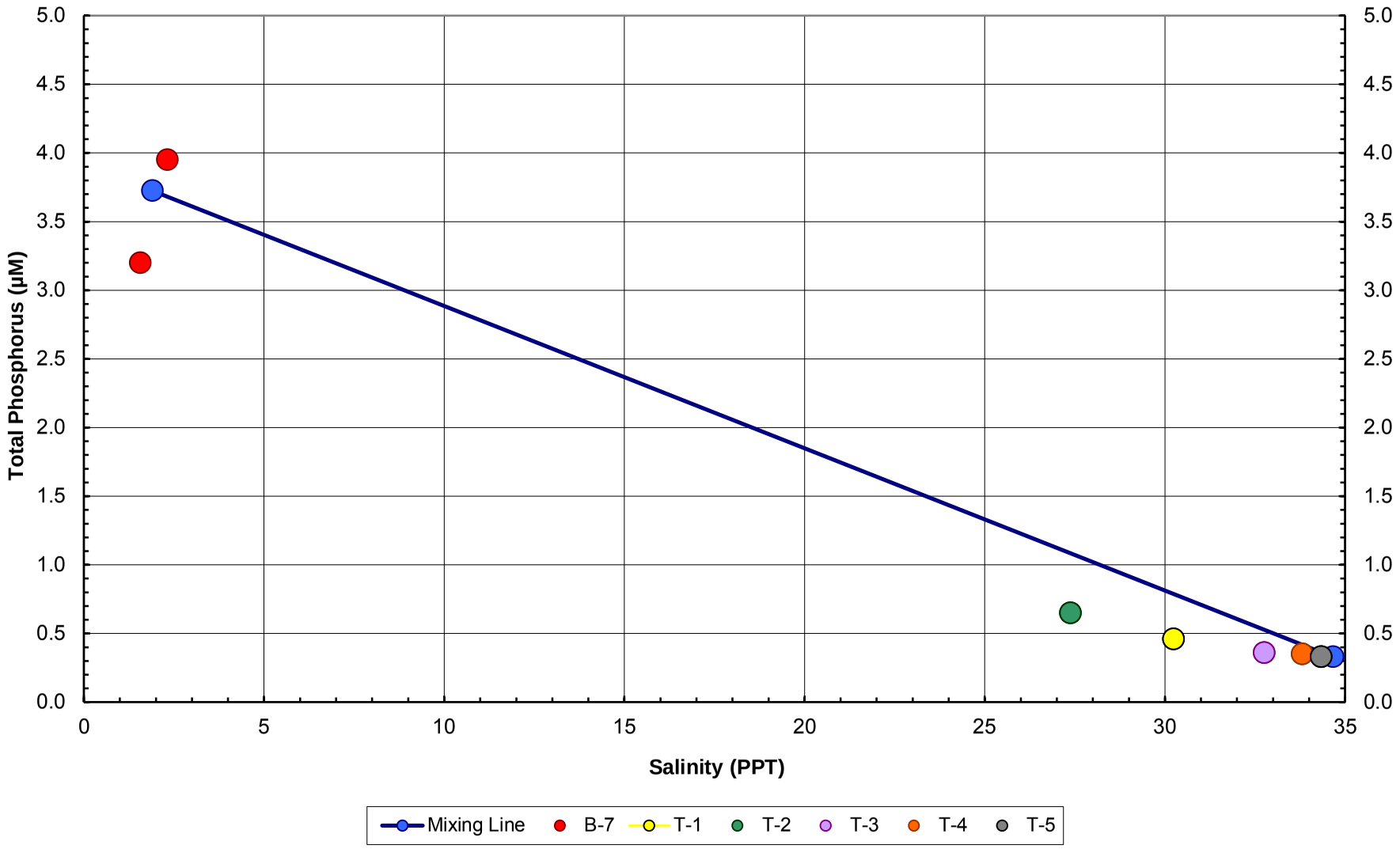


Figure 14. Mixing Line Analysis of Total Phosphorus in Shoreline Samples at Transects 1 to 5
(Refer to Figure 12 for Transect Locations)



presumably reflect the ongoing natural removal of phosphorus in groundwater as it moves to its shoreline discharge.

SURFACE WATER OCCURRENCE IN THE VICINITY OF THE PROJECT SITE

Overview of Surface Water Occurrence

There are no perennial streams or other surface water features in the near vicinity of the project site which would effect or be effected by the proposed project. Surface water occurs only during and immediately following rainfall events of sufficient intensity to produce surface water runoff.

Existing Stormwater Runoff Infrastructure

Stormwater runoff is conveyed to the shoreline in the near vicinity of the project site at the two locations shown on Figure 15. Facilities which deliver runoff to Shoreline Discharge Site 1 consist of a grated field inlet in the gutter on the mauka side of Kamehameha Highway and a 24-inch pipeline which runs from the field inlet beneath the highway and alongside the Fire Station to its point of discharge about 100 feet from the shoreline. The field inlet picks up most of the runoff from the Foodland parking lot and essentially all of the runoff which sheet flows off the three contiguous Hanapohaku parcels into the Kamehameha Highway gutter and moves south to the grated inlet.

The facilities which convey surface water runoff to Shoreline Discharge Site 2 drain a significantly larger area. Drainage facilities in Pupukea Road collect runoff from about 130 mauka acres, including all of Hakuola Gulch, and convey the runoff via pipes and open channel to the catch basin at the intersection of Pupukea Road and Kamehameha Highway. From the catch basin, runoff crosses beneath Kamehameha Highway and runs south parallel to the highway to its discharge point shown on Figure 15. Runoff from the mauka portion of the Foodland site discharges at this location.

POTENTIAL IMPACTS ON WATER RESOURCES OF THE PUPUKEA RCCC PROJECT

Overview

The project described in the initial sections of this report has the potential to impact groundwater, surface water, and the nearshore marine waters in the following three ways: (1) by the additional consumption of drinking water from the BWS system; (2) by the implementation of the drainage system infrastructure; and (3) by the additional generation of wastewater that will be treated and disposed of onsite. Each of these potential impacts is quantified in the sections following.

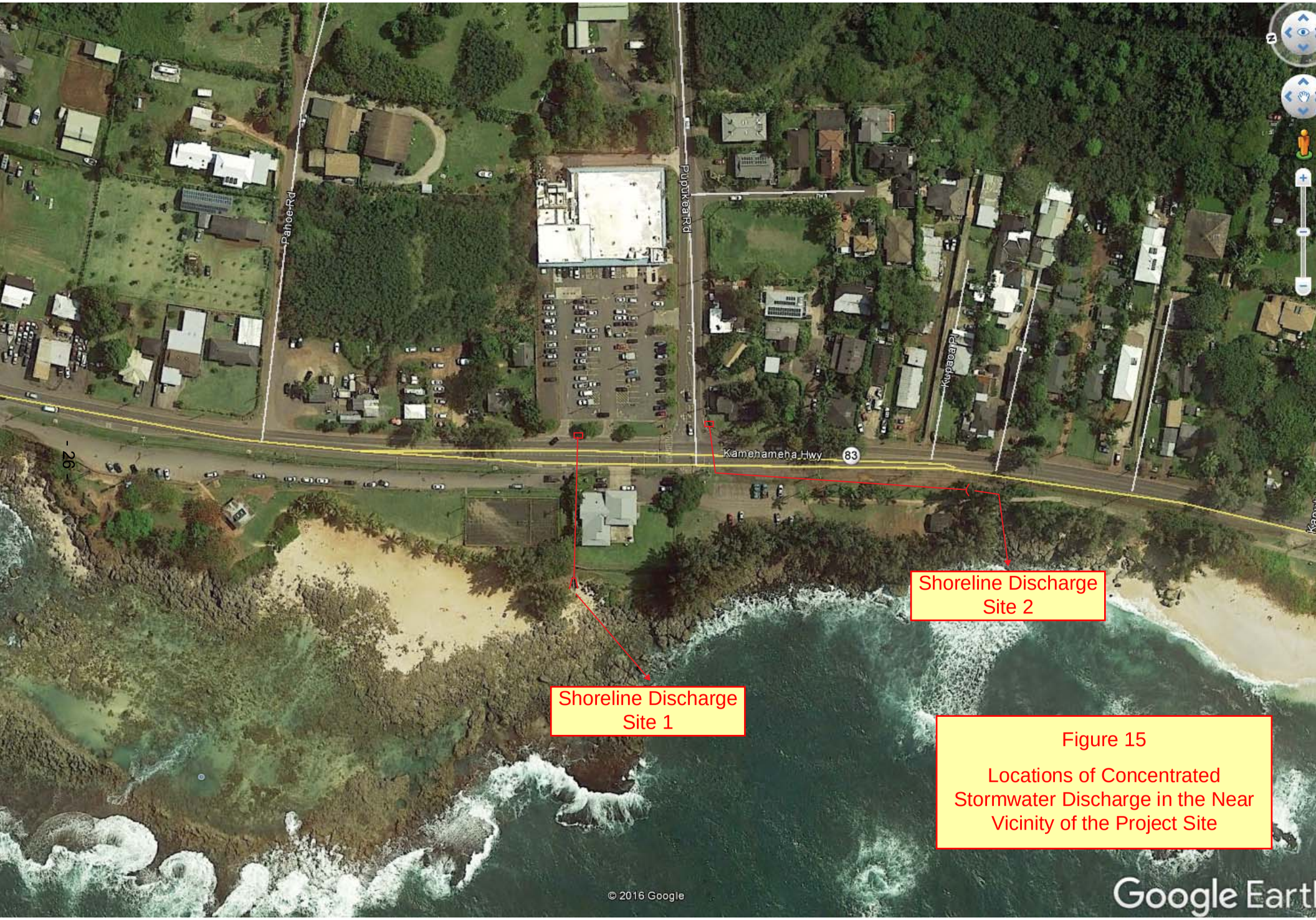


Figure 15

Locations of Concentrated Stormwater Discharge in the Near Vicinity of the Project Site

Additional Consumption of Drinking Water from the BWS System

At present, the total use of drinking water by the three Hanapohaku parcels and the adjacent Foodland parcel is approximately 4700 GPD. The projected increase on the three Hanapohaku parcels is about 6000 GPD (from 2200 to about 8200 GPD). For the Foodland parcel, additional landscape irrigation could increase the total use from 2500 to 3000 GPD. The total increase of about 6500 GPD would represent a permanent commitment of this potable quality groundwater resource for these uses. The water would come from BWS wells located in the adjacent Waialua Aquifer. However, the uses do qualify as "reasonable beneficial" as defined under the State Water Code and the relatively small amount is well within the hydraulic capacity of BWS' system. As such, the additional draft of groundwater by BWS' wells from the Waialua Aquifer is not considered to be significant.

Implementation of the Drainage System

Implementation of the proposed drainage system will reduce the volume of surface water from the three Hanapohaku parcels and from a portion of the parking lot of the Foodland parcel. Use of bioswales and other BMPs and the installation of subsurface detention storage will substantially reduce the suspended and bedload sediment that currently is carried into the marine environment by surface runoff. Implementation of the larger than required retention storage of 26,600 cubic feet will substantially reduce the volume of runoff from the Hanapohaku parcels. An approximation of the extent of this reduction for 24-hour storms of 1- to 50-year recurrence intervals is presented on Table 5. Notes at the bottom of the table explain the basis of the calculations. Using the SCS method to compute runoff, storm rainfalls of up to 4 inches (greater than the 1-year, 24-hour event) would be entirely retained in detention storage. This retained water would eventually percolate to the groundwater below. In the process of percolation to groundwater and the subsequent lateral travel to discharge into the marine environment, nitrogen and phosphorus concentrations will be significantly reduced by denitrification and absorption processes. In all respects, the project's proposed drainage system will have a significant environmental benefit in comparison to the present use of the property.

Wastewater Collection, Treatment, and Disposal

There are three onsite wastewater treatment systems to consider: The existing system on the Foodland parcel; the existing system on TMK 5-9-011:068, the Hanapohaku parcel adjacent to Foodland; and the new system proposed for the Pupukea RCCC project. Each is described and quantified in the sections following.

Table 5. Comparative Runoff Volumes for Pre- and Post-Development of the Three Hanapohaku Parcels for 24-Hour Storms of Varying Recurrence Intervals

Recurrence Interval (Years)	24-Hour Rainfall (Inches)	Present Land Use Amount of Runoff		Proposed Development				Project's Reduction of Runoff Volume (Cubic Feet)
				Amount of Runoff		Detained Onsite (Cubic Feet)	Net Release (Cubic Feet)	
		Inches	Cubic Feet	Inches	Cubic Feet			
1	3.46	1.750	17,279	2.232	22,038	22,038	0	17,279
2	4.81	2.910	28,732	3.489	34,449	26,600	7,849	20,883
5	6.65	4.589	45,310	5.254	51,876	26,600	25,276	20,034
10	8.07	5.926	58,511	6.637	65,531	26,600	38,931	19,580
25	10.0	7.776	76,777	8.531	84,232	26,600	57,632	19,145
50	11.5	9.229	91,123	10.011	98,845	26,600	72,245	18,878

Notes:
1. Storm rainfall amounts from NOAA Atlas 14.
2. The area of the three Hanapohaku parcels is 2.72 acres.
3. Runoff calculated by the SCS Curve Number (CN) method. CN value for the present land use is 82. CN for the proposed development is 88.
4. Stormwater detention to be provided is 26,200 cubic feet.

Foodland Onsite Wastewater Treatment System. As described in J^3 Engineering LLC (August 2011), this system consists of a 1000 gallon pre-loader tank, a 15,000 gallon ATU, and about 27,000 square feet of absorption bed area, all in the site's parking lot. The system was designed to handle 2500 GPD of wastewater. The actual wastewater generation rate is not known. If it amounts to 80 percent of the 2500 GPD of ongoing water use, it would be 2000 GPD. The amount of wastewater generation, its level of treatment, and the manner of its disposal will not be changed as a result of this project. Further, its impact on the quality and quantity of groundwater discharging into the marine environment will not change and this impact is already reflected in the quality of the water samples collected along the shoreline (refer back to Table 4).

Existing Wastewater Treatment System on TMK 5-9-011:068. The basis of design of this system is described in Laulea Engineering LLC (April 2016). It consists of a 320 gallon grease interceptor tank, two ATUs of nominal 800 GPD capacity, and 1640 square feet of leach field absorption area. It is not known what the actual rate of wastewater treatment and disposal is, but it is conservatively assumed to be 400 GPD. All components of this system are to be removed for the development of the Pupukea RCCC project.

System Proposed for the Pupukea RCCC Project. The basis of design of the proposed system is described in Enviniti LLC (August 2017). It would consist of the following: grease interceptor tanks; pre-loader tanks; an aeration tank; stand alone chemical basins; a sequence batch reactor tank system (or other) to produce secondary quality effluent; and 27,000 square feet of absorption bed area for disposal. The design wastewater flow rate is 10,533 GPD. As indicated earlier, it is assumed for this assessment that actual wastewater production will be 7320 GPD as a year-round average rate. The balance of the water use would be for landscape irrigation.

Net Increase of Treated Wastewater to the Groundwater and Marine Environment. The contribution of the Foodland wastewater treatment system will remain unchanged. Removal of the existing system in TMK 5-9-011:068 and its replacement with the system proposed for the Pupukea RCCC will result in a net increase in the production of wastewater of approximately 6920 GPD. The resulting net increase in total nitrogen and total phosphorus to the groundwater flowing beneath the project site is approximated with the following assumptions:

- The net increase in wastewater production will be 6920 GPD.
- Average nitrogen and phosphorus concentrations in the wastewater are 60 and 12 mg/l, respectively. These concentrations are toward the high end of the ranges for typical domestic sewage.

- Nutrient removal rates in the project's ATUs will be 50 percent for nitrogen and 25 percent for phosphorus, resulting in residual concentrations of 30 and 9.0 mg/l respectively in the treated wastewater. This is a conservative assumption as the actual removal rates are likely to be greater.
- Further nutrient removal will occur during the disposal in the absorption beds, downward percolation through the vadose zone (including travel through clay); and movement with groundwater to discharge into the marine environment. These removal rates are conservatively approximated to be 80 percent for nitrogen and 90 percent for phosphorus. Based on these assumptions, the residual concentrations of wastewater ultimately discharging into the marine environment would be 6.0 mg/l for nitrogen and 0.90 mg/l for phosphorus. For 6920 gallons of treated wastewater, these additions would be equivalent to increases of 0.35 pounds per day of nitrogen and 0.051 pounds per day of phosphorus.

In comparison to the calculated nutrient increases in the groundwater discharging into the marine environment as a result of the project, the present ongoing groundwater discharge of these nutrients can be approximated as follows:

- Based on groundwater recharge calculations in Engott et al (2015), the aquifer's total groundwater flow rate is 50 MGD, equivalent to 5.5 MGD per coastal mile.
- The project site mauka of Kamehameha Highway spans 560 feet of coastline. At the coastline, contaminants percolating to groundwater from the site will impact at least 760 feet of groundwater discharging along the shoreline due to lateral dispersion. This groundwater flow is approximately 790,000 GPD.
- Concentrations of nitrogen and phosphorus in groundwater presently flowing beneath the site and discharging into the marine environment are assumed to be the averages of the top samples in the B-7 monitor well (refer back to Table 3): 88.3 μM (1.24 mg/l) for nitrogen; and 3.58 μM (0.111 mg/l) for phosphorus.
- For the above concentrations and a 790,000 GPD groundwater flow, present daily nitrogen and phosphorus discharges into the marine environment along the 760 feet of shoreline amount to 8.16 and 0.73 pounds, respectively.
- For the calculated nutrient loading as a result of the project's net increase of 6920 GPD of treated wastewater, the nitrogen addition would be an increase of 4.3 percent over 760 feet of the coastline and the phosphorus addition would amount to 7.0 percent.

Figure 16 has been prepared to put these calculated potential nutrient increases in perspective. There are more than 500 residential units nominally upgradient of the project site. 438 of these have registered individual wastewater systems with the Department of Health: 9 are aerobic systems; 19 are

Figure 16

Residences in the Mauka-to-Makai Corridor Upgradient of the Pupukea RCC Project

listed as septic systems, presumably with leach field disposal; 118 are listed as soil treatment systems; 279 are cesspools; and 13 are listed as multiple. If the average wastewater production is 250 GPD per residence, more than 100,000 GPD of wastewater is being disposed of in the 3000-foot wide mauka-to-makai corridor outlined in Figure 16. This is more about 15 times greater than the 6,920 GPD wastewater increase attributed to the Pupukea RCCC project. The impact to groundwater quality of this ongoing wastewater disposal is reflected in the quality of water sampled in the B-1 and B-7 monitor wells as listed in Table 3. The fact is that the nutrient levels in these two wells show little or no influence of the ongoing wastewater disposal over and above the expected levels of nutrients in groundwater as a result of natural processes. This is at least an indirect confirmation that the nutrient removal rates assumed in the calculation of the Pupukea RCCC's potential impact are quite conservative.

REFERENCES

Babcock, R. W., C. Nguyen, S. Taguchi, J. DeGracia, and X. Visaya. 2016. Performance Evaluation of a Waipono Pure – 800 Wastewater System. WRRC-2016-26, Water Resources Research Center, University of Hawaii.

Engott, J. A., A. G. Bassiouni, Maoya, and S. K. Izuka. 2015. Spatially Distributed Groundwater Recharge for 2010 Land Cover Estimated Using a Water – Budget Model for the Island of Oahu, Hawaii. USGS Scientific Investigations Report 2015-5010.

Enviniti LLC. August 2017. Final Wastewater Report, Pupukea Rural Community Commercial Center. Consultant report prepared for Group 70 International, Inc.

George A. L. Yuen and Associates, Inc. 1990. Water Resources Protection Plan, Volumes I and II. Consultant report prepared for the Commission on Water Resource Management, DLNR, State of Hawaii.

Group 70 International, Inc. August 2017. Preliminary Engineering Report, Pupukea Rural Community Commercial Center. Consultant report prepared for Hanapohaku, LLC.

J3 Engineering LLC. August 2011. New Aerobic Treatment Works Design for Foodland Pupukea Supermarket. Memo Report to DOH Wastewater Branch with Attachments.

Laulea Engineering LLC. April 2016. Shark's Cove Lot 2A IWS Design. Construction plans of the wastewater system installed on TMK 5-9-011:068

Lusk, M., G.S. Toor, and T. Obreza. July 0211. Onsite Sewage Treatment and Disposal Systems: Phosphorus. Document SL349, IFAS Extension, University of Florida.

Marine Research Consultants. 2017. Assessment of Marine Chemistry and Community Structure in the Vicinity of the Proposed Pupukea Rural Community Commercial Center. Consultant report prepared for Group 70.

Mink, J. F. 1988. Groundwater Conditions in Pupukea-Paumalu, Oahu. Consultant report prepared for Ohbayashi Hawaii Corporation.

Mink, J. F. 1989. Pupukea Golf Course Wells – Summary of Pump Test Results and Recommendations for Pump Size and Settings. Consultant report prepared for Ohbayashi Hawaii Corporation.

Shade, P. J. and W. D. Nichols. 1996. Water Budget and the Effects of Land-Use Changes on Ground-Water Recharge, Oahu, Hawaii. USGS Professional Paper 1412-C.

REFERENCES
(continued)

Takasaki, K. J. and J. F. Mink. 1985. Evaluation of Major Dike-Impounded Ground-Water Reservoirs, Island of Oahu. U.S. Geological Survey Water Supply Paper 2217.

Takasaki, K. J. and S. Valenciano. 1969. Water in the Kahuku Area, Oahu, Hawaii. U.S. Geological Survey Paper 1874.

TNWRE Inc. 1993. Groundwater Evaluation for the Proposed Lihilani Project in Pupukea-Paumalu, Oahu, Hawaii. Consultant report prepared for Quon-Yamagishi Partnership.

Wilson Okamoto Corporation. 2008. Water Resource Projection Plan. Consultant report prepared for the Commission on Water Resource Management, DLNR, State of Hawaii.

Appendix

Logs of the B-1 and B-7 Boreholes by Geolabs, Inc.

PLog

GEOLABS, INC.

Geotechnical Engineering

HANAPOHAKU COMMERCIAL DEVELOPMENT
Pupukea

Log of Boring

1

Approximate Ground Surface Elevation (feet): 45 *
Latitude:21.649
Longitude: -158.06134

Drilling Notes	Sample Quality	Rec. Length/ Sample Length (inches)	RQD Length/ Sample Length (inches)	Blows/ 6"	Pocket Pen. (tsf)	Depth (feet)	USCS	Description
							GP CH	Gray and white coarse **GRAVEL (BASALTIC)** with some crushed concrete, medium dense, dry (fill)
	Good	16/18"		5/10/15	4.0		CH	Brown **SILTY CLAY** with traces of gravel (basaltic), stiff, moist (fill)
	Fair	12/18"		7/7/12				Mottled reddish brown with trace gray **SILTY CLAY** with some decomposed gravel, hard, moist (older alluvium) grades more gravelly and silty locally
	Good	16/18"		7/11/14	4.5	5		
	Fair	15/18"		6/15/18		10		
	Good	15/15"		24/48/50/3"	4.5	15		
Drill water circulating		26/30" 11:18 11:27	18/30" 12:10			20		Gray vugular **BASALT**, slightly to moderately fractured, unweathered to slightly weathered, very hard (a'a basalt)
		60/60" 12:32	49/60" 12:10			25		
		24/60" 12:32	6/60" 13:04			30		Brownish gray subangular **GRAVELLY COBBLES (BASALTIC)** with a little silty sand, dense, moist (clinker)
		51/60"	22/60"			35		Gray vugular **BASALT**, moderately fractured, slightly weathered, very hard (a'a basalt)

DRAFT

Date/Time Started:	December 15, 2016 09:30	Water Level: ▽ 42.6 ft. 12/19/2016 0805 HRS	
Date/Time Completed:	December 19, 2016 14:30		
Logged By:	S. Latronic	Driller Name:	K. Vongamath
Project Engineer:	Glenn Barut	Drill Rig:	CME-75DG2
Total Depth:	101 feet	Drilling Method:	4" Solid Stem Auger & PQ Coring
Work Order:	7447-00	Driving Energy:	140 lb. wt., 30 in. drop

Plate .1

BORING LOG DRAFT 7447-00.GPJ GEOLABS.GDT 12/23/16

PLog

GEOLABS, INC.

Geotechnical Engineering

HANAPOHAKU COMMERCIAL DEVELOPMENT
Pupukea

Log of Boring 1

(Continued from previous plate)

Drilling Notes	Sample Quality	Field: Rec. Length/ Sample Length (inches)	Field: RQD Length/ Sample Length (inches)	Blows/ 6"	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
		13:32 14:33							GW	Brownish gray subangular **SANDY GRAVEL (BASALTIC)** with a little cobbles, dense, moist (clinker)
		46/60"	9/60"							Brownish gray to gray vesicular **BASALT**, closely fractured, slightly weathered, hard (pahoehoe basalt)
slight water loss @ 39.5'		14:43 14:51				40				
		58/60"	20/60"							Orangish brown and gray brecciated **BASALT**, closely fractured, slightly to moderately weathered, medium hard (welded clinker)
		15:26 15:37				45				Gray vugular **BASALT**, slightly to moderately fractured, unweathered to slightly weathered, very hard (a'a basalt)
		60/60"	49/60"							
		15:54 16:09				50				
		36/60"	20/60"							
		16:21 16:30				55				Brownish gray subangular **GRAVELLY COBBLES (BASALTIC)**, dense, wet (clinker)
		56/60"	21/60"							Gray vugular **BASALT**, moderately fractured, unweathered to slightly weathered, hard to very hard (a'a basalt)
Lost drill water circulation		16:42 09:18				60				
		56/60"	20/60"							
		09:30 09:45				65				Orangish brown and gray subangular **GRAVELLY COBBLES (BASALTIC)** with some sand, medium dense, wet (clinker)
		27/60"	0/60"							
						70				

DRAFT

Date/Time Started:	December 15, 2016 09:30	Water Level: ▼ 42.6 ft. 12/19/2016 0805 HRS	
Date/Time Completed:	December 19, 2016 14:30		
Logged By:	S. Latronic	Driller Name:	K. Vongamath
Project Engineer:	Glenn Barut	Drill Rig:	CME-75DG2
Total Depth:	101 feet	Drilling Method:	4" Solid Stem Auger & PQ Coring
Work Order:	7447-00	Driving Energy:	140 lb. wt., 30 in. drop

Plate .2

BORING LOG DRAFT 7447-00.GPJ GEOLABS.GDT 12/23/16

PLog

GEOLABS, INC.

Geotechnical Engineering

HANAPOHAKU COMMERCIAL DEVELOPMENT
Pupukea

Log of Boring

1

Drilling Notes	Sample Quality	Field: Rec. Length/ Sample Length (inches)	Field: RQD Length/ Sample Length (inches)	Blows/ 6"	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
		09:58 10:07								(Continued from previous plate)
										Gray dense **BASALT**, slightly to moderately fractured, unweathered to slightly weathered, very hard (a'a basalt)
		60/60"	46/60"							
		10:17 10:27				75				
		60/60"	22/60"							
		10:47 10:58				80				
										grades to vugular
		60/60"	42/60"							
		11:27 11:42				85				
		60/60"	39/60"							Orangish brown and gray cemented **BASALT**, moderately to closely fractured, moderately weathered, medium hard (welded clinker)
		11:53 12:03				90				
		44/60"	15/60"							
		12:16 12:26				95				Gray vugular **BASALT**, moderately fractured, unweathered to slightly weathered, very hard (a'a basalt)
		60/60"	38/60"							
		12:44				100				
										Boring terminated at 101 feet
						105				

DRAFT

Date/Time Started:	December 15, 2016 09:30	Water Level: ▼ 42.6 ft. 12/19/2016 0805 HRS	
Date/Time Completed:	December 19, 2016 14:30		
Logged By:	S. Latronic	Driller Name:	K. Vongamath
Project Engineer:	Glenn Barut	Drill Rig:	CME-75DG2
Total Depth:	101 feet	Drilling Method:	4" Solid Stem Auger & PQ Coring
Work Order:	7447-00	Driving Energy:	140 lb. wt., 30 in. drop

Plate

.3

PLog

GEOLABS, INC.

Geotechnical Engineering

HANAPOHAKU COMMERCIAL DEVELOPMENT
Pupukea

Log of Boring
7

Approximate Ground Surface Elevation (feet): 37 *
Latitude:21.64945
Longitude: -158.06192

Drilling Notes	Sample Quality	Rec. Length/ Sample Length (inches)	RQD Length/ Sample Length (inches)	Blows/ 6"	Pocket Pen. (tsf)	Depth (feet)	USCS	Description
							GP GW CH	Light gray fine to medium **GRAVEL (BASALTIC)**, loose, dry (fill)
	Good	17/18"		8/11/12	2.5		CH	Brownish gray **SANDY GRAVEL (BASALTIC)**, dense, moist (fill)
	Fair	6/18"		5/7/8				Brown **SILTY CLAY**, stiff, moist (fill)
	Good	16/18"		8/13/17	4.5	5		Mottled brown with some gray **SILTY CLAY** with a little decomposed gravel, very stiff, moist (older alluvium) grades to hard
	Fair	12/18"		7/9/12		10		
	Fair	14/18"		8/12/18		15		
							SM	Light tannish white **CORAL**, severely fractured, moderately to highly weathered, soft to medium hard (coral formation)
	Fair	13/24"		16/11/11/29		20		Light tannish white with some brown **SILTY SAND (CORALLINE)** with some gravel, medium dense to dense, moist (coralline detritus)
							SM	Brown with trace tannish white **SILTY SAND** with some gravel (coralline) moderately well cemented, dense, moist (alluvium w/coral debris)
Drill water circulating	Fair	5/5" 15:07		50/5"		25		
		8/60"	0/60"					
	Fair	4/4" 15:36 08:20		50/4"		30		grades with gravel (basaltic)
							GM	Gray with some brown **SILTY GRAVEL (BASALTIC)** with some sand with traces of clay, dense, moist to wet (clinker)
		4/56"	0/56"			35		

DRAFT

Date/Time Started:	December 20, 2016 12:05	Water Level: ▼ 35.2 ft. 12/22/2016 0715 HRS	
Date/Time Completed:	December 22, 2016 12:30		
Logged By:	S. Latronic	Driller Name:	K. Vongamath
Project Engineer:	Glenn Barut	Drill Rig:	CME-75DG2
Total Depth:	100.5 feet	Drilling Method:	4" Solid Stem Auger & PQ Coring
Work Order:	7447-00	Driving Energy:	140 lb. wt., 30 in. drop

Plate
.1

BORING LOG DRAFT 7447-00.GPJ GEOLABS.GDT 12/23/16

PLog

GEOLABS, INC.

Geotechnical Engineering

HANAPOHAKU COMMERCIAL DEVELOPMENT
Pupukea

Log of Boring 7

(Continued from previous plate)

Drilling Notes	Sample Quality	Rec. Length/ Sample Length (inches)	RQD Length/ Sample Length (inches)	Blows/ 6"	Pocket Pen. (tsf)	Depth (feet)	USCS	Description
	Fair	08:40 16/18" 09:11		27/29/26			GM	
		0/42"	0/42"					
	Fair	09:29 7/8" 09:39		14/30/2"		40		
		51/52"	39/52"					Brownish gray cemented **BASALT**, moderately fractured, slightly weathered, hard (welded clinker)
		09:54 10:04				45		Gray dense **BASALT**, moderately fractured, unweathered to slightly weathered, very hard (a'a basalt)
		55/60"	20/60"					grades to vugular
		10:21 10:49				50		
		15/60"	6/60"				GW	Orangish brown and gray subangular **SANDY GRAVEL (BASALTIC)** with some silt with a little cobbles, medium dense to dense, wet (clinker)
		11:04 11:12				55		
slight loss of drill water @ 56.5'		5/60"	0/60"					
	Fair	11:22 16/18" 11:51		27/13/13		60		
slight loss of drill water @ 63.5'		0/42"	0/42"					
	Fair	11:57 8/9" 12:09		13/50/3"		65		
		51/51"	14/51"					Gray vugular **BASALT**, moderately fractured, unweathered to slightly weathered, very hard (a'a basalt)
						70		

DRAFT

Date/Time Started:	December 20, 2016 12:05	Water Level: ▼ 35.2 ft. 12/22/2016 0715 HRS	
Date/Time Completed:	December 22, 2016 12:30		
Logged By:	S. Latronic	Driller Name:	K. Vongamath
Project Engineer:	Glenn Barut	Drill Rig:	CME-75DG2
Total Depth:	100.5 feet	Drilling Method:	4" Solid Stem Auger & PQ Coring
Work Order:	7447-00	Driving Energy:	140 lb. wt., 30 in. drop

Plate .2

BORING LOG DRAFT 7447-00.GPJ GEOLABS.GDT 12/23/16

PLog

GEOLABS, INC.

Geotechnical Engineering

HANAPOHAKU COMMERCIAL DEVELOPMENT
Pupukea

Log of Boring
7

(Continued from previous plate)

Drilling Notes	Sample Quality	Field: Rec. Length/ Sample Length (inches)	Field: RQD Length/ Sample Length (inches)	Blows/ 6"	Pocket Pen. (tsf)	Depth (feet)	Sample	Graphic	USCS	Description
		12:26 12:56								
		57/60"	57/60"							grades to slightly fractured
		13:17 13:29				75				
		60/60"	58/60"							
		14:10 14:19				80				grades to massive
		60/60"	52/60"							
		14:37 14:50				85				
		60/60"	40/60"							Brownish gray to gray cemented **BASALT**, moderately fractured, slightly weathered, hard (welded clinker)
Lost drill water circulation		15:02 15:16				90				
		54/60"	42/60"							Gray vugular **BASALT**, slightly to moderately fractured, unweathered to slightly weathered, very hard (a'a basalt)
		14:25 15:43				95				
		59/60"	46/60"							
drill water returned		15:55				100				Boring terminated at 100.5 feet
						105				

DRAFT

Date/Time Started:	December 20, 2016 12:05	Water Level: ▽ 35.2 ft. 12/22/2016 0715 HRS	
Date/Time Completed:	December 22, 2016 12:30		
Logged By:	S. Latronic	Driller Name:	K. Vongamath
Project Engineer:	Glenn Barut	Drill Rig:	CME-75DG2
Total Depth:	100.5 feet	Drilling Method:	4" Solid Stem Auger & PQ Coring
Work Order:	7447-00	Driving Energy:	140 lb. wt., 30 in. drop

Plate
.3

BORING LOG DRAFT 7447-00.GPJ GEOLABS.GDT 12/23/16

APPENDIX C

ASSESSMENT OF MARINE WATER CHEMISTRY AND COMMUNITY STRUCTURE IN THE VICINITY OF THE PROPOSED PUPUKEA RURAL COMMUNITY COMMERCIAL CENTER, NORTH SHORE, OAHU, HAWAII

ASSESSMENT OF MARINE WATER CHEMISTRY AND COMMUNITY STRUCTURE IN THE VICINITY OF THE PROPOSED PŪPŪKEA RURAL COMMUNITY COMMERCIAL CENTER

NORTH SHORE, OAHU, HAWAII

Prepared for:

G70 Design
925 Bethel Street, Fifth Floor
Honolulu, Hawaii 96813

Prepared by:

Marine Research Consultants, Inc.
1039 Waakaua Pl.
Honolulu, HI 96822

September 2017

I. INTRODUCTION AND PURPOSE

The proposed Pūpūkea Rural Community Commercial Center (PRCCC) project site is comprised of four parcels in Pūpūkea, North Shore, Oahu, Hawaii fronting Kamehameha Highway. Three of the contiguous parcels owned by Hanapohaku LLC (2.7 acres) are located to the north of the Foodland Pūpūkea parcel (1.7 acres). The Hanapohaku LLC parcels contain a mix of commercial ocean recreational rental concessions including Seamaids Beach Boutique and North Shore Surf Shop, a real estate office, dentist office, and mobile food trucks. The existing uses on the three parcels will be completely removed, while the existing Foodland grocery store will remain in place.

The project will develop a Rural Community Commercial Center with an overall focus on sustainable principles, consistent with the design guidelines of the North Shore Sustainable Communities Plan. The rural center will provide goods and services for the Pūpūkea, Waimea, and Kawailoa communities. Infrastructure will be provided to support the new facilities, including driveways, parking with solar panel canopies, drainage, water supply, and wastewater. The planned floor area of the facilities will be approximately 27,500 sf of leasable area (30,000 sf gross floor area). Design of the facilities will be consistent with the country character of the North Shore. The project will comply with the North Shore Sustainable Communities Plan guidelines for Rural Community Commercial Centers by providing compact and efficient organization of various commercial services; reflecting the rural character compatible with surrounding open spaces and adjacent residential uses; limiting building heights to two stories; and visually screening parking from the street and adjacent residential lots with landscaping. Buildings will be set back from the highway.

While all planning and construction activities will place a high priority on maintaining the existing relatively pristine nature of the marine environment, it is nevertheless important to address any potential impacts that may be associated with the planned project. None of the proposed land uses includes any direct alteration of the coastal areas or nearshore waters. The potential exists, however, for the project to affect the composition and volume of groundwater that flows beneath the project site, as well as surface runoff emanating from the project. As all groundwater that could be affected by the project subsequently reaches the ocean, it is recognized that there is potential for the project to affect the marine environment. This concern is especially critical for Sharks Cove, which lies directly makai of the project site. Sharks Cove is a recreational area that is heavily utilized for water recreation, and is one of the premier snorkeling and shore-based SCUBA diving areas in the State of Hawaii. Therefore, important questions include the potential impacts from constituents added to groundwater which could cause alterations to water quality and marine life.

In the interest of addressing these concerns and assuring maintenance of environmental quality, a baseline marine environmental assessment and potential impact analysis of the nearshore areas off the PRCCC property was conducted in May/June 2017.

The rationale of this assessment is fourfold; 1) to provide a comprehensive and accurate depiction of the marine habitat in terms of both water chemistry, physical structure, and biotic community structure; 2) to determine the contributions of groundwater and surface flow to the composition of nearshore marine waters before the commencement of any project construction activities; 3) to evaluate the effects that such input, as well as other natural "stressors," exerts on existing marine community structure. The 4th objective is to combine this information with estimates of changes in groundwater and surface water flow rates and chemical composition that could result from the project. These predicted changes in groundwater and surface water flow rates have been supplied by Tom Nance Water Resource Engineering (TNWRE 2017). Results of the combined evaluation will quantify predicted changes to marine water chemistry offshore of the project site. Such quantification will indicate if, and to what degree, there is the potential for negative effects to the marine environments from the proposed project.

II. WATER CHEMISTRY

A. METHODS

Five transect survey sites were established downslope of the PRCCC property. Transect site 1 was located north of the project site and bisected Sharks Cove. Transect site 2 was located off the northern boundary of the project site and bisected the reef flat bounding Sharks Cove. Transect site 3 was located off the southern end of the project site, while Transect 4 originated at the mouth of the Stream draining upslope areas mauka of the project site. Transect 5, located at the southern end of Three Tables beach served as a control that should be beyond the influence of the project area (Figure 1).

Water quality was evaluated at each site on transects that were oriented perpendicular to the shoreline and depth contours. Water samples were collected at 6 to 10 locations on each transect from the highest wash of waves at the shoreline to distances of 185-300 meters (m) offshore. Sampling locations were determined by hand-held GPS. Such a sampling scheme was designed to span the greatest range of salinity with respect to potential freshwater efflux at the shoreline. Sampling was more concentrated in the nearshore zone because this area is most likely to show the effects of shoreline modification. At locations where water depth was less than one (1) meter, a single sample was collected within 10 centimeters (cm) of the air-water interface. At locations where water depth was greater than one meter a surface sample was collected within approximately 10 cm of the sea

surface, and a bottom sample was collected within 10-20 cm of the sea floor.

In order to determine chemical concentrations in unaltered groundwater, samples were also collected from wells located upslope from the project site. These data are included in an accompanying report entitled "Assessment of Potential Impacts on Water Resources of the Proposed Pūpūkea Rural Community Commercial Center" prepared by Tom Nance Water Resources Engineering in June 2017.

Water quality parameters evaluated included the ten specific criteria designated for open coastal waters in Chapter 11-54, Section 06 (Open Coastal waters) of the State of Hawaii Department of Health (DOH) Water Quality Standards. These criteria include: total nitrogen (TN), nitrate + nitrite nitrogen (NO_3^- + NO_2^-, hereafter referred to as NO_3^-), ammonium nitrogen (NH_4^+), total phosphorus (TP), Chlorophyll a (Chl *a*), turbidity, temperature, pH and salinity. In addition, orthophosphate phosphorus (PO_4^{-3}) and silica (Si) were also reported because these parameters are sensitive indicators of biological activity and the degree of groundwater mixing.

All fieldwork was conducted on May 17, 2017 by investigators working from shore. All water samples were collected in triple-rinsed 500-milliliter acid-washed, triple rinsed polyethylene bottles, and placed on ice as soon as possible. Analyses for Si, NH_4^+, PO_4^{3-}, and NO_3^- were performed on filtered samples with a Technicon Autoanalyzer using standard methods for seawater analysis (Strickland and Parsons 1968, Grasshoff 1983). TN and TP were analyzed in a similar fashion following digestion. Total organic nitrogen (TON) and total organic phosphorus (TOP) were calculated as the difference between TN and dissolved inorganic N, and TP and dissolved inorganic P, respectively.

Chl *a* was measured by filtering water through glass-fiber filters; pigments on filters were extracted in 90% acetone in the dark at -20° C for 12-24 hours. Fluorescence before and after acidification of the extract was measured with a Turner Designs fluorometer. Salinity was determined using an AGE Model 2100 laboratory salinometer with a readability of 0.0001‰ (ppt). Turbidity was determined using a 90-degree nephelometer, and reported in nephelometric turbidity units (NTU) (precision of 0.01 NTU).

In-situ field measurements of continuous vertical profiles of water temperature, dissolved oxygen, pH and salinity were acquired using a RBR Concerto CTD calibrated prior to fieldwork.

EPA and Standard Methods (SM) methods that were employed for chemical analyses, as well as detection limits, are listed in the Code of Federal Regulations (CRF) Title 40, Chapter 1, Part 136, are as follows:

NH_4^+ EPA 350.1, Rev. 2.0 or SM4500-NH3 G, detection limit 0.42 µg/L.
NO_3^- + NO_2^-, EPA 353.2, Rev. 2.0 or SM4500-NO3F, detection limit 0.28 µg/L

PO_4^{-3} EPA 365.5 or SM4500-P F, detection limit 0.31 µg/L.
Total P EPA 365.1, Rev. 2.0 or SM4500-P E J, detection limit 0.62 µg/L.
Total N SM 4500-N C., detection limit 5.60 µg/L.
Si, EPA 370.1 or SM 4500 SiO2 E, detection limit 5.32 µg/L.
Chlorophyll a, SM 10200, detection limit 0.006 µg/L.
pH, EPA 150.1 or SM4500H+B, detection limit 0.002 pH units.
Turbidity, EPA 180.1, Rev. 2.0 or SM2130 B, detection limit 0.008 NTU.
Temperature, SM 2550 B, detection limit 0.01 degrees centigrade.
Salinity, SM 2520, detection limit 0.003 ppt.
Dissolved Oxygen, SM4500 O G, and detection limit 0.01% sat.

All fieldwork was conducted by Dr. Steven Dollar and Ms. Andrea Millan. All laboratory analyses were conducted by Marine Analytical Specialists located in Honolulu, HI (Labcode: HI 00009). This analytical laboratory possesses acceptable ratings from EPA-compliant proficiency and quality control testing.

B. RESULTS

1. Horizontal Stratification

Tables 1 and 2 show results of all water chemistry analyses for samples collected off the PRCCC site on May 17, 2017. Table 1 shows concentrations of dissolved nutrients in micromolar (µM) units; Table 2 shows concentrations in micrograms per liter (µg/L). Concentrations of eight dissolved nutrient constituents in surface and deep samples are plotted as functions of distance from the shoreline in Figure 2. Values of salinity, turbidity, Chl *a,* and temperature as functions of distance from shore are shown in Figure 3.

Several patterns of distribution are evident in Tables 1 and 2 and Figures 2 and 3. It can be seen in Figure 2 that the dissolved nutrients Si, NO_3^-, NH_4^+, PO_4^{3-}, TP and TN display elevated concentrations in the samples collected near the shoreline relative to the most seaward samples of all five three sampling transects. Salinity displays the opposite trend, with lower values (27-30‰) in samples nearest to the shoreline, and oceanic salinity of approximately 34.8‰ at the seaward ends of the transects (Figure 3). While the gradients of nutrients and salinity occurred at all sampling sites, the greatest peak in nutrients and lowest salinity of shoreline samples occurred at Transects 1 and 2 located at Sharks Cove. On Transect 2, salinity is low and nutrient values relatively high across the entire reef flat. Seaward of the juncture of the reef flat and the open ocean (~100 m from shore) salinity is essentially oceanic with values greater than 34.6‰.

These patterns of increasing salinity and decreasing nutrient concentrations with distance from shore are a result of concentrated input of groundwater to the ocean

at or near the shoreline throughout the region fronting the PRCCC site (no rainfall or surface drainage was occurring during the sampling). Low salinity groundwater, which typically contains high concentrations of Si, NO_3^-, and PO_4^{3-} percolates to the ocean at the shoreline, resulting in a nearshore zone of mixing. In many areas of the Hawaiian Islands, such groundwater percolation results in steep horizontal gradients of increasing salinity and decreasing nutrients with distance from shore.

Water chemistry parameters that are not associated with groundwater input (TON, TOP) typically do not show the same pattern of decreasing concentration with respect to distance from the shoreline as Si, NO_3^-, PO_4^{3-}, TP and TN. However, for the present data set at Pūpūkea, there are similar shoreline peaks of Total organic N and P at the shoreline (Figures 2 and 3, Tables 1 and 2).

Similar to the patterns of dissolved inorganic nutrients, the distribution of Chl *a* also displays peaks near the shoreline with steeply decreasing gradients with distance from shore on all three transects (Figure 3, Table 1). Beyond several meters from the shoreline on the two sampling transects near Sharks Cove (T-1, T-2) the concentration of Chl *a* in surface waters remained relatively constant across the sampling scheme (Figure 3). With the exception of samples collected within several meters of the shoreline on Transects 1 and 2 where turbidity was distinctly elevated, all values were below approximately 0.2 NTU (Table 1, Figure 3). Temperature showed distinctly lower values in the samples closest to the shoreline on Transect 2, which is likely a result of mixing of cooler groundwater with warmer ocean water near the shoreline (Table 1, Figure 3).

2. Vertical Stratification

The mix of groundwater and ocean water creates a buoyant surface lens of low salinity, high nutrient water that is evident throughout the nearshore waters fronting the project site (Tables 1 and 2). With the lack of physical mixing in terms of waves and currents, the stratified water column persists along the entire length of the sampling transects off of the PRCCC property. Tables 1 and 2 and Figures 2 and 3 show concentrations of water chemistry parameters as functions of distance from shore in samples collected from surface and bottom water just above the ocean floor. It can be seen in Tables 1 and 2 that for the inorganic nutrients that displayed distinct horizontal gradients (particularly Si, and NO_3^-), there is also distinct variation between surface and deep samples. Surface values of Si and NO_3^- were consistently higher than deep values, while salinity was lower in surface samples relative to deep samples from the same location. While the difference between surface and deep samples was clearly evident with Si, NO_3^- and TN, there is not clearly distinguishable differences in surface and deep concentrations of PO_4^{3-}, TON, TOP and TP.

Nutrient constituents not associated with groundwater input (NH_4^+, TON and TOP) do not exhibit any discernible relationship with respect to vertical stratification (Figure

3). Likewise, turbidity and Chl *a*, also showed no consistent trend with surface values not consistently elevated relative to bottom values (Figure 3).

3. Conservative Mixing Analysis

A useful treatment of water chemistry data for interpreting the extent of material input from land is application of a hydrographic mixing model. In the simplest form, such a model consists of plotting the concentration of a dissolved chemical species as a function of salinity (Officer 1979, Smith and Atkinson 1992, Dollar and Atkinson 1992). The concept of using such mixing models which scale nutrient concentrations to salinity has been recently used by the State of Hawaii Department of Health for establishing a unique set of water quality standards for the West Coast of the Island of Hawaii [Hawaii Administrative Rules, §11-54-06 (d)]. Unfortunately, similar standards have not be instituted for other areas of the State.

Comparison of the curves produced by the distribution of data with conservative mixing lines provides an indication of the origin and fate of the material in question. If the parameter in question displays purely conservative behavior (i.e., no input or removal from any process other than physical mixing), data points should fall on, or near, the conservative mixing line. If however, external material is added to the system through processes such as leaching of fertilizer nutrients to groundwater, data points will fall above the mixing line. If material is being removed from the system by processes such as biological uptake, data points will fall below the mixing line.

Figure 4 shows plots of the concentrations of Si, NO_3^-, PO_4^{3-}, and NH_4^+ as functions of salinity for the samples collected at each sampling station in May 2017. Each graph also shows conservative mixing lines constructed by connecting the end-member concentrations of open ocean water collected at the same time as the other water samples, and average groundwater concentration from the surface layer of monitoring well B-1 located upslope of the project area (see report by TNWRE [2017] for description of monitoring wells and water chemistry data).

Dissolved Si represents a check on the model as this material is present in high concentration in groundwater, but is not a major component of fertilizer. In addition, Si is not utilized rapidly within the nearshore environment by biological processes. It can be seen in Figure 4 that data points for all five transect sites fall in a linear array on the conservative mixing line. Linear regression of the concentrations of Si as a function of salinity indicates that for all five transects, there is a highly significant R^2 (proportion of variation explained) of 0.93 to 0.99 indicating that the concentration of Si is dependant on salinity. The Y-intercept of the regression of Si as a function of salinity can be interpreted as the expected concentration at a salinity of zero. As groundwater has salinity close to zero (Tables 1 and 2), the Y-intercept can be used to evaluate the relationship between upslope groundwater and

groundwater that is entering the ocean at the shoreline. For monitoring well B-1 sampled upslope of the PRCCC site, the average concentration of Si is 810 µM. The upper and lower 95% confidence limits of the Y-intercepts of the regression lines of Si vs. salinity for the transects are 570-682 µM for Transect 1, 642-748 µM for Transect 2, and 799-865 µM for Transect 3, 674-822 for Transect 4, and 452-617 for Transect 5.

Hence, it can be determined that the Y-intercepts for Transects 3 and 4 fall within the range encompassing the endpoint concentration from monitoring well B-1. On the other three transects there is some alteration of groundwater Si relative to groundwater from the monitoring well. On Transects 1, 2 and 5, slightly less Si is present than what would be expected if only groundwater with the same Si content as was sampled from monitoring well B-1was reaching the shoreline. The level of difference between the water measured in the nearshore ocean and the mixing line created using the monitoring well as an endpoint is evident in the position of the sample points from Transect sites 1, 2 and 5 below the mixing line in Figure 4.

Even though regression statistics indicate slight alteration in Si concentrations in the ocean relative to upslope groundwater at several sampling sites, such a pattern still supports the conclusion that Si is behaving as a conservative tracer and that well water sampled from the upslope well is similar in composition to groundwater entering the ocean off the PRCCC site.

The plots of NO_3^- versus salinity show a similar pattern as Si, although in a different direction. The data points for Transects 3 and 4 lie near the conservative mixing line, while the data points for Transects 1 and 2 prescribe a line that lies considerably above the mixing line at salinities less than 32‰. Linear regression of these data indicate significant R^2's of 0.86 for Transects 1 and 2, and 0.89 to 0.97 for Transects 3-5 indicating that the concentrations of NO_3^- in nearshore waters off the PRCCC site are a function of salinity.

The upper and lower confidence limits of the Y-intercepts for Transects 1 and 2 are 37-64 µM and 46-80 µM, respectively. As the average concentration of NO_3^- in monitoring well B-1 is 35 µM, it is apparent that the concentration of NO_3^- in groundwater entering the ocean at Sharks Cove is as high as approximately double that which is present in upslope groundwater. This result indicates that there is added subsidies of NO_3^- to groundwater from external sources between the monitoring wells and the ocean.

On Transects 3-5, however, the Y-intercepts for the regression of NO_3^- range from 13 to 30 µM, with none as high as 35 µM. These low values are evident in Figure 4 as all the points from these three transects fall just below the conservative mixing line. The lower concentrations of the Y-intercepts from these sites suggests that the groundwater reaching the ocean is of a slightly different (i.e., lower concentration) that was measured in monitoring well B-1. While the concentrations may be slightly lower than might be expected, it is apparent that there is no subsidies of NO_3^- to the

ocean from activities on land.

PO_4^{3-} is also a major component of fertilizer and sewage. However, PO_4^{-3} is usually not found to leach to groundwater to the extent of NO_3^-, owing to a high absorptive affinity of phosphorus in soils or rock. It can be seen in Figure 4 that most of the PO_4^{3-} data points fall in weakly linear clusters below the mixing lines. Only three of the five R^2's of regression of PO_4^{3-} vs. salinity are significant only on Transect 2, 3 and 4 (0.80, 0.43 and 0.83, respectively). The lack of significant regression between salinity and PO_4^{-3} on Transects 1 and 5 indicates that there is a much weaker relationship between groundwater input and the concentration of PO_4^{-3} in nearshore waters. The confidence limits of the Y-intercepts for all three transects with significant R's lie below the average concentration of monitoring well B-1 water (2.9 μM). Hence, these data indicate that there are no subsidies of PO_4^{3-} entering the nearshore environment from sources other than naturally occurring groundwater. Rather, the data indicate that there is removal of PO_4^{3-} from groundwater during transit from the upslope locations of the well and the ocean, or more likely as uptake by plants in the nearshore area.

The other form of dissolved inorganic nitrogen, NH_4^+, shows a different relationship than Si, NO_3^- and PO_4^{-3}. Plots of concentrations of NH_4^+ versus salinity exhibit no distinct linear trends with respect to salinity, although some of the highest concentrations on Transect 2 are at the lowest salinities (Figure 4). Linear regression of concentrations of NH_4^+ vs. salinity result in significant R^2's on four of the five transects, although on Transect 5 the relationship is positive, with highest concentration at the lowest salinity. The lack of consistent inverse relationships suggests that the source of most of the NH_4^+ in the ocean is not from the land but rather from biological processes occurring in the nearshore areas of Sharks Cove.

5. Compliance with DOH Criteria

Tables 1 and 2 also show values of State of Hawaii Department of Health (DOH) water quality standards for open coastal waters under "wet" and "dry" conditions. These criteria are applied depending upon whether the area is likely to receive less than (dry) or greater than (wet) 3 million gallons of groundwater and/or surface water input per mile per day. As it is not possible to accurately estimate groundwater and surface water discharge to make the determination of which criteria apply, both wet and dry standards are considered. DOH standards include specific criteria for three situations; criteria that are not to be exceeded during either10% or 2% of the time, and criteria that are not to be exceeded by the geometric mean of samples. With only a single sampling none of these criteria are statistically meaningful. However, comparing sample concentrations to these criteria provide an indication of whether water quality is near the stated specific criteria. Shaded values in Tables 1 and 2 show instances where measurements exceed the not to exceed the 2% of the time DOH standards under wet conditions, which represents the highest concentrations (most lenient) of the standards.

Inspection of Tables 1 and 2 indicate that most of the values for NO_3^- in the shoreline areas of Sharks Cove (Transect 1), and on the neighboring tidepool reef flat (Transect 2) exceeded the most lenient DOH standard. Beyond the reef flat, none of the measurements of any constituents exceeded the 2% wet DOH criteria.

As noted above, the category of water quality standards that are applicable for the area are "Open Coastal Waters." As the name implies, these standards apply to "open" waters that should be reasonably defined as "waters beyond the direct influence of land." In order to evaluate the effects of land uses on the nearshore ocean off the PRCCC site, the selected sampling regime collected water within a zone that extends from the shoreline to the open coastal ocean across a semi-confined reef flat. A consequence of the physical structure of the nearshore region of Transect 2 is that the reef crest serves to restrict circulation and flushing of the reef flat. As a result, the reef flat serves as a sink for dissolved material that reaches the marine environment through groundwater discharge at the shoreline. Hence, sampling was conducted within the region of ocean that is indeed directly influenced by land. If the monitoring protocol were changed to include only those sampling locations beyond the reef flat (i.e., true open coastal waters), which is completely valid with respect to meeting DOH regulatory compliance, little of the factors discussed above relating to the effects of activities on land to the nearshore ocean would not be observed.

Therefore, at the present time, while replicate data sets have not been collected in order to explicitly follow area specific DOH standards, it appears that existing baseline conditions of water quality at the PRCCC site exceed DOH water quality standards primarily on the reef flat, and not in true open coastal waters.

III. BIOTIC COMMUNITY STRUCTURE

A. METHODS

Biotic community structure of the marine environment was qualitatively assessed by investigators swimming throughout the offshore area from the shoreline to a water depth of approximately 40 feet off of each of the survey transect sites described in the sections above. During these reconnaissance swims, notes were taken on physical structure and marine species abundance. Numerous photographs were taken of typical features of all habitats to provide a descriptive representation of the area fronting the project site.

B. RESULTS

As with all reef communities in Hawaii, biotic composition, particularly in terms of coral assemblages are primarily determined by physical forces (primarily wave energy) that impact the area (Dollar 1982, Dollar and Tribble 1993, Fletcher et al.

2008, Grigg and Maragos 1974, Grigg 1983, Grigg 1988). As the Pūpūkea area is mostly an open coastal area directly exposed to long-period north and northwest swells during the winter months, the response to these forces is clearly reflected in physical composition and coral community structure.

Following is a description of the distinct biotopes, or zones that occur in the marine environment off of Sharks Cove, fronting the PRCCC site (a biotope is an area of uniform environmental conditions providing a living place for a specific assemblage of plants and animals). As reef building corals are of major interest, most of the following discussion focuses on the structure of reef coral communities.

1. Transect 1

The physical composition of Transect 1 is divided into three distinct zones. The inner region, extending from the inner shoreline of Sharks Cove to a distance of approximately 50 m offshore is composed primarily of large boulders, interspersed with rubble and sand channels (Figure 5). As this shallow area is regularly impacted by large waves during the winter, attached and unattached organisms are rare. While sparse in distribution, the only stony coral that was observed on the nearshore boulders was *Pocillopora meandrina*. This species has been documented to be a "pioneering species" in that it is able to colonize areas that are too physically harsh for most other species, and is typically found in wave-swept habitats similar to the boulder zone at Sharks Cove. The only other common benthic species is the soft octocoral *Sarcothelia edmondsoni*, which is purple in color, and occurs as flat patches on the upper surfaces of boulders.

At the seaward boundary of the boulder zone, bottom composition grades into a solid calcium carbonate (limestone) bench that is composed of fossil reef. A conspicuous feature of the limestone bench is the occurrence of numerous large erosional features that take the form of columns and jagged protuberances (Figure 6). These erosional features create a unique region of the highest rugosity (vertical relief) on the reef. As with the inner boulder zone, corals are relatively scarce, with the major occupants Pocillopora meandrina, along with small flat encrustations of *Porites* spp. and *Montipora* spp.

At a distance of approximately 100 m from shore, there is a sharp boundary in the form of a vertical scarp between the high rugosity zone and the outer reef platform (Figure 7). The outer reef platform, which is also formed from an eroded fossil reef, consists of a relatively flat bench without the erosional features of the high rugosity zone (Figure 8). The outer reef platform slopes gently to the seaward limit of the survey area at a depth of approximately 10 meters. As with the inner biotopes, coral colonization of the reef platform is restricted to hemispherical branching colonies of *Pocillopora meandrina*, and small colonies of corals that have flat encrusting or sturdy lobate growth forms (primarily *Porites, Montipora, Leptastrea and Pavona*)(see Figure 13 for photographs of all coral species observed during the

present surveys at Pūpūkea).

2. Transect 2.

Transect 2 differs in overall structure from the rest of the survey area in that it encompasses an area of shallow tidepools interspersed throughout a boulder covered raised platform (Figure 9). As the elevation of the raised platform is within the intertidal zone, the amount of water, and hence the size of the tide pools, varies as a function of tide. Biotic colonization of the floor of the tidepools is limited with little coral cover, likely as a result of extreme temperature and exposure to the atmosphere at low tidal stands. At the seaward boundary of the tidepools, small encrusting corals occur on the vertical surface. The sea urchin *Echinometra matheai*, which bores into limestone surfaces, occurs abundantly on the walls of the tidepools. On the seaward side of the tidepools, the physical structure of the marine habitats is similar to the outer reef platform at Transect 1.

3. Transects 3-5.

The physical and biotic structure of Transect 3, 4, and 5 is similar. The nearshore area is characterized by a cover of large boulders that extend from just seaward of the shoreline to a distance of approximately 100 meters from shore. The inner region of the boulder is devoid of most stony corals, but is colonized by abundant stands of the soft coral *Sarcothelia edmondsoni* (Figure 10).

The mid-reef zone consists of a similar boulder-covered bottom, although at the increased depth of 5-7 meters, there is colonization of a number of species of corals. These corals consist primarily of small encrusting colonies of *Porites* spp., *Montipora* spp. and *Pocillopora meandrina* (Figure 11). While rare, small colonies of *Pavona* spp., and *Leptastrea* spp. were also observed (Figure 13). The outer reef zone south of Sharks Cove extending to the offshore limits of the survey consisted of a flat platform colonized primarily by flat encrustations of *Porites* spp. (Figure 12).

No areas of extensive benthic alga growth or seagrass were observed in any of the survey areas. Qualitative observations of reef fish revealed several large schools of *Kuhlia sandvicensis* (*ʻāhole)* (Figure 5) and mixed Acanthurids (Figure 11) in the nearshore zones. On the outer reef zones, reef fish were not overly abundant.

In summary, the benthic communities off the proposed Pūpūkea Rural Community Commercial Center develop primarily in response to the physical forces associated with the seasonal occurrence of large surf. The exception is within the network of tidepools adjacent to Sharks Cove, where biotic composition is limited by high temperature from solar heating, and exposure to the atmosphere during low tides. Between these extreme physical stresses, all biotic communities within the area can be viewed as limited by physical control compared to other areas in the Hawaiian Islands.

4. Incidental Sightings of Threatened and Endangered Species

Several species of marine animals that occur in Hawaiian waters have been declared threatened or endangered by Federal jurisdiction. The threatened green sea turtle (*Chelonia mydas*) occurs commonly throughout the Hawaiian Islands, and are frequently observed throughout the north shore of Oahu. The endangered hawksbill turtle (*Eretmochelys imbricata*) is known infrequently from Hawaiian waters. Several green sea turtles were observed within the survey area over the course of the present study. No hawksbill turtles were observed during the course of underwater surveys.

Populations of the endangered humpback whale (*Megaptera novaeangliae*) winter in the Hawaiian Islands from December to April. The present survey was conducted in May when whales are absent from Hawaiian waters. During the season when present, humpback whales, as well as other cetaceans are common off the coastline of Oahu. The Hawaiian monk seal, (*Monachus schauinslandi*) is an endangered earless seal that is endemic to the waters off the Hawaiian Islands. Monk seals commonly haul out of the water onto sandy beaches to rest. No seals were observed during the present survey work.

IV. DISCUSSION and CONCLUSIONS

The purpose of this baseline survey is to provide the information to make valid evaluations of the potential for impact to the marine environments from the proposed Pūpūkea Rural Community Commercial Center Project. The information collected for this study provides the basis to understand the processes that are presently operating in the nearshore ocean. Based on these data, it is possible to address any concerns that might be raised in the planning process.

The proposed Pūpūkea Rural Community Commercial Center Project does not include any plans for any direct alteration of the shoreline or offshore areas. Therefore, potential impacts to the marine environment can only be considered from activities on land that may result in delivery of materials (fresh water, sediment, nutrients, and potentially toxic materials) to the ocean through infiltration to groundwater, surface runoff and wind transport. The project may have an impact on groundwater as a result of: 1) by the additional consumption of drinking water from the Honolulu Board of Water Supply (BWS) system; 2) by the implementation of the drainage system infrastructure; and (3) by the additional generation of wastewater that will be treated and disposed of onsite. Tom Nance Water Resource Engineering (NWRE) has prepared a report entitled "Assessment of Potential Impacts on Water Resources of the Proposed Pūpūkea Rural Community Commercial Center," dated September 2017. This report provides a detailed depiction of the

potential impacts to water resources from the project, as well as estimated changes in groundwater quantity and quality owing to the project. The main conclusions of the TNWRE report are summarized below:

The additional draw of drinking water from the BWS wells (~6,500 GPD) is well within the hydraulic capacity of the BWS system, and is not considered to be significant.

Use of bioswales and other BMPs and the installation of subsurface detention storage will substantially reduce the suspended and bedload sediment that currently is carried into the marine environment by surface runoff. This retained water would eventually percolate to the groundwater below. In the process of percolation to groundwater and the subsequent lateral travel to discharge into the marine environment, nitrogen and phosphorus concentrations will be significantly reduced by denitrification and absorption processes. *In all respects, the project's proposed drainage system will have a significant environmental benefit in comparison to the present use of the property (*italics added*)*.

The onsite wastewater treatment system proposed for the Pūpūkea Rural Community Commercial Center Project will result in a net increase in the production of wastewater of approximately 6,920 GPD. The resulting net increase in total nitrogen and total phosphorus to the groundwater flowing beneath the project site is approximated with the following assumptions:

- The wastewater will contain an average concentration of nitrogen and phosphorus of 60 and 12 mg/L, respectively.

- Nutrient removal rates in the project's Aerobic Treatment Unit (ATU) will be about 50% for nitrogen and 25% for phosphorus, resulting in residual concentrations of about 30 and 9.0 mg/L respectively in the treated wastewater. This is a conservative assumption as the actual removal rates are likely to be greater.

- Further nutrient removal will occur during the disposal in the absorption beds, downward percolation through the vadose zone (including travel through 15 feet of clay); and movement with groundwater to discharge into the marine environment. These removal rates are conservatively approximated to be about 80% for nitrogen and 90% for phosphorus. Based on these assumptions, the residual concentrations of wastewater ultimately discharging into the marine environment would be 6.0 mg/L for nitrogen and 0.90 mg/L for phosphorus. For the 6,920 gallons of treated wastewater, these additions would be equivalent to increases of 0.35 pounds per day of nitrogen and 0.051 pounds per day of phosphorus.

- Based on groundwater recharge calculations the total groundwater flow rate in the aquifer is 50 MGD (million gallons per day), equivalent to 5.5 MGD per coastal mile.

- The project site mauka of Kamehameha Highway spans 560 feet of coastline. Groundwater that flows under the site will influence about 760 feet of shoreline. This groundwater flow is approximately 790,000 GPD.

- Concentrations of total nitrogen (TN) and total phosphorus (TP) in groundwater presently flowing beneath the site and discharging into the marine environment are assumed to be the averages of the top samples in the B-7 monitor well (Table 3 in TNWRE report): 88.3 μM (1.24 mg/L) for TN; and 3.58 μM (0.111mg/L) for TP.

- For these groundwater nutrient concentrations, and a groundwater flow rate of 790,000 GPD, the existing daily discharges of total nitrogen and total phosphorus into the marine environment amount to 8.16 and 0.73 pounds per day, respectively.

- For the calculated nutrient loading as a result of the project's net increase of 6,920 GPD of treated wastewater, the addition of TN and TP to the marine environment would be an increase of 4.3% and 7.0%, respectively, over 760 feet of the coastline fronting the property.

Inspection of Table 1 and Figure 2 of this report indicate that the concentrations of TN at the point of groundwater discharge at the shoreline range from a peak of 30 μM at Transect 2 to a low of 6.5 μM at Transect 4. The corresponding concentrations of TP are 0.66 μM at Transect 2 and 0.35 μM at Transects 4 and 5. Increasing the concentration of TN at the shoreline by 4.3% from existing conditions would result in a maximum value of about 31.3 μM and a minimum of 6.8 μM. Correspondingly, these increases in groundwater nutrients from the project would result in maximum and minimum values of TP at the shoreline of 0.71 μM and 0.37 μM, respectively. These small changes, which peak at about 1.3 μM for TN and 0.05 μM for TP are likely within the natural variability of the groundwater discharge at the shoreline, and do not represent a significant change in the composition of such discharge.

In addition, plots of TN and TP as functions of distance from shore (Figure 2) reveal that within 5 m of the shoreline, the concentrations of all nutrients drops from the peak values at the shoreline to essentially constant open coastal ocean values across the rest of the reef tract. These steep declines are the result of rapid mixing and dilution of the relatively small amount of groundwater discharging at the shoreline with large volumes of coastal ocean water. The small increases in groundwater nutrient concentrations attributable to the project would be mixed to background ocean levels in a narrow zone near the shoreline that is essentially devoid of benthic biota owing to other physical factors, primarily wave energy,

which occurs regularly throughout the area. With the observed steep horizontal gradients near the shoreline, the projected increases in nutrient concentration in groundwater over existing conditions would likely be undetectable in the marine environment off the project site at distances from the shoreline where marine communities occur.

All of these conclusions indicate that the proposed Pūpūkea Rural Community Commercial Center will not have a measureable effect on water quality in the coastal ocean offshore of the project. Such projected increases would not alter the existing situation with respect to compliance with area specific DOH limits. This is particularly true in the region of Transect 2 (Sharks Cove), where presently there are groundwater nitrogen subsidies from land on the order of 100% over background conditions.

V. SUMMARY

1. Evaluation of nearshore water chemistry and benthic biotic community structure off the proposed Pūpūkea Rural Community Commercial Center on the North Shore of Oahu, were carried out in May 2017. Fifty-seven water samples were collected at five sites located in the vicinity of the project. Water samples were collected on transects perpendicular to shore, extending from the shoreline to a distance of up to 300 meters offshore. Samples were also collected from monitor wells upslope of the project site in order to determine chemical composition of groundwater mauka of the project site, and near the shoreline. Analysis of fourteen water chemistry constituents included all specific constituents in DOH water quality standards.

2. Dissolved nutrients (Si, NO_3^-, NH_4^+, PO_4^{3-}, TN and TP) displayed horizontal gradients at all transect sites with highest values closest to shore and lowest values at the most seaward sampling locations. Correspondingly, salinity was lowest closest to the shoreline, and increased with distance from shore. These patterns are indicative of groundwater efflux at the shoreline, producing a zone of mixing where nearshore waters are a combination of ocean water and groundwater. During the May 2017 sampling, physical forces (waves) were minimal resulting in a surface layer of low salinity-high nutrient water that was detectable up to 300 m from shore. The steepest gradients and highest nutrient concentrations occurred in the nearshore areas of the tidepools to the south of Sharks Cove. During periods of higher wave energy, which is a consistent seasonal winter occurrence, the nearshore zone of mixing would be smaller than measured during the survey in May.

3. Chl *a* and turbidity were also elevated in nearshore samples with decreasing values moving seaward.

4. Application of a hydrographic mixing model to the water chemistry data was used to indicate if increased nutrient concentrations are the result of mixing of

natural groundwater with oceanic water, or are the result of inputs to groundwater from activities on land. The model indicates that at the time of sampling there were external subsidies of NO_3^- nitrogen to the ocean at Transect site 1 (Sharks Cove) and site 2 (Tidepools on reef flat). These subsidies represents an increase of NO_3^- on the order of 100% over natural groundwater. Similar subsidies of NO_3^- were not evident at Transects 3, 4 and 5 located to the south of the project site. The discernible nutrient subsidy in the nearshore groundwater-ocean water mixing zone indicates that there is presently input to the ocean at Sites 1 and 2 from land-derived sources of nutrients upslope of the site. There was no comparable subsidy to groundwater input of PO_4^{-3} from activities on land.

5. Evaluating water chemistry from the single sampling in May 2017 using DOH "open coastal waters" indicates that concentrations in the nearshore zone, particularly in the tidepools adjacent to Sharks Cove, exceed the least stringent criteria as a result of input of groundwater at the shoreline. Beyond the zone of groundwater mixing with ocean water, concentrations of water chemistry constituents at all transect sites were generally below DOH criteria.

6. Qualitative depiction of the benthic marine communities off the project site reveal a zonation structure that reflects the dominant physical control of seasonal wave impacts. The nearshore zones were characterized by essentially barren boulders and reef platforms. Mid-reef and outer reef zones were colonized by a variety of Hawaii reef corals, growing primarily as small encrustations or lobate forms. No expansive areas of benthic algae or seagrass were noted. Unattached benthos (e.g., sea urchins) were also rare throughout the reef. Several large schools of fish were observed in the nearshore zones, although reef fish in general were not overly abundant on the mid and outer reef zones.

7. Evaluations of changes to groundwater resulting from the project performed by Tom Nance Water Resources Engineering indicate that there will be a potential increase of groundwater flow of about 6,920 GPD over existing conditions along a 760-foot wide coastal segment downslope from the project site. Accompanying the increase in flow rates will be relatively small increases in nutrient loading of 4.3% and 7.0% for nitrogen and phosphorus, respectively. As these projected increases are of such a small magnitude, and nearshore waters are consistently well-mixed, there is little likelihood that the increased concentrations will result in any detectable changes in water quality beyond several meters of the shoreline. While survey results from samples collected during calm conditions in May revealed distinct gradients in water chemistry constituents, it is likely that such gradients would not be detectable

during the winter season, when energy from wave action consistently mixes nearshore waters to a far larger extent.

7. Overall, results of the water chemistry analysis, along with an evaluation of potential changes to groundwater quality and flux, indicate changes in land use associated with the project should not change water quality of the offshore area to any discernible extent. As a result, there should be no potential for changes to biotic communities which inhabit the area beyond the influence of land-derived groundwater.

8. The water quality study conducted for this report can serve as an initial baseline for any monitoring programs that may be required for the project.

REFERENCES CITED

Dollar, S.J. 1982. Wave stress and coral community structure in Hawaii. Coral Reefs 1:71-81.

Dollar, S.J. and G.W. Tribble. 1993. Recurrent storm disturbance and recovery: a long-term study of coral communities in Hawaii. Coral Reefs. 12:223-233.

Dollar, S. J. and M. J. Atkinson. 1992. Effects of nutrient subsidies from groundwater to nearshore marine ecosystems off the Island of Hawaii. Est. Coast. Shelf Sci. 35:409-424.

Fletcher, C.H. and 15 others. 2008. Geology of Hawaii Reefs. In Coral Reefs of the USA. B.M. Reigl and R.E. Dodge (eds). Springer Science + Business Media B.V.

Grasshoff, K. 1983. Methods of seawater analysis. Verlag Chemie, Weinheim, 419 pp.

Grigg, R.W. and J.E. Maragos. 1974. Recolonization of hermatypic corals on submerged lava flows in Hawaii. Ecology. 55:387-395.

Grigg, R.W. 1983. Community structure, succession and development of coral reefs in Hawaii. Mar. Ecol. Prog. Ser. 11:1-14.

Officer, C. B. 1979. Discussion of the behavior of nonconservative dissolved constituents in estuaries. Est. Coast. Mar. Sci. 9:569-576.

Smith, S. V. and M. J. Atkinson 1993. Mass balance analysis of C, N, and P fluxes in coastal water bodies, including lagoons. Coastal Lagoon Processes. (ed) B. Kjerfve, Elsevier Oceanography Series, 60. pp. 123-145.

Strickland J. D. H. and T. R. Parsons. 1968. A practical handbook of sea-water analysis. Fisheries Research Bd. of Canada, Bull. 167. 311 p.

Tom Nance Water Resource Engineering. 2017. Assessment of the potential impacts on water resources of the proposed Pūpūkea Rural Community Commercial Center. Prepared for Group 70, International, Inc.

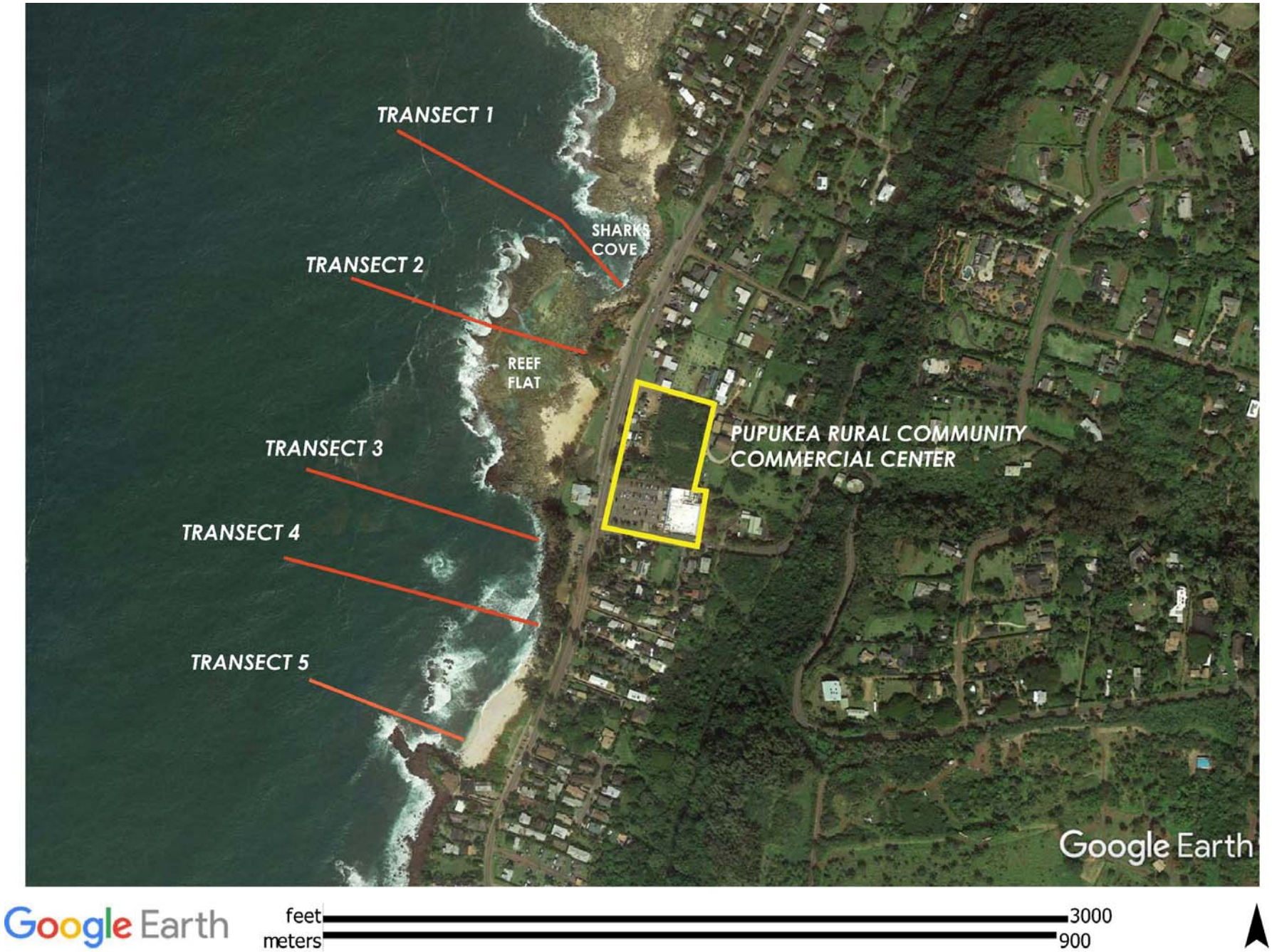


FIGURE 1. Aerial view of Pupukea, North Shore Oahu, showing location of proposed Pupukea Rural Community Commercial Center. Also shown are locations of five water sampling transects that extended from the shoreline to open coastal waters. Transect 1 bisected Sharks Cove; Transect 2 extended across the reef flat downslope from the northern end of the proposed development; Transect 3 originated off the southern boundary of the property; Transect 4 originated at the mouth of the stream draining upslope areas; Transect 5 served as a control off the southern end of Three Tables Beach. Water samples were collected at 6-10 stations along transects.

TABLE 1. Water chemistry measurements (with nutrients reported in micromolar units) from ocean water samples collected in the vicinity of the Pupukea Commercial Property, Oahu, Hawaii on May 17, 2017. Abbreviations as follows: DFS=distance from shore; TURB = turbidity; CHL *a* = chlorophyll *a*; TEMP = temperture; O2 = dissolved oxygen; S=surface; D=deep; BDL=below detection limit. Also shown are the State of Hawaii, Department of Health (DOH) "not to exceed more than 10% of the time" and "not to exceed more than 2% of the time" water quality standards for open coastal waters under "dry" and "wet" conditions. Shaded shaded values exceed DOH 2% "wet" standards. For transect and sampling site locations, see Figure 1.

Transect	DFS (m)	PO_4^{3-} (µM)	NO_3^- (µM)	NH_4^+ (µM)	Si (µM)	TOP (µM)	TON (µM)	TP (µM)	TN (µM)	TURB (NTU)	SALT (‰)	Temp (°C)	pH (rel)	Chl-a (µg/L)	Diss. Oxy (% sat.)
TRANSECT 1	0	0.14	8.11	1.32	83.92	0.32	13.68	0.46	23.11	0.25	30.24	25.88	8.281	2.477	118.55
	1	0.09	2.49	2.24	56.75	0.29	10.70	0.38	15.43	0.53	32.35	25.60	8.277	0.802	118.81
	5	0.09	2.15	0.80	53.62	0.25	9.84	0.34	12.79	0.20	32.54	25.55	8.247	0.304	116.01
	15	0.11	1.83	0.59	53.89	0.21	8.37	0.32	10.79	0.19	32.40	25.55	8.235	0.218	115.90
	45S	0.15	1.31	1.02	34.09	0.23	9.82	0.38	12.15	0.13	33.41	25.73	8.207	0.140	105.60
	45D	0.14	0.60	0.41	17.20	0.22	8.54	0.36	9.55	0.10	34.41	25.81	8.204	0.171	103.09
	100S	0.14	0.95	0.47	24.94	0.20	7.33	0.34	8.75	0.10	34.01	25.75	8.197	0.156	103.29
	100D	0.13	0.26	0.49	9.74	0.22	7.90	0.35	8.65	0.11	34.63	25.83	8.208	0.179	99.81
	130S	0.14	0.84	0.57	22.74	0.19	8.20	0.33	9.61	0.12	34.05	25.79	8.201	0.140	100.11
	130D	0.13	0.21	0.43	7.09	0.19	8.16	0.32	8.80	0.10	34.74	25.82	8.195	0.109	97.78
	225S	0.14	0.55	0.53	13.92	0.19	7.36	0.33	8.44	0.08	34.59	25.80	8.192	0.125	98.85
	225D	0.12	0.07	0.40	5.45	0.18	7.41	0.30	7.88	0.08	34.77	25.66	8.200	0.117	101.57
TRANSECT 2	0	0.41	16.29	2.57	156.73	0.24	11.13	0.65	29.99	0.35	27.38	24.29	8.115	2.041	85.21
	2	0.29	10.02	2.89	122.91	0.37	15.04	0.66	27.95	0.36	29.08	24.79	8.112	1.449	91.22
	5	0.11	3.03	0.84	55.51	0.24	9.00	0.35	12.87	0.23	31.88	24.79	8.107	0.982	85.33
	10	0.11	2.19	0.75	44.89	0.21	9.27	0.32	12.21	0.19	32.42	24.83	8.114	0.382	88.80
	25	0.12	2.57	0.78	46.16	0.22	8.74	0.34	12.09	0.16	32.57	25.43	8.138	0.257	96.61
	50	0.14	3.78	0.66	58.30	0.21	7.61	0.35	12.05	0.14	32.03	25.50	8.143	0.218	86.79
	70	0.19	3.46	0.75	48.66	0.20	9.84	0.39	14.05	0.17	32.77	25.43	8.123	0.374	86.68
	100	0.08	3.41	0.46	4.33	0.25	5.57	0.33	9.44	0.11	34.81	25.90	8.343	0.179	127.69
	130S	0.11	0.78	0.31	16.72	0.21	8.36	0.32	9.45	0.14	34.96	25.83	8.200	0.195	98.49
	130D	0.10	BDL	0.38	5.15	0.18	7.97	0.28	8.38	0.08	34.63	25.82	8.201	0.132	100.04
	190S	0.12	0.28	0.33	5.55	0.18	7.56	0.30	8.17	0.11	34.67	25.83	8.203	0.125	97.05
	190D	0.11	0.23	0.32	4.63	0.18	6.98	0.29	7.53	0.07	34.78	25.70	8.210	0.156	102.81
TRANSECT 3	0	0.18	1.44	0.25	53.65	0.18	7.79	0.36	9.48	0.13	32.76	none	8.253	0.288	none
	2	0.61	1.74	1.31	52.98	0.12	20.35	0.73	23.40	0.12	32.82	none	8.250	0.413	none
	10S	0.20	1.36	0.40	41.86	0.16	7.76	0.36	9.52	0.12	33.22	25.83	8.238	0.187	108.57
	10D	0.15	1.06	0.26	34.40	0.18	10.91	0.33	12.23	0.20	33.60	25.95	8.231	0.179	105.28
	50S	0.16	1.08	0.32	31.33	0.17	9.93	0.33	11.33	0.15	33.60	25.85	8.236	0.156	107.51
	50D	0.12	0.23	0.34	11.02	0.19	9.96	0.31	10.53	0.11	34.63	25.92	8.231	0.140	103.73
	100S	0.10	0.69	0.37	19.63	0.23	9.93	0.33	10.99	0.11	34.16	25.93	8.224	0.117	103.66
	100D	0.12	0.15	0.38	7.09	0.21	9.67	0.33	10.20	0.09	34.67	25.84	8.213	0.140	100.17
	200S	0.13	0.24	0.37	9.80	0.22	5.81	0.35	6.42	0.07	34.60	25.87	8.216	0.140	100.42
	200D	0.06	BDL	0.39	4.63	0.28	6.23	0.34	6.62	0.10	34.78	25.71	8.219	0.148	100.39
	300S	0.12	0.10	0.43	8.00	0.23	5.87	0.35	6.40	0.10	34.67	25.77	8.213	0.109	99.18
	300D	0.10	BDL	0.40	4.13	0.24	5.24	0.34	5.65	0.09	34.85	25.64	8.222	0.125	102.17
TRANSECT 4	0	0.16	0.60	0.39	25.87	0.19	5.48	0.35	6.47	0.11	33.81	26.16	8.262	0.195	112.01
	5	0.16	0.57	0.27	24.86	0.19	5.51	0.35	6.35	0.12	33.84	26.15	8.267	0.218	111.15
	35S	0.14	0.60	0.26	22.45	0.22	5.48	0.36	6.34	0.11	33.87	26.11	8.252	0.179	110.66
	35D	0.16	0.63	0.35	22.09	0.21	5.22	0.37	6.20	0.13	33.88	26.08	8.257	0.164	109.37
	75S	0.14	0.61	0.24	18.81	0.23	5.29	0.37	6.14	0.15	33.85	26.16	8.242	0.148	109.84
	75D	0.12	0.26	0.25	8.87	0.25	4.87	0.37	5.38	0.13	34.63	25.95	8.237	0.187	106.98
	100S	0.14	0.72	0.33	24.18	0.26	5.10	0.40	6.15	0.13	34.05	26.07	8.258	0.156	105.60
	100D	0.13	0.33	0.24	6.72	0.27	5.33	0.40	5.90	0.07	34.56	25.88	8.233	0.132	104.53
	280S	0.10	0.02	0.24	4.16	0.32	5.48	0.42	5.74	0.08	34.81	25.86	8.224	0.117	99.33
	280D	0.10	BDL	0.25	3.23	0.25	5.14	0.35	5.40	0.08	34.96	25.78	8.224	0.109	101.50
	375S	0.10	BDL	0.24	3.69	0.23	5.26	0.33	5.50	0.10	34.74	25.88	8.222	0.093	98.14
	375D	0.12	BDL	0.24	3.26	0.21	6.06	0.33	6.31	0.06	34.85	25.76	8.226	0.125	99.94
TRANSECT 5	0	0.13	0.32	0.29	10.95	0.20	8.61	0.33	9.22	0.27	34.34	26.70	8.299	0.257	105.67
	1	0.14	0.36	0.31	10.69	0.21	8.30	0.35	8.97	0.32	34.38	26.67	8.284	0.257	107.35
	5	0.14	0.32	0.30	10.78	0.21	7.04	0.35	7.66	0.26	34.31	26.60	8.299	0.280	110.19
	50S	0.14	0.26	0.36	7.56	0.22	7.50	0.36	8.12	0.20	34.52	26.42	8.266	0.195	107.60
	50D	0.14	0.24	0.50	7.86	0.22	7.30	0.36	8.04	0.18	34.56	26.21	8.279	0.164	110.73
	130S	0.14	0.22	0.48	7.31	0.24	7.40	0.38	8.10	0.18	34.56	26.23	8.264	0.132	108.26
	130D	0.14	0.04	0.45	4.45	0.22	5.95	0.36	6.44	0.10	34.79	25.91	8.250	0.156	105.17
	185S	0.13	0.09	0.53	5.67	0.23	5.81	0.36	6.43	0.11	34.68	25.99	8.247	0.109	100.63
	185D	0.12	0.02	0.48	3.81	0.23	6.15	0.35	6.65	0.16	34.75	25.85	8.242	0.117	102.04
DOH WQS	DRY	10%	0.71	0.36				0.96	12.86	0.50	*	**	***	0.50	****
		2%	1.43	0.64				1.45	17.86	1.00				1.00	
	WET	10%	1.00	0.61				1.29	17.85	1.25	*	**	***	0.90	****
		2%	1.78	1.07				1.93	25.00	2.00				1.75	

* Salinity shall not vary more than ten percent form natural or seasonal changes considering hydrologic input and oceanographic conditions.
** Temperature shall not vary by more than one degree C. from ambient conditions.
***pH shall not deviate more than 0.5 units from a value of 8.1.
****Dissolved Oxygen not to be below 75% saturation.

TABLE 2. Water chemistry measurements (with nutrients reported as micrograms per liter) from ocean water samples collected in the vicinity of the Pupukea Commercial Property, Oahu, Hawaii on May 17, 2017. Abbreviations as follows: DFS=distance from shore; TURB = turbidity; CHL *a* = chlorophyll *a*; TEMP = temperture; O2 = dissolved oxygen; S=surface; D=deep; BDL=below detection limit. Also shown are the State of Hawaii, Department of Health (DOH) "not to exceed more than 10% of the time" and "not to exceed more than 2% of the time" water quality standards for open coastal waters under "dry" and "wet" conditions. Shaded shaded values exceed DOH 2% "wet" standards. For transect and sampling site locations, see Figure 1.

Transect	DFS (m)	PO_4^{3-} (µg/L)	NO_3^- (µg/L)	NH_4^+ (µg/L)	Si (µg/L)	TOP (µg/L)	TON (µg/L)	TP (µg/L)	TN (µg/L)	TURB (NTU)	SALT (‰)	Temp (°C)	pH (rel)	Chl-a (µg/L)	Diss. Oxy (% sat.)
TRANSECT 1	0	4.34	113.54	18.48	2349.8	9.92	191.52	14.26	323.54	0.25	30.24	25.88	8.281	2.477	118.55
	1	2.79	34.86	31.36	1589.0	8.99	149.80	11.78	216.02	0.53	32.35	25.60	8.277	0.802	118.81
	5	2.79	30.10	11.20	1501.4	7.75	137.76	10.54	179.06	0.20	32.54	25.55	8.247	0.304	116.01
	15	3.41	25.62	8.26	1508.9	6.51	117.18	9.92	151.06	0.19	32.40	25.55	8.235	0.218	115.90
	45S	4.65	18.34	14.28	954.52	7.13	137.48	11.78	170.10	0.13	33.41	25.73	8.207	0.140	105.60
	45D	4.34	8.40	5.74	481.60	6.82	119.56	11.16	133.70	0.10	34.41	25.81	8.204	0.171	103.09
	100S	4.34	13.30	6.58	698.32	6.20	102.62	10.54	122.50	0.10	34.01	25.75	8.197	0.156	103.29
	100D	4.03	3.64	6.86	272.72	6.82	110.60	10.85	121.10	0.11	34.63	25.83	8.208	0.179	99.81
	130S	4.34	11.76	7.98	636.72	5.89	114.80	10.23	134.54	0.12	34.05	25.79	8.201	0.140	100.11
	130D	4.03	2.94	6.02	198.52	5.89	114.24	9.92	123.20	0.10	34.74	25.82	8.195	0.109	97.78
	225S	4.34	7.70	7.42	389.76	5.89	103.04	10.23	118.16	0.08	34.59	25.80	8.192	0.125	98.85
	225D	3.72	0.98	5.60	152.60	5.58	103.74	9.30	110.32	0.08	34.77	25.66	8.200	0.117	101.57
TRANSECT 2	0	12.71	228.06	35.98	4388.4	7.44	155.82	20.15	419.86	0.35	27.38	24.29	8.115	2.041	85.21
	2	8.99	140.28	40.46	3441.5	11.47	210.56	20.46	391.30	0.36	29.08	24.79	8.112	1.449	91.22
	5	3.41	42.42	11.76	1554.3	7.44	126.00	10.85	180.18	0.23	31.88	24.79	8.107	0.982	85.33
	10	3.41	30.66	10.50	1256.9	6.51	129.78	9.92	170.94	0.19	32.42	24.83	8.114	0.382	88.80
	25	3.72	35.98	10.92	1292.5	6.82	122.36	10.54	169.26	0.16	32.57	25.43	8.138	0.257	96.61
	50	4.34	52.92	9.24	1632.4	6.51	106.54	10.85	168.70	0.14	32.03	25.50	8.143	0.218	86.79
	70	5.89	48.44	10.50	1362.5	6.20	137.76	12.09	196.70	0.17	32.77	25.43	8.123	0.374	86.68
	100	2.48	47.74	6.44	121.24	7.75	77.98	10.23	132.16	0.11	34.81	25.90	8.343	0.179	127.69
	130S	3.41	10.92	4.34	468.16	6.51	117.04	9.92	132.30	0.14	34.96	25.83	8.200	0.195	98.49
	130D	3.10	BDL	5.32	144.20	5.58	111.58	8.68	117.32	0.08	34.63	25.82	8.201	0.132	100.04
	190S	3.72	3.92	4.62	155.40	5.58	105.84	9.30	114.38	0.11	34.67	25.83	8.203	0.125	97.05
	190D	3.41	3.22	4.48	129.64	5.58	97.72	8.99	105.42	0.07	34.78	25.70	8.210	0.156	102.81
TRANSECT 3	0	5.58	20.16	3.50	1502.2	5.58	109.06	11.16	132.72	0.13	32.76	none	8.253	0.288	none
	2	18.91	24.36	18.34	1483.4	3.72	284.90	22.63	327.60	0.12	32.82	none	8.250	0.413	none
	10S	6.20	19.04	5.60	1172.1	4.96	108.64	11.16	133.28	0.12	33.22	25.83	8.238	0.187	108.57
	10D	4.65	14.84	3.64	963.20	5.58	152.74	10.23	171.22	0.20	33.60	25.95	8.231	0.179	105.28
	50S	4.96	15.12	4.48	877.24	5.27	139.02	10.23	158.62	0.15	33.60	25.85	8.236	0.156	107.51
	50D	3.72	3.22	4.76	308.56	5.89	139.44	9.61	147.42	0.11	34.63	25.92	8.231	0.140	103.73
	100S	3.10	9.66	5.18	549.64	7.13	139.02	10.23	153.86	0.11	34.16	25.93	8.224	0.117	103.66
	100D	3.72	2.10	5.32	198.52	6.51	135.38	10.23	142.80	0.09	34.67	25.84	8.213	0.140	100.17
	200S	4.03	3.36	5.18	274.40	6.82	81.34	10.85	89.88	0.07	34.60	25.87	8.216	0.140	100.42
	200D	1.86	BDL	5.46	129.64	8.68	87.22	10.54	92.68	0.10	34.78	25.71	8.219	0.148	100.39
	300S	3.72	1.40	6.02	224.00	7.13	82.18	10.85	89.60	0.10	34.67	25.77	8.213	0.109	99.18
	300D	3.10	BDL	5.60	115.64	7.44	73.36	10.54	79.10	0.09	34.85	25.64	8.222	0.125	102.17
TRANSECT 4	0	4.96	8.40	5.46	724.36	5.89	76.72	10.85	90.58	0.11	33.81	26.16	8.262	0.195	112.01
	5	4.96	7.98	3.78	696.08	5.89	77.14	10.85	88.90	0.12	33.84	26.15	8.267	0.218	111.15
	35S	4.34	8.40	3.64	628.60	6.82	76.72	11.16	88.76	0.11	33.87	26.11	8.252	0.179	110.66
	35D	4.96	8.82	4.90	618.52	6.51	73.08	11.47	86.80	0.13	33.88	26.08	8.257	0.164	109.37
	75S	4.34	8.54	3.36	526.68	7.13	74.06	11.47	85.96	0.15	33.85	26.16	8.242	0.148	109.84
	75D	3.72	3.64	3.50	248.36	7.75	68.18	11.47	75.32	0.13	34.63	25.95	8.237	0.187	106.98
	100S	4.34	10.08	4.62	677.04	8.06	71.40	12.40	86.10	0.13	34.05	26.07	8.258	0.156	105.60
	100D	4.03	4.62	3.36	188.16	8.37	74.62	12.40	82.60	0.07	34.56	25.88	8.233	0.132	104.53
	280S	3.10	0.28	3.36	116.48	9.92	76.72	13.02	80.36	0.08	34.81	25.86	8.224	0.117	99.33
	280D	3.10	BDL	3.50	90.44	7.75	71.96	10.85	75.60	0.08	34.96	25.78	8.224	0.109	101.50
	375S	3.10	BDL	3.36	103.32	7.13	73.64	10.23	77.00	0.10	34.74	25.88	8.222	0.093	98.14
	375D	3.72	BDL	3.36	91.28	6.51	84.84	10.23	88.34	0.06	34.85	25.76	8.226	0.125	99.94
TRANSECT 5	0	4.03	4.48	4.06	306.60	6.20	120.54	10.23	129.08	0.27	34.34	26.70	8.299	0.257	105.67
	1	4.34	5.04	4.34	299.32	6.51	116.20	10.85	125.58	0.32	34.38	26.67	8.284	0.257	107.35
	5	4.34	4.48	4.20	301.84	6.51	98.56	10.85	107.24	0.26	34.31	26.60	8.299	0.280	110.19
	50S	4.34	3.64	5.04	211.68	6.82	105.00	11.16	113.68	0.20	34.52	26.42	8.266	0.195	107.60
	50D	4.34	3.36	7.00	220.08	6.82	102.20	11.16	112.56	0.18	34.56	26.21	8.279	0.164	110.73
	130S	4.34	3.08	6.72	204.68	7.44	103.60	11.78	113.40	0.18	34.56	26.23	8.264	0.132	108.26
	130D	4.34	0.56	6.30	124.60	6.82	83.30	11.16	90.16	0.10	34.79	25.91	8.250	0.156	105.17
	185S	4.03	1.26	7.42	158.76	7.13	81.34	11.16	90.02	0.11	34.68	25.99	8.247	0.109	100.63
	185D	3.72	0.28	6.72	106.68	7.13	86.10	10.85	93.10	0.16	34.75	25.85	8.242	0.117	102.04
DOH WQS	DRY	10%	10.00	5.00				30.00	180.00	0.50	*	**	***	0.50	****
		2%	20.00	9.00				45.00	250.00	1.00				1.00	
	WET	10%	14.00	8.50				40.00	250.00	1.25	*	**	***	0.90	****
		2%	25.00	15.00				60.00	350.00	2.00				1.75	

* Salinity shall not vary more than ten percent form natural or seasonal changes considering hydrologic input and oceanographic conditions.
** Temperature shall not vary by more than one degree C. from ambient conditions.
***pH shall not deviate more than 0.5 units from a value of 8.1.
****Dissolved Oxygen not to be below 75% saturation.

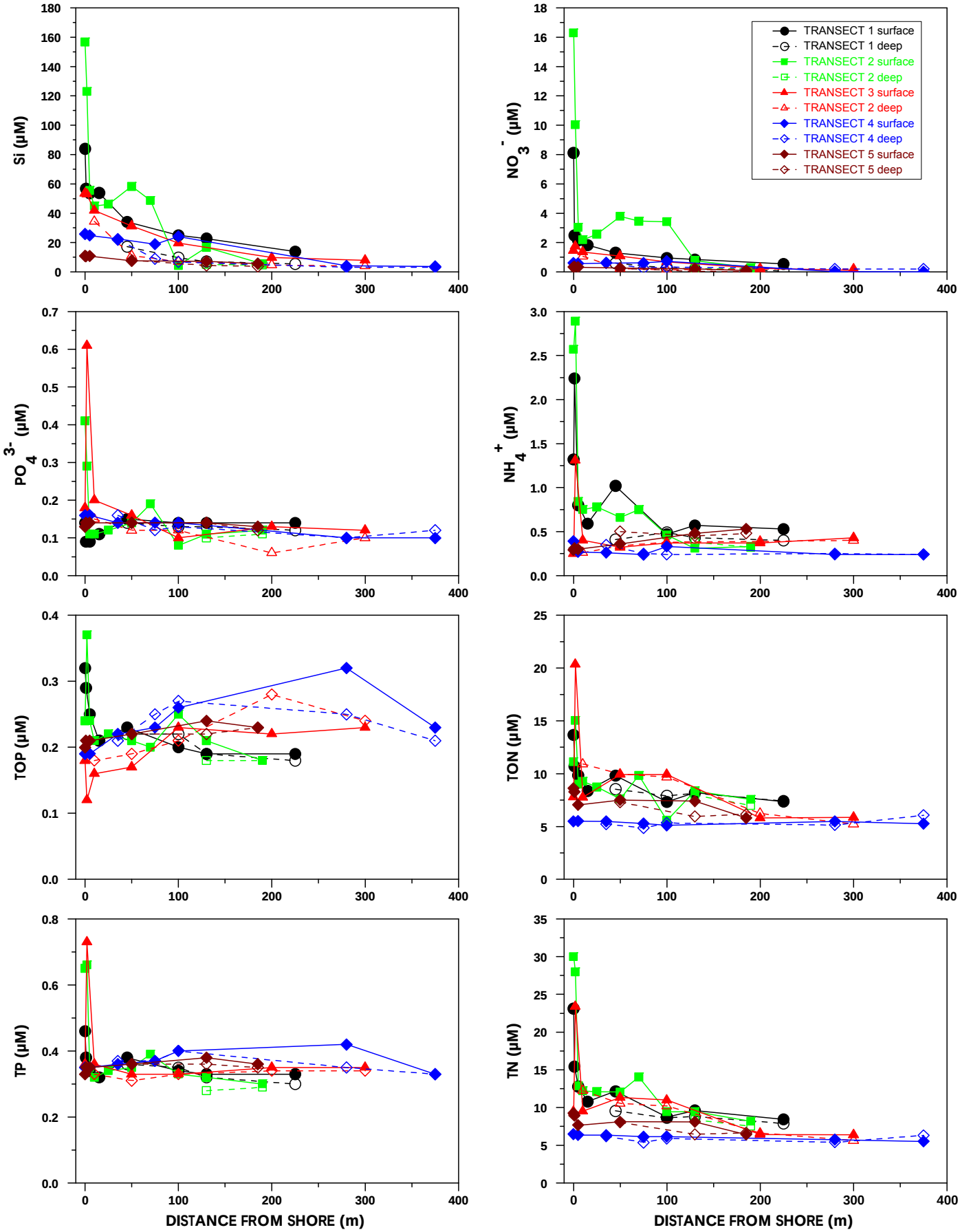


FIGURE 2. Plots of dissolved nutrients in surface and deep samples collected on May 17, 2017 as a function of distance from the shoreline along 5 transects in the vicinity of the Pupukea Commercial Development, Oahu, Hawaii. For transect locations, see Figure 1.

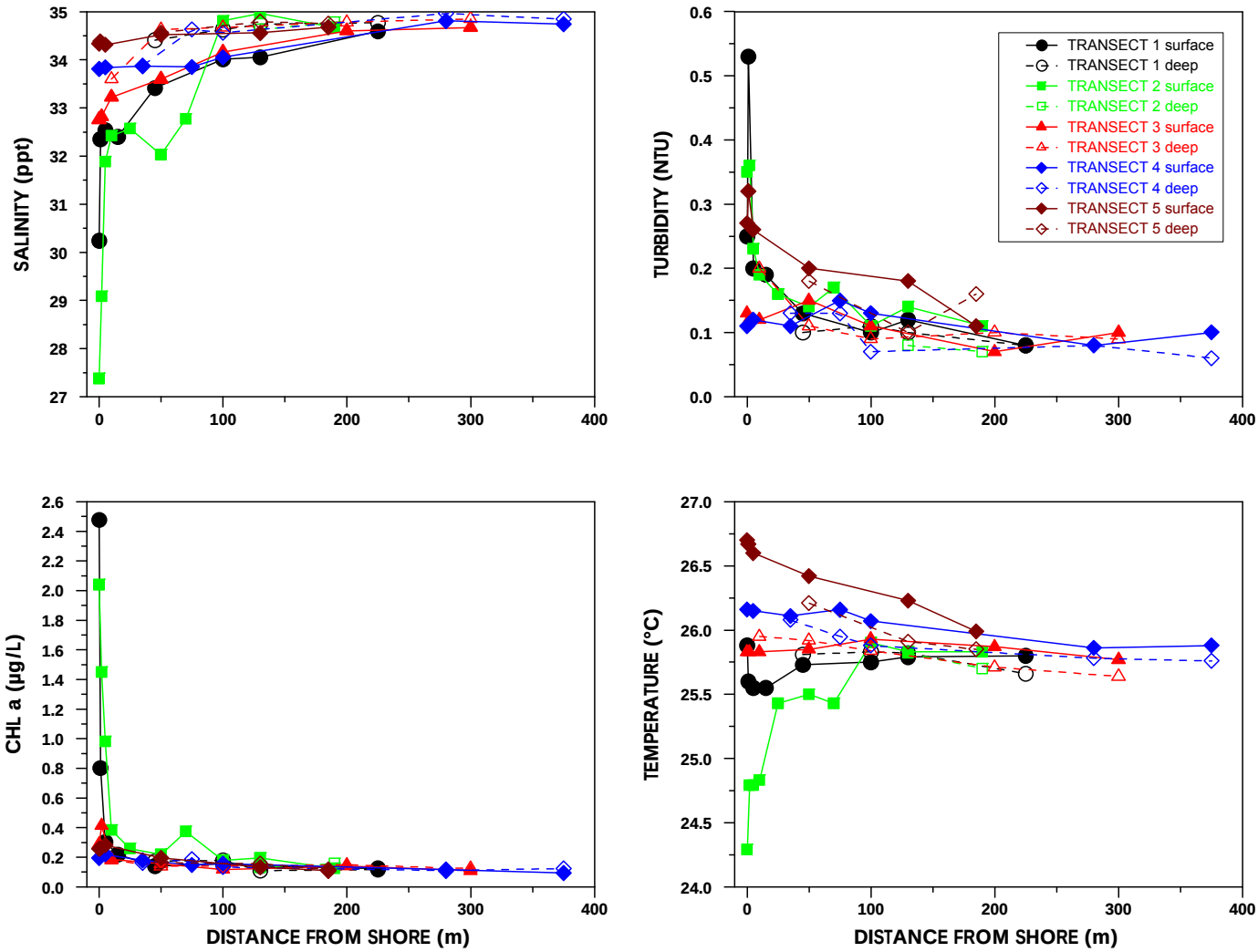


FIGURE 3. Plots of water chemistry constituents in surface and deep samples collected on May 17, 2017 along 5 transects fronting the Pupukea Commercial Property on the North Shore of Oahu, Hawaii as a function of distance from the shoreline. For transect locations, see Figure 1.

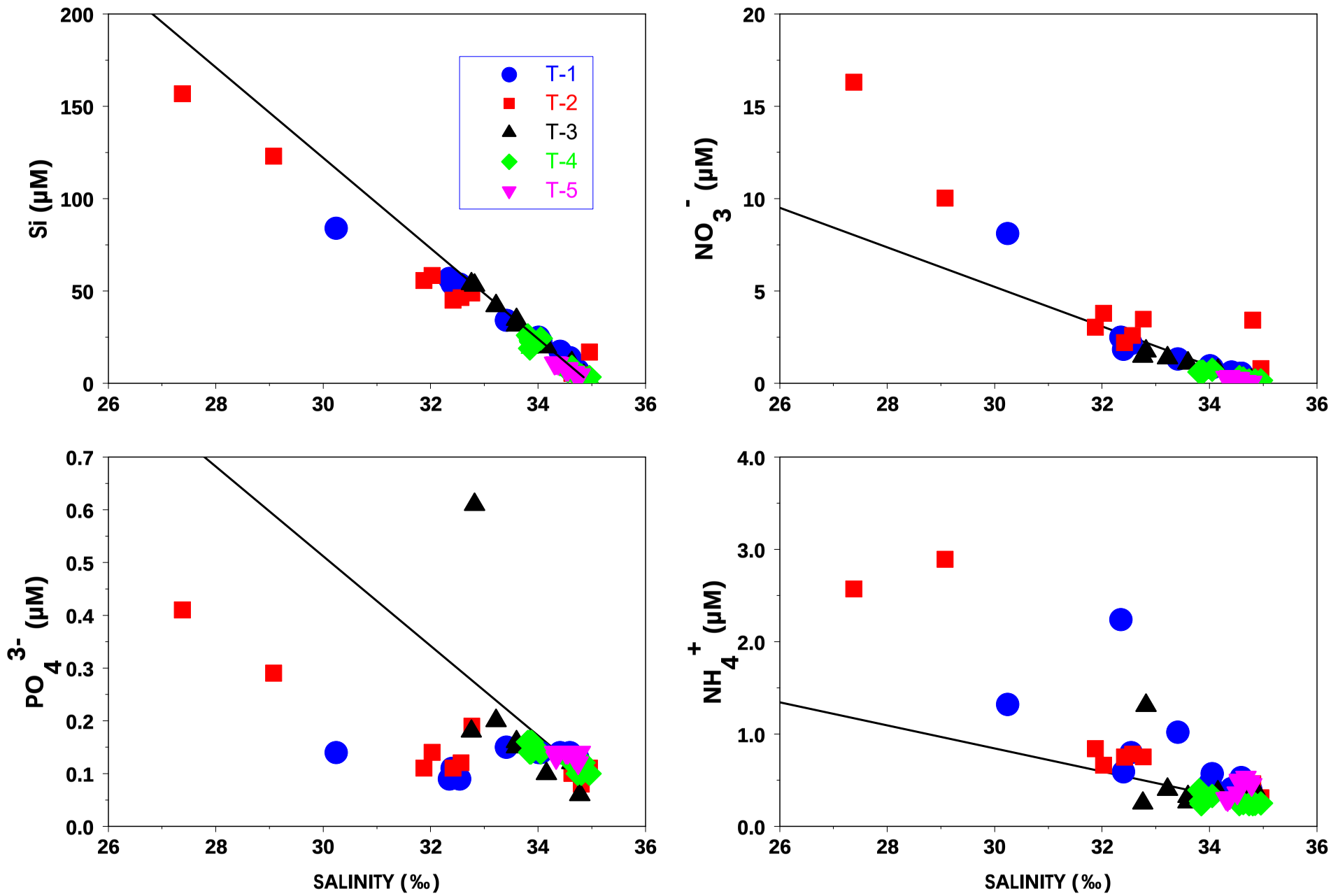


FIGURE 4. Mixing diagram showing concentration of dissolved nutrients from samples collected along transects offshore of the Pupukea Commercial Property, North Shore Oahu, Hawaii as functions of salinity. The straight line in each plot is the conservative mixing line constructed by connecting the concentrations in open ocean water with the average concentration measured in monitoring well B-1 located at the mauka end of the project site, and upslope of the ocean sampling area. For transect locations, see Figure 1.

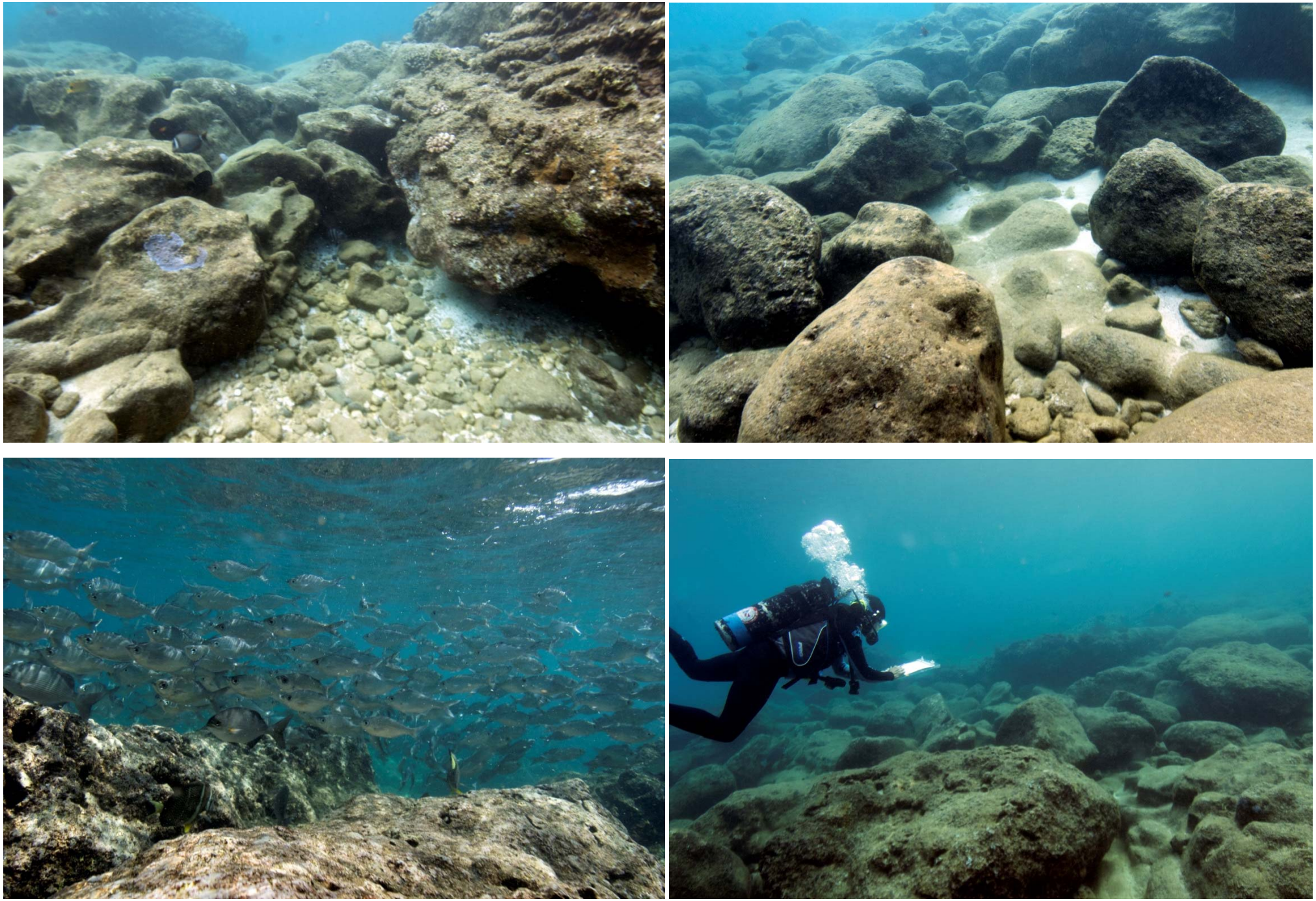


FIGURE 5. Inshore boulder zone at Sharks Cove, Pupukea, Oahu. School of fish in lower left photo are *Kuhlia sandvicensis* (*'āhole)* that are commonly found in the area. Water depth is approximately 1-2 meters.

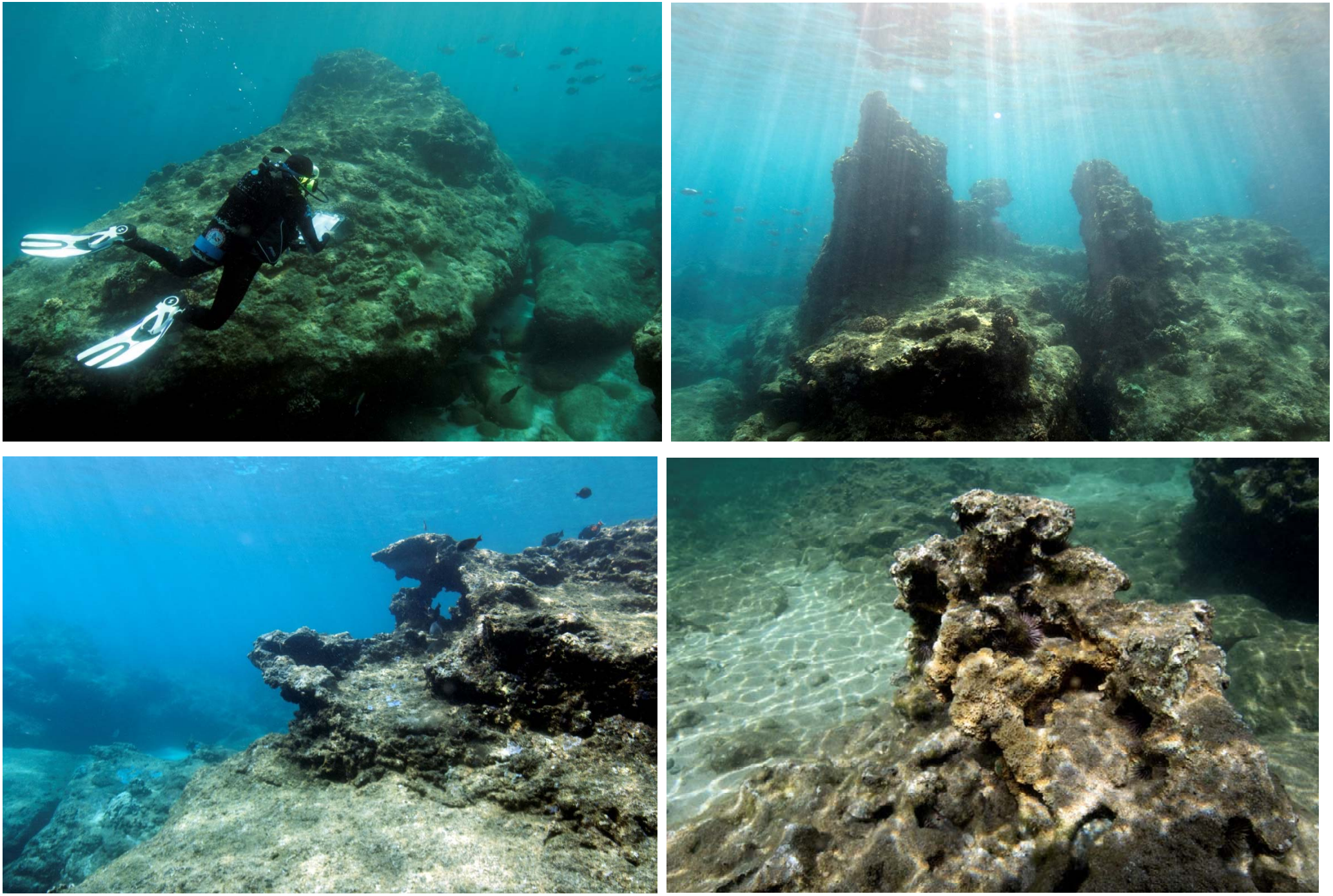
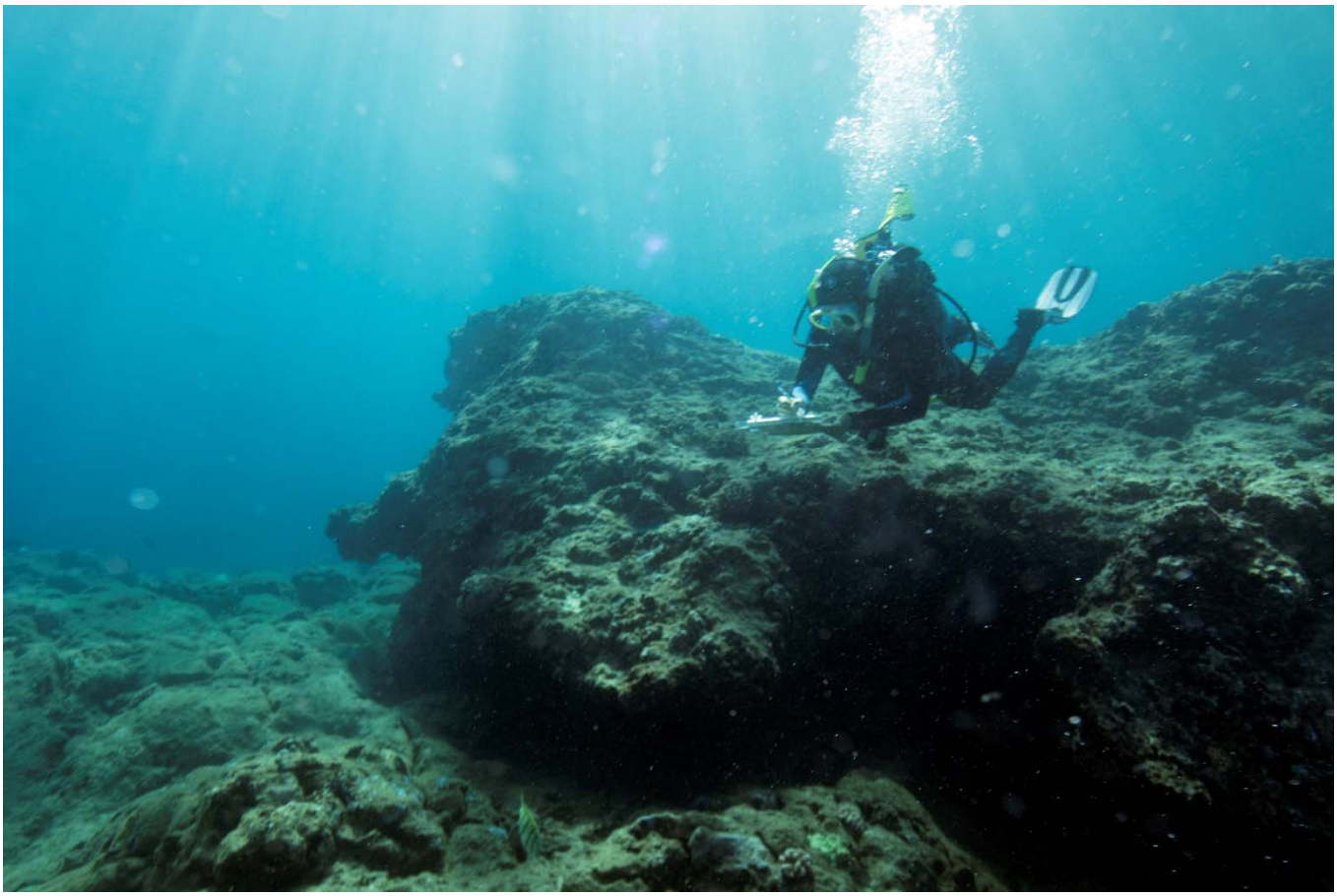


FIGURE 6. High rugosity zone at Sharks Cove, Pupukea, Oahu showing erosional limestone features. Water depth is approximately 3-4 meters.



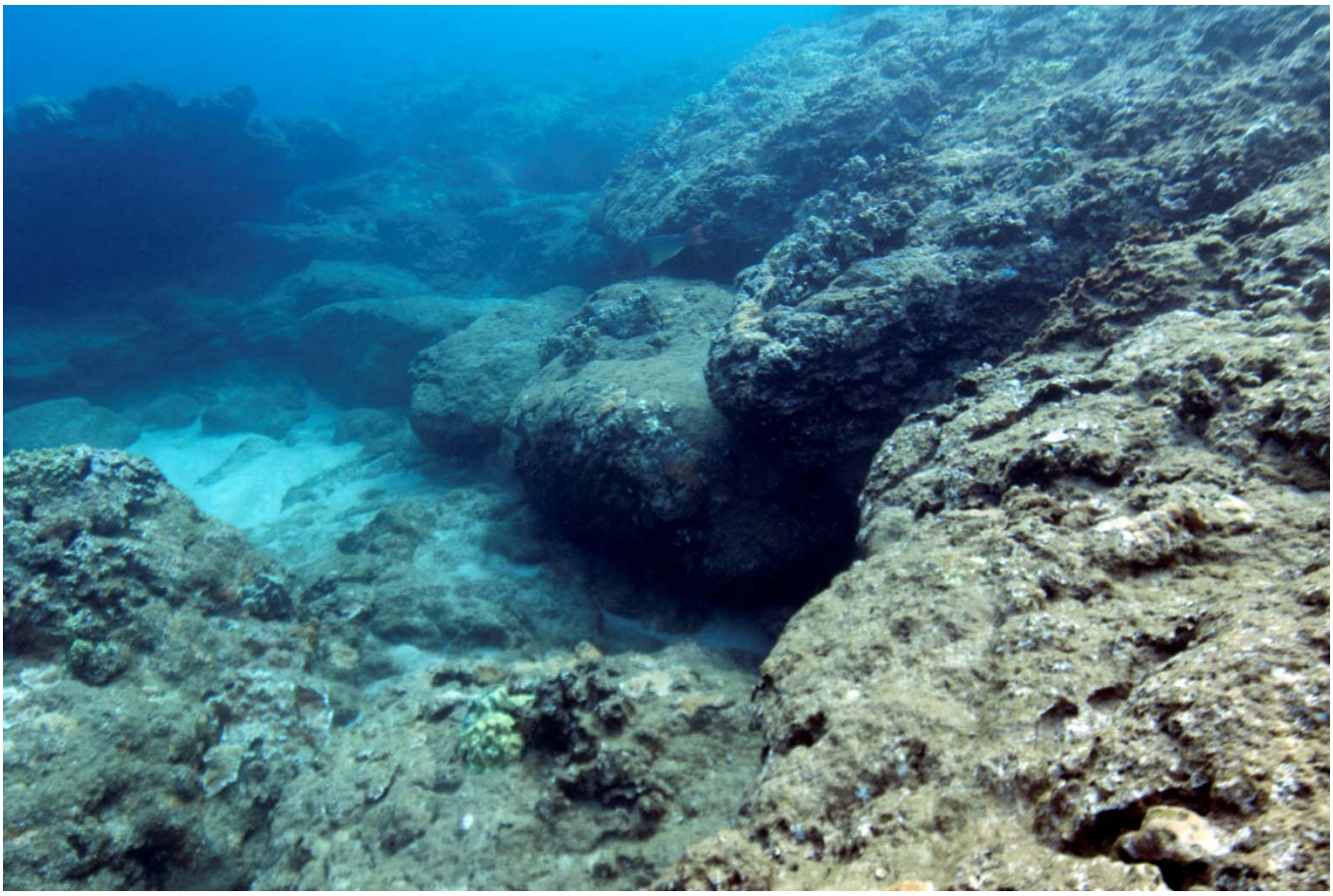
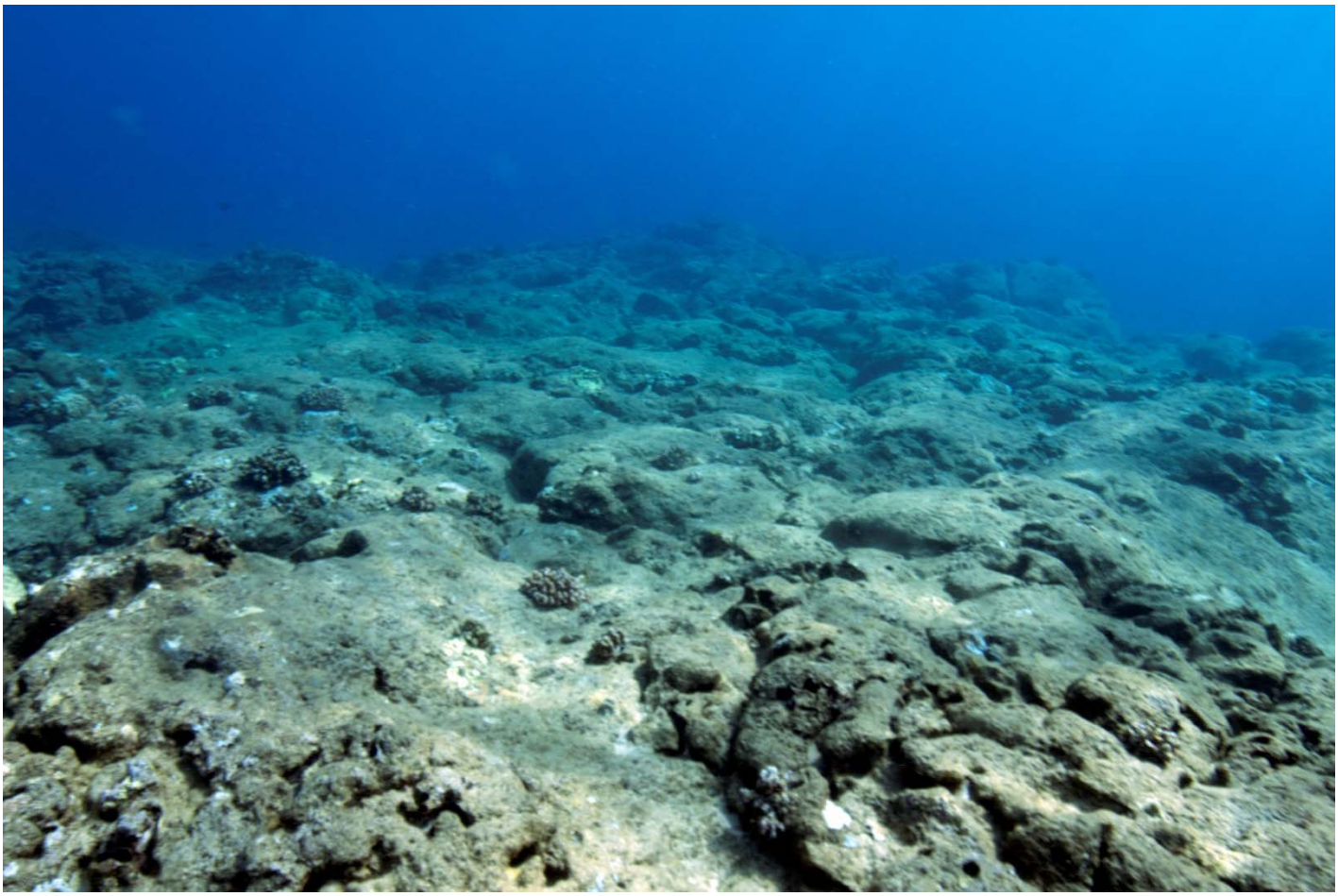


FIGURE 7. Two views of boundary between high rugosity zone and outer reef flat at Sharks Cove, Pupukea, Oahu . Water depth is approximately 5-6 meters.



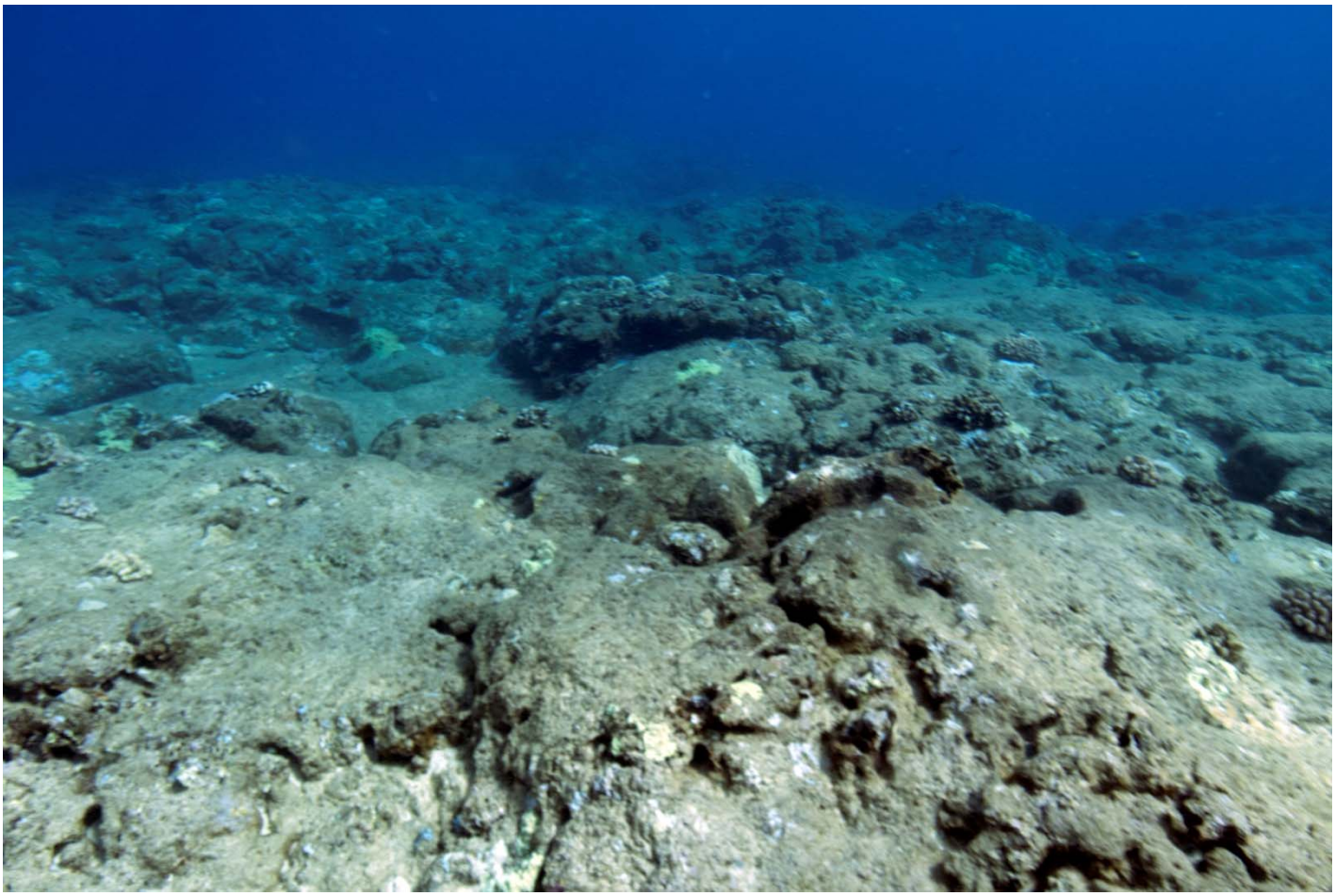


FIGURE 8. Two views of outer reef flat at Sharks Cove, Pupukea, Oahu . Water depth is approximately 7-8 meters.

FIGURE 9. Tidepools on shallow reef bench that borders Sharks Cove, Pupukea, Oahu. Bottom photos shows submerged view of outer edge of tidepool adjacent to reef crest. Water depth is approximately 1 meter.

FIGURE 10. Two views of nearshore boulder zone in the area of Transects 3 and 4, south of Sharks Cove, Pupukea, Oahu. Blue covering of boulder in upper photo is soft octocoral *Sarcothelia edmondsoni*. Water depth is approximately 1-2 meters.

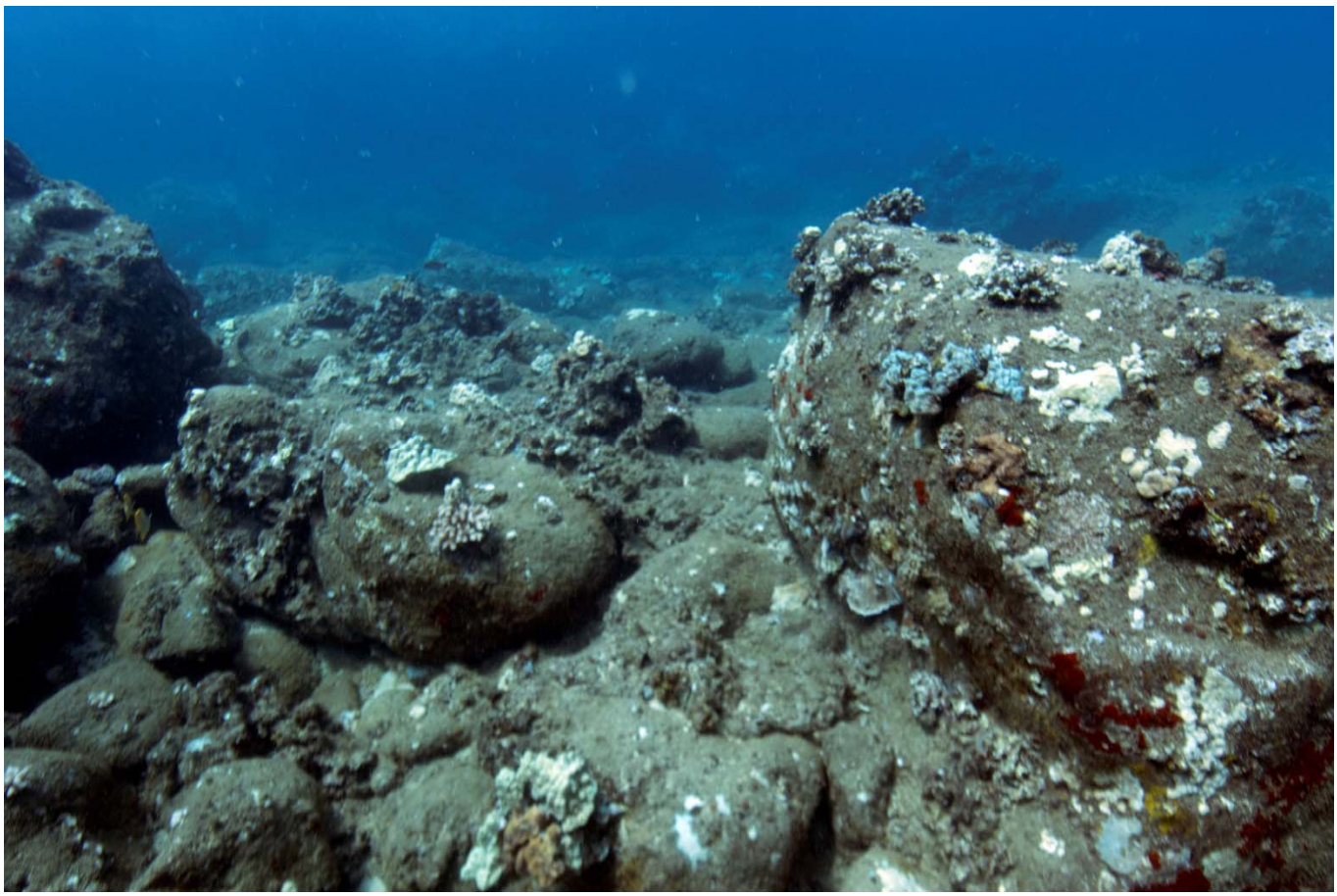


FIGURE 11. Two views of mid-reef boulder zone in the area of Transects 3 and 4, south of Sharks Cove, Pupukea, Oahu. Water depth is approximately 5-7 meters.

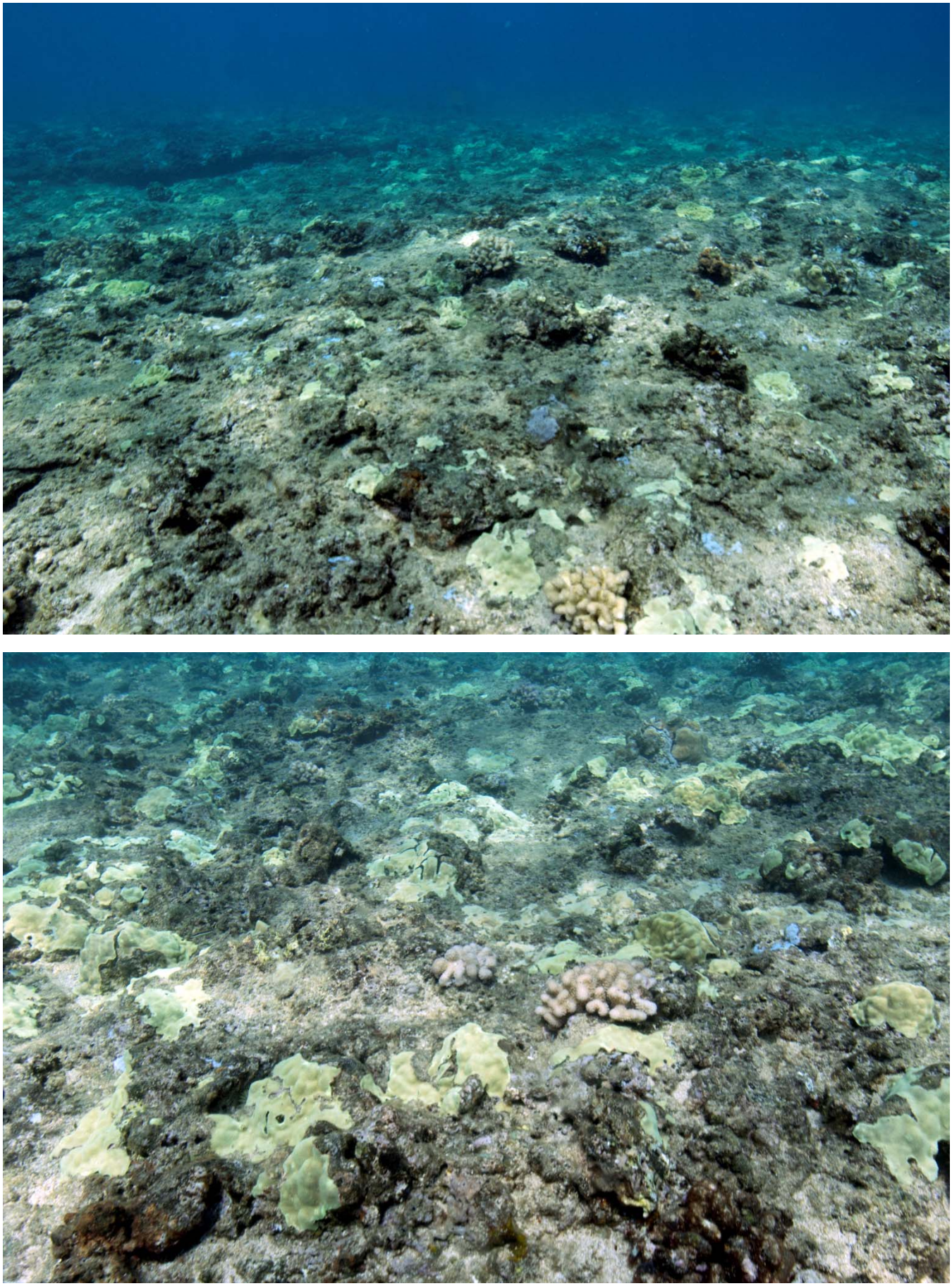
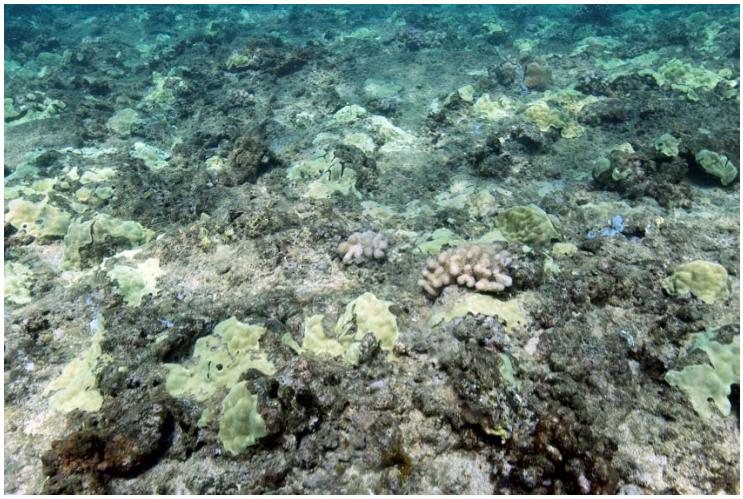
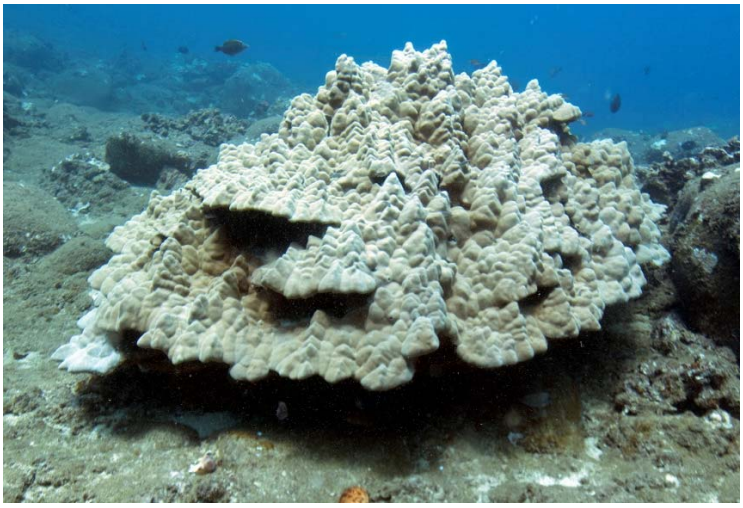


FIGURE 12. Two views of outer reef flat in the area of Transects 3 and 4, south of Sharks Cove, Pupukea, Oahu. Water depth is approximately 8-9 meters.

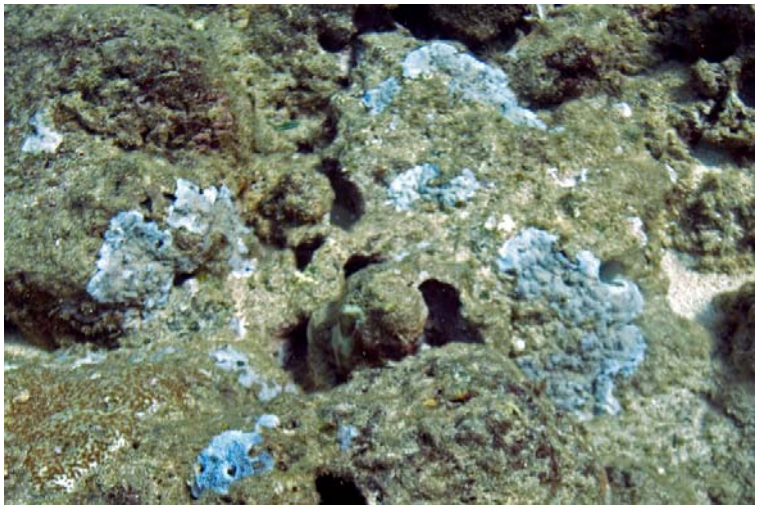
Pocillopora meandrina



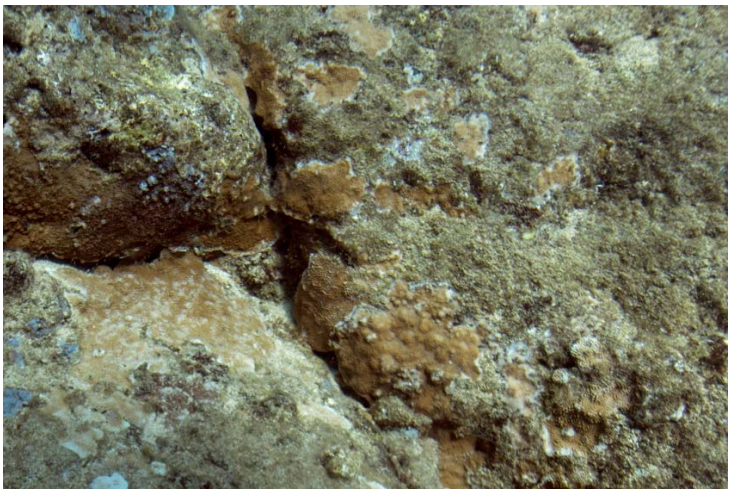
Porites lobata



Porites lutea



Montipora flabellata



Montipora patula

Montipora capitata

FIGURE 13. Coral species found off Sharks Cove, Pupukea, Oahu, Hawaii.

Pavona varians

Pavona duerdeni

Leptastrea purpurea

Leptastrea transversa

Sarcothelia edmondsoni

FIGURE 13 continued. Coral species found off Sharks Cove, Pupukea, Oahu, Hawaii.

APPENDIX D

CULTURAL IMPACT ASSESSMENT FOR
TMK: (1) 5-9-011:068, 069, AND 070 IN
PŪPŪKEA AHUPUAʻA, KOʻOLAULOA DISTRICT,
ISLAND OF OʻAHU, HAWAIʻI

FINAL—Cultural Impact Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi

Prepared For:

G70
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

November 2017

Keala Pono Archaeological Consulting, LLC ● PO Box 1645, Kāneʻohe, HI 96744 ● Phone 808.381.2361

FINAL—Cultural Impact Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi

Prepared For:

G70
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Prepared By:

Dietrix Duhaylonsod, BA
Windy Keala McElroy, PhD
and
Pūlama Lima, MA

November 2017

Keala Pono Archaeological Consulting, LLC ● PO Box 1645, Kāneʻohe, HI 96744 ● Phone 808.381.2361

MANAGEMENT SUMMARY

A Cultural Impact Assessment (CIA) was conducted for a proposed commercial development in Pūpūkea Ahupuaʻa, Koʻolauloa District, on the island of Oʻahu on TMK: (1) 5-9-011:068, 069, and 070. This CIA took the form of background research and an ethnographic survey consisting of interviews with three community members knowledgeable about the area, all of which are discussed in this report. The background research synthesized traditional and historic accounts and land use history for the Pūpūkea region. Consultations with community members were conducted to obtain information about the cultural significance of the subject properties and of Pūpūkea as a whole, as well as to address concerns of the community regarding the effects of the proposed construction on places of cultural or traditional importance.

The background study revealed that Pūpūkea is an area rich in pre- and post-contact history. With a traditional economy based largely on fishing and marine exploitation, the coastline was an important resource for the people that lived there. Because of the dearth of fresh water, wetland agriculture was not widely practiced, and dryland farming focusing on ʻuala cultivation factored largely into traditional lifeways. The historic period brought about widespread changes to the Pūpūkea landscape. Crops such as avocado and pineapple were farmed, and large tracts of land supported housing developments. The OR&L railroad ran just makai of the project area, transporting sugarcane from the north shore plantations. The Niimi store was a hub of activity at the project site in the early 20th century.

Interviews with individuals knowledgeable about Pūpūkea also produced valuable information about the cultural significance there. Although no existing cultural resources or practices were identified for the specific project area, salt collecting and limu gathering were mentioned for the coastal region across the highway, and there may have been an ancient trail that once crossed through the project area in the past. It was also noted that there may be a subterranean fresh water source beneath the project lands.

The interviewees voiced several concerns regarding the proposed development. They include the possibility of the project not giving back to the community; potential adverse effects from sewage seepage; added congestion to traffic and parking; visitors trespassing onto private property and into culturally-sensitive areas; not sharing details of the proposed development with the community; and not fulfilling road improvement stipulations that were previously discussed for the area.

The interviewees also shared recommendations and measures to mitigate potential adverse effects of the proposed development. These consist of giving the area's Hawaiian and long-time Local families preference for jobs; reaching out to the community and creating dialogue regarding what kinds of businesses will be located at the new development; improving the parking plan, delivery truck system, water usage, etc. that Foodland is currently using; not adding another traffic light along the highway in front of the development; creating a Hawaiian presence at the new development; constructing restrooms that will be accessible to the general public; being respectful of the original Pūpūkea community and acknowledging the piko families of the area; being respectful of the native Hawaiian language and encouraging its correct usage at the new development; and supporting a study on the environmental implications of development, such as the effects of benzoin (from suntan lotion) on water quality and the impacts of erosion due to public access.

CONTENTS

MANAGEMENT SUMMARY i
FIGURES iv
TABLES iv

INTRODUCTION 1
Project Description, Location, and Natural Environment 1
TRADITIONAL CULTURAL AND HISTORIC BACKGROUND 5
Place Names 5
Pre-Contact Pūpūkea 10
Land Use 10
Wind Name 10
Moʻolelo 10
Hiʻiaka and Piliaʻama 10
Pōhaku of Significance 13
Puʻu o Mahuka Heiau 13
Pūpūkea in the Historic Era 14
Early Historic to Post-Contact Period 14
Mid-19th Century and the Māhele 14
1900–the Mid-1900s 15
Modern Land Use 18
Previous Archaeology 18
Summary of Background Research 25
ETHNOGRAPHIC SURVEY 27
Methods 27
Interviewee Background 27
Roberts (Bob) Leinau 28
Thomas (Tom) Shirai, Jr. 28
Topical Breakouts 28
Connections to the Pūpūkea area 29
Pūpūkea History 30
The Natural Environment 31
Archaeological Sites and Cultural Practices 32
Change Through Time 33
Concerns and Recommendations 34
Summary of Ethnographic Survey 37
SUMMARY AND RECOMMENDATIONS 39
Cultural Resources, Practices, and Beliefs Identified 39
Potential Effects of the Proposed Project 39
Confidential Information Withheld 40
Conflicting Information 40
Recommendations 40

CONTENTS

GLOSSARY 41
REFERENCES 44
APPENDIX A: AGREEMENT TO PARTICIPATE 49
APPENDIX B: CONSENT FORM 52
APPENDIX C: TRANSCRIPT RELEASE 54
APPENDIX D: INTERVIEW WITH BOB LEINAU 56
APPENDIX E: INTERVIEW WITH TOM SHIRAI 66

FIGURES

Figure 1. Project area on a 7.5 minute USGS Waimea quadrangle map. 2
Figure 2. Project area (in red) on a TMK plat map. 3
Figure 3. Soils in the vicinity of the project area. 4
Figure 4. Portion of a map showing the north coast of O‘ahu (Donn 1902). 16
Figure 5. Portion of a Pupukea-Paumalu Homesteads map (Wall 1904). 17
Figure 6. The Niimi Store at and adjacent to the current project area, in July 1978. 18
Figure 7. USGS 1962 aerial photo of Pūpūkea. 19
Figure 8. Location of previous archaeological studies in the vicinity of the project area. 20
Figure 9. Location of known archaeological sites in the vicinity of the project area. 21

TABLES

Table 1. Previous Archaeology in Pūpūkea 22
Table 2. List of Individuals Contacted 28

INTRODUCTION

At the request of G70, Keala Pono Archaeological Consulting conducted a Cultural Impact Assessment (CIA) for a proposed commercial development in Pūpūkea Ahupuaʻa, Koʻolauloa District, on the island of Oʻahu on TMK: (1) 5-9-011:068, 069, and 070. This CIA was designed to identify any cultural resources or practices that may occur in the area and to gain an understanding of the community's perspectives on the proposed project.

The report begins with a description of the project area and a historical overview of land use and archaeology in the area. The next section presents methods and results of the ethnographic survey. Project results are summarized and recommendations are made in the final section. Hawaiian words, flora and fauna, and technical terms are defined in a glossary. Also included are appendices with documents relevant to the ethnographic survey, including full transcripts of two of the interviews.

Project Description, Location, and Natural Environment

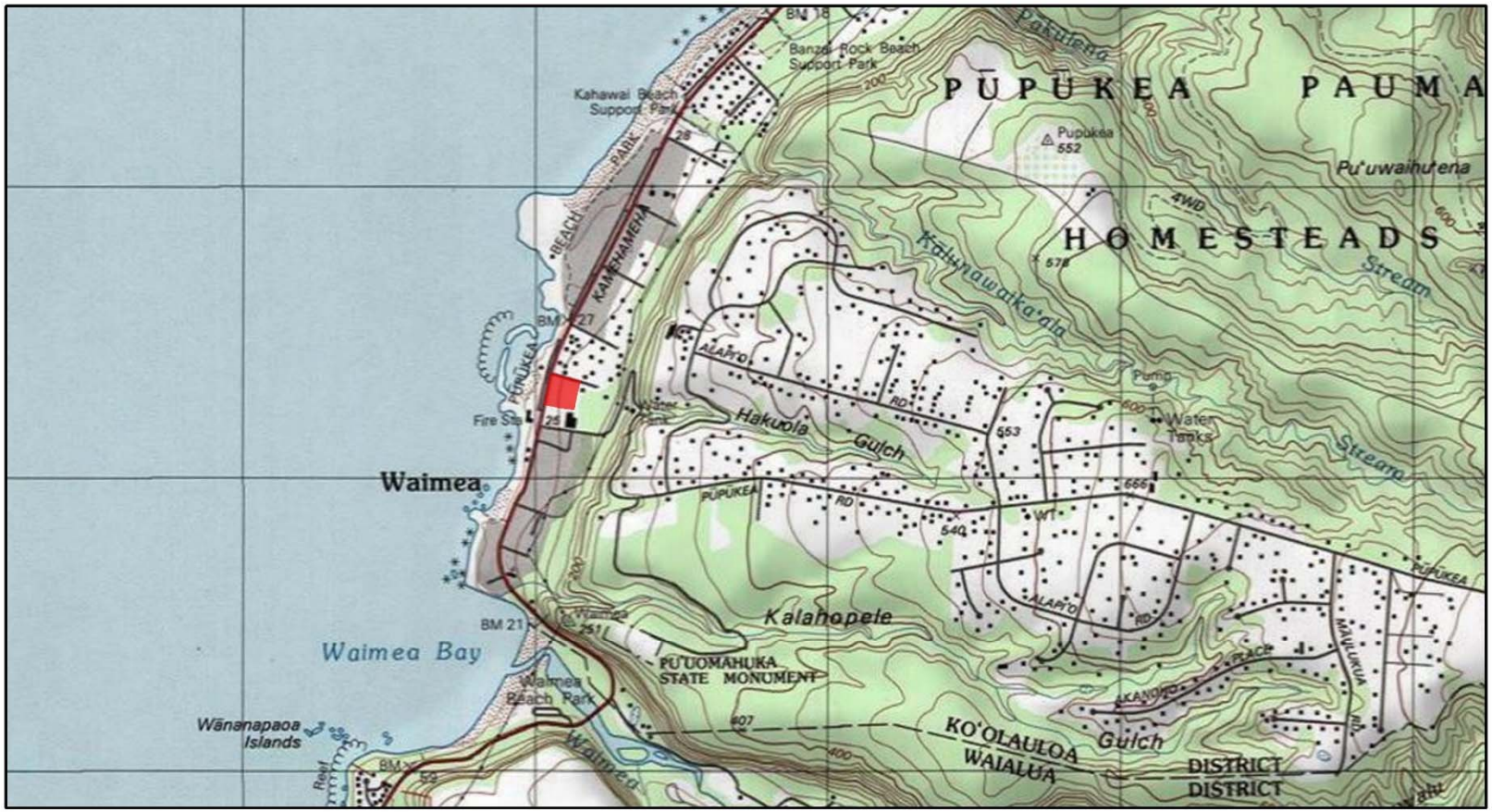
Hanapohaku LLC is proposing to develop a rural community commercial center in Pūpūkea, Oʻahu to provide a mix of goods and services to residents and visitors of the community. The property is classified as Urban in the State Land Use Designation, is zoned for B-1 Neighborhood Business in the City and County of Honolulu Land Use Ordinance, and is designated for a Rural Community Commercial Center in the North Shore Sustainable Communities Plan. The existing Foodland grocery store is included in the center. Three new buildings will be constructed, one to two stories in height, totaling approximately 30,000 SF. The buildings will set back from Kamehameha Highway with a park-like green space, walkways, and bicycle parking. Supporting infrastructure will include driveways, parking with solar panel canopies, drainage, water supply, and wastewater.

The project area is located on the coast of Pūpūkea on the north shore of Oʻahu (Figures 1 and 2). One of 23 ahupuaʻa in the Koʻolauloa Moku, Pūpūkea is bounded to the northeast by Paumalū Ahupuaʻa, and to the southwest by Waimea Ahupuaʻa and Moku.

TMK: (1) 5-9-011:068, 069, and 070 total 1.1 ha (2.72 ac.), and are owned by Hanapohaku, LLC. This project area that includes the three parcels is bounded by Pahoe Road on the north, Kamehameha Highway on the west, Foodland on the south, and a private parcel on the east. Topography is relatively flat, and vegetation consists of pockets of koa haole, grass, and weeds. Rainfall averages approximately 115 cm (45 in.) per year (Giambelluca et al. 2013). The project area is roughly equidistant from two watercourses, Kālunawaikaʻala Stream, which lies approximately 1 km (3,280 ft.) to the north, and the larger Waimea River, that is 1 km (3,280 ft.) to the south. The project area lies at approximately 12 m (40 ft.) above mean sea level (amsl), and is 150 m (492 ft.) from the coastline at the beaches known as Sharks Cove and Three Tables.

Geology of the area centers around the Koʻolau Mountain Range, the massive shield volcano that serves as a backdrop for the windward Oʻahu coast. Formed roughly 1.8–2.6 million years ago, the Koʻolau mountains produced tholeiitic and olivine basalts with trace amounts of oceanite (Macdonald et al. 1983). Below the Koʻolau Mountains is the sandy coastal plain that was formed when the sea level was higher. Soils are of the Kaena-Waialua association, which were used for sugarcane, pasture lands, orchards, truck crops, urban development, and recreation (Foote et al. 1972). The soil series is described as mostly level to gently sloping, and poorly to excessively drained (Foote et al. 1972).

Specifically, the soil type in the project area is Waialua silty clay, 3–8% slopes (WkB) (Foote et al. 1972) (Figure 3). This soil is found on coastal plains and is typically used for pasture, sugarcane, and truck crops (Foote et al. 1972:128).



Layer Credits: USGS Topographical Waimea Quadrangle Map 1998

Figure 1. Project area on a 7.5 minute USGS Waimea quadrangle map.

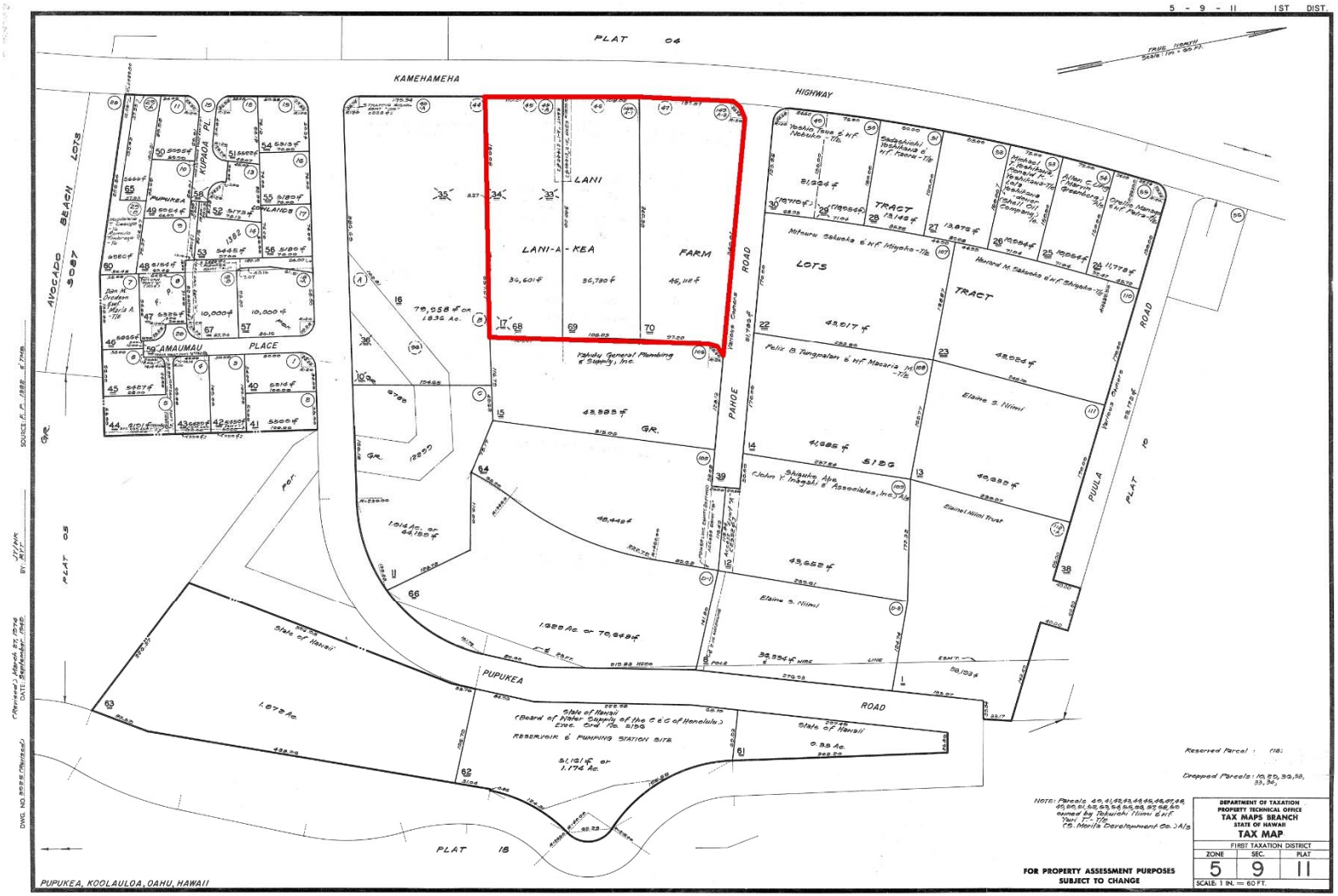


Figure 2. Project area (in red) on a TMK plat map.

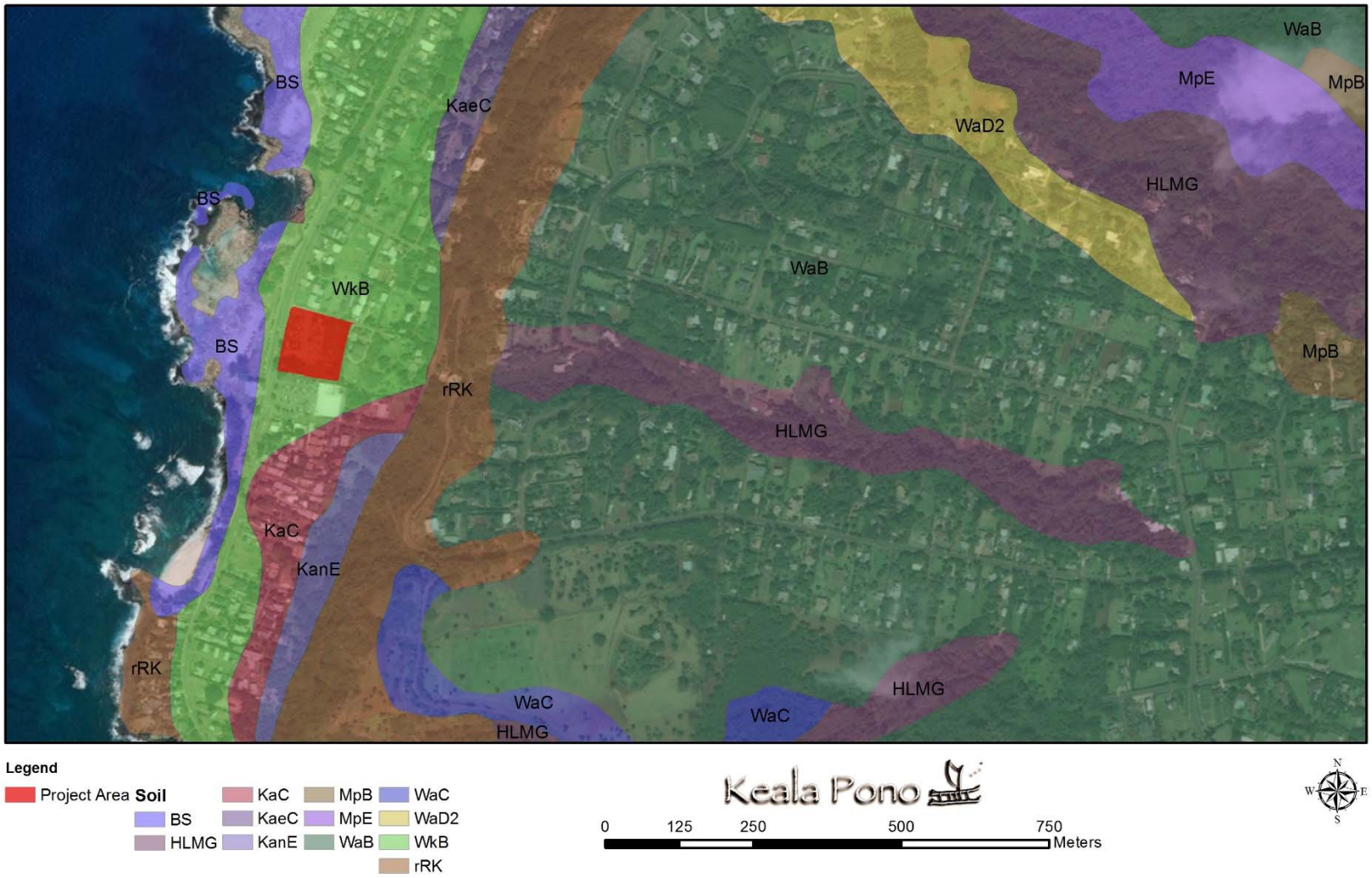


Figure 3. Soils in the vicinity of the project area.

TRADITIONAL CULTURAL AND HISTORIC BACKGROUND

A brief historic review of Pūpūkea Ahupuaʻa is provided below, to offer a better holistic understanding of the use and occupation of the project area. In the attempt to record and preserve both the tangible (i.e., traditional and historic archaeological sites) and intangible (i.e., moʻolelo, ʻōlelo noʻeau) culture, this research assists in the discussion of anticipated finds. Research was conducted at the Hawaiʻi State Library, the University of Hawaiʻi at Mānoa libraries, and SHPD library. In addition, internet resources such as the Papakilo database, Ulukau database, and the State of Hawaiʻi Department of Accounting and General Services (DAGS) website were consulted. Historical maps, archaeological reports, and historical reference books were among the materials examined.

Place Names

Traditional Hawaiian place names are often referred to in ʻōlelo noʻeau, moʻolelo, and mele. Other sources that have documented traditional Hawaiian place names include historic maps, ethno-historic accounts, ethnographic surveys, and early historic land claim records, such as Land Commission Award (LCA) Claims, Grant Claims, and Boundary Commission Testimonies (BCT). The name of a place and its interpretation can reveal significant information about the traditional beliefs and practices associated with an area. In ancient Hawaiʻi, it was common to name places based on their environment, the resources found in the area, the people that live there, events that happened in the area, and religious or spiritual associations. The name Pūpūkea literally translates to "white shell" (Pukui et al. 1976:195). The sea was an important resource in the region, as fresh water for farming was not abundant in the ahupuaʻa.

The following compilation includes Pūpūkea place names, names of features, moʻo ʻāina, heiau, kūʻula, and ʻili ʻāina, along with any translation and lexicology information that could be obtained for each place. The place names and descriptions were gleaned from *A Catalog of Hawaiian Place Names: Compiled from the Records of the Boundary Commission and The Board of Commissioners to Quiet Land Titles of the Kingdom of Hawaii* (Soehren 2010). Translations obtained from Pukui et al. (1976) are abbreviated as PEM in the text.

Ahupohaku
Feature: *moʻo ʻāina*
Claim no. 9976 by Lono is for his "Apana 1. Mooaina o Ahupohaku."
Lexicology: ahu-pōhaku.
PEM: stone heap.

Aleka
Feature: *moʻo ʻāina*
Claim no. 10238 by Kalama is for his "Apana 3. Aleka, hookahi mala uala." Claim no. 2737 by Puhipapa for his "Apana 1. A moo aina was not awarded.
Lexicology: ʻaleka.
PEM: Large tree of the pine family, cedar, fir.

Auwahi
Feature: *moʻo ʻāina*
Claim no. 11010 by Waha: "Apana 1. Auwahi ka aina, he aina kanu."
Lexicology: auwahi.
PEM: smoky glow.

Camp Pupukea
Feature: place
Boy Scout camp.
Lexicology: pūpū-kea.
PEM: White shell.

Hakuola Gulch
Feature: gulch
Stream rises at about 520 ft. elevation, ends at about 120 ft.
Lexicology: haku-ola.
PEM: living lord.

Ka Lua o Maua
Feature: rock
Site 254. Number of stones in the water, one of which is known as Kalua o Maua, first small inlet on the Kahuku side of Waimea Bay…similar to Laniwahine and is representative of a woman who was a great fisher... (McAllister 1933:151; Sterling and Summers 1978: 145)
Lexicology: ka-lua-maua.
PEM. The pit of Maua

Kaaipu
Feature: *moʻo ʻāina*
Claim no. 8039 by Aena is for "Apana 2. Kaaipu. He aina paakai".
Lexicology: ka-ʻai-pū.
PEM: the eating together.

Kaaumakua
Feature: *moʻo ʻāina*
Claim no. 2905 by Kailialoha: "Kaaumakua ka aina ma Pupukea" (Foreign Testimony 11:511), "i ka ili aina o Kaaumakua" (Native Register 3:687).

Kalaekoa
Feature: Boundary point
Course 9 of the Pupukea/Waimea boundary runs "to top of hill Kalaekoa"
Lexicology: ka-lae-koa.
PEM: the koa tree point.
Kalahopele Gulch
Feature: gulch

Kaleleiki
Feature: stream
Lexicology: ka-lele-iki.
PEM: the short leap.

Kalunawaikaala Stream
Feature: stream
Lexicology: ka-luna-wai-kaʻala.
PEM: water from the heights [of] Kaʻala.

Kamaee
Feature: *Kūʻula*
Site 253. Piles of stones, near mountain side of road near Waimea. One of the most prominent piles has a depression a few inches deep and about 2 feet in diameter. This was known as Kamaeʻe fishing shrine (koʻa), and fish offerings were placed in the mouth like aperture." (McAllister 1933:150; Sterling and Summers 1978:145).

Kamao
Feature: *moʻo ʻāina*
Claim no. 10924 by Uluehu: "Apana 1. Kamao kahi kanu."
Lexicology: Perhaps ka-maʻo.

Kanakaiki
Feature: *moʻo ʻāina*
Claim no. 10924 by Uluehu: "Apana 2. Kanakaiki aina paakai ia."
Lexicology: kanaka-iki.
PEM: Small man.

Kanawai
Feature: *moʻo ʻāina*
Claim no. 10238 by Malamanui: "Apana 1. Kanawai ka moo aina."
Lexicology: kānāwai.

Kaohaimoa
Feature: *moʻo ʻāina*
Claim no. 2904 by Kanae: Apana 1. Kaohaimoa ka moo."

Kapi
Feature: *moʻo ʻāina*
Claim no. 7420 by Kaiwi: "Kapi ka moo ma Pupukea he aina kula."
Lexicology: kāpī. PE: to sprinkle, as with salt. Ka-pī.
PEM: several possible meanings.

Kapuaa
Feature: *moʻo ʻāina*
Claim no. 7421 by Kalainaina: "Apana 1. Kapuaa ka moo aina." Claims no 7422 by Kaawa and no. 8136 by Holoikauai for parcels in kapuaa were denied.
Lexicology: ka-puaʻa.
PEM: the pig.

Kapuupuu
Feature: *moʻo ʻāina*
Claim no. 8039:2 by Aena at Kaaipu is bounded on the Waianae side by "aina o Hina, kapaia Kapuupuu."
Lexicology: ka-puʻupuʻu

Keokea
Feature: *moʻo ʻāina*
Claim no. 11010 by Waha: "Apana 2. Keokea he aina paakai."
Lexicology: ke-ō-kea. PEM: the white sand (ō is short for one).

Kiinoho
Feature: *moʻo ʻāina*
Claim no. 2904 by Kanae is "ma Kiinoho kekahi kula". Claim no. 4261 by Kauila for his "Apana 1. Kiinoho moo ma Pupukea" was not awarded.
Lexicology: kiʻi-noho.

Kiwaa
Feature: *moʻo ʻāina*
Claim no. 4261 by Kauila for his "Apana 3. Kiwaa aina paakai" was not awarded.
Lexicology: kīwaʻa

Kuaiula 2
Feature: *moʻo ʻāina*
Claim no. 8039 by Aena: "Apana 1. Kuaiula 2 moo he kula."

Kukuauau
Feature: *ʻili ʻaina*
Claim no. 2736 by Pohakahi is "i ka ili aina o Kukuauau, eha ili uala, hookahi kula uala…" Written "Kukaauau" in FT (Foreign Register).

Maunawai
Feature: place
Lexicology: mauna-wai.
PEM: water mountain.

Pakulena Stream
Feature: stream
Lexicology: pākū-lena.
PEM: yellow barrier.

Piliaama
Feature: stone
Site 252. Stone known as Piliaama… The natural depression upon the stone is said to be the footprint of a man and of a crab." (McAllister 1933:150; Sterling and Summers 1978:144)
Lexicology: pili-ʻaʻama

Pohakaa
Feature: *moʻo ʻāina*
Claim no. 10824 by Punahoa: "Apana 1. Pohakaa moo aina."
Lexicology: Perhaps pōhā-kaʻa.
PEM: rolling stone (pōhā is short for pōhaku).

Pupukea
Feature: *ahupuaʻa*
Returned by Kamamalu at the Māhele, retained by the Gov. indices list 19 kuleana. Claims no. 4261 by Kauila, no 4337 by Nalimaku, no. 7442 by Kaawa were not awarded.
Lexicology: Pūpū-kea.
PEM: white shell.

Puu o Mahuka Heiau
Feature: *heiau*
"It is the largest heiau on Oahu" (McAllister 1933:142)…credited to Menehune, and a place where chiefesses gave birth. It was probably at this heiau that three of Vancouver's crewmen were offered in sacrifice in 1794. The images here are said to have been destroyed by order of Kamehameha II in 1819" (Sterling and Summers 1978:142).
Lexicology: puʻu o mahuka.
PEM: hill of escape.

Puu Waihuena
Feature: boundary point
Lexicology: puʻu wai-huʻena.
PEM: flowing water hill.

Puulu
Feature: *moʻo ʻāina*
Claim no. 4261 by Kauila: "Apana 2. Puulu hookahu mala uala." Also claim no. 4723 by Ku: "Puulu ka moo aina ma Pupukea."
Lexicology: pūʻulu.
PEM: group, crowd, army, party, gang, retinue.

Sunset Beach
Feature: place
Residential area and surfing beach.

Umipuna
Feature: *moʻo ʻāina*
Claim no. 4323 by Kawili: "Apana1. Umipuna ka moo aina, ahupuaa Pupukea."
Lexicology: ʻumi-puna.

Wahiolu
Feature: *moʻo ʻāina*
Claim no. 3990 by Haona: "Apana 2. Pahale ma moo aina ma Pupukea, Wahiolu ka inoa."
Lexicology: Perhaps wahi ʻolu.
PEM: cool place.

Waimea
Feature: village
Near Waimea Bay.
Lexicology: wai-mea.
PEM: reddish water (as from erosion of red soil).

Pūpūkea Beach Park lies directly across the street from the project area. The park includes two main beaches known as Sharks Cove and Three Tables:

> Pūpūkea, or "white shell," is a long and narrow eighty-acre beach park with a rocky shore. Two small pocket beaches lie within the rocks, one at either end of the park. Among the most popular dive sites on the North Shore, these small beaches are known as Sharks Cove and Three Tables.
>
> Sharks Cove was named by the scuba divers who use it as an entry/exit point, One popular story says that the outline of a reef outside the cove resembles a shark when seen from above Three Tables was named for the three sections of flat reef that lie off the beach. The tables emerge above the surface of the ocean at low tide. Both of these beaches are primarily summer dive sites, the powerful winter surf precluding most in-water activities in the park. (Clark 2005:112–114)

Pre-Contact Pūpūkea

The following section presents information on the project area in pre-contact times, before the arrival of Westerners in Hawaiʻi in 1778. Included are land use information, a wind name, and moʻolelo of Pūpūkea.

Land Use

Pūpūkea did not likely support wetland agriculture in times past and its economy probably focused more on fishing and the exploitation of coastal resources, along with dryland agriculture. Handy et al. (1991) provide further details:

> Two other *ahupuaʻa* situated between Kaunala and Waimea, namely Paumalu and Pupukea, are not of a topography to support wet-taro culture of ancient type….The narrow seaward plain had no water. According to *kamaʻaina* informants, the gulches or streams in these two localities never were planted. (Handy et al. 1991:463)

It is said that Kamapuaʻa, ruler of Oʻahu awarded all lands containing the word "wai" (water, wealth) to the kahuna Lono-a-wohi. After Kamapuaʻa left Oʻahu to visit his parents' home in Kahiki, his father Kahikiula took his place as ruler of Oʻahu (Fornander 1969:43) and re-distributed the "well-watered" lands. Although Pūpūkea was not among these wet lands, Kamakau states that during the re-distribution, "the kahuna class were given the lands of Waimea, Pupukea, Waiahole, and Hakipuʻu…Pupukea belonged to the priests of Kualiʻi" (Kamakau 1992:231). The kahuna class held these lands until the days of high chief Kahahana.

Wind Name

A general wind name for the Pūpūkea area is Mālualua, a northeasterly wind (Nakuina 2005:43). No rain names or other wind names could be found for the ahupuaʻa.

Moʻolelo

Several moʻolelo pertinent to Pūpūkea were found during research. These stories include an account of the goddess Hiʻiaka and her encounter with a fisherman of Pūpūkea, reports of significant stones, and the history of Puʻu o Mahuka Heiau.

Hiʻiaka and Piliaʻama

According to oral tradition, and a publication in a 19th century Hawaiian newspaper, Hiʻiaka, sister of the volcano goddess, Pele, traveled to the Pūpūkea area and while there chanted of the places she visited. A clipping of the original newspaper article and translation are provided below (*Ka Leo o ka Lahui* 1893 in Sterling and Summers 1978:144):

Ko laua nei hele aku la no ia a
ke kula o Kuilima. nana aku laua
nei o ke kopi mai o ke kai o Pupu-
kea iluna o ka lau o kai Ilima, ua
hele wale a pala ka lau o ka ilima
i ke ehuehu, ili aku keia i. keia
mele pule.

He kai kapi ike ona
Ko Kalamaula i Pupukea
Ua hele a pala i ke kai
Ke oho o ka ilima
E hiki aku ai i Kapi
E iho aku ai i Piliamaama la
Aia i pili wale ——e
Aia la ke lele ala
Aohe i ka welo ——e.

——:Aole i puehu:——

(*Ka Leo o ka Lahui* 1893)

> They continued to the plain of Kuilima and watched the sea of Pupukea throwing its sprays upward. It swept over the leaves of the ilima, yellowing them, then Hiiaka chanted:
>
> The sea sprays up over the sand,
> The yellowing sea of Pupukea,
> Yellows the leaves of the ilima,
> With its sprays,
> This is the way to Kapi,
> This is the trail to Piliaʻama
> (last three lines not translated) (Sterling and Summers 1978:144)

Another article provides a continuation of Hiʻiaka's visit to Pūpūkea. A clipping of the original newspaper article and translation are provided below (*Ka Leo o ka Lahui* 1893 in Sterling and Summers 1978:144):

I ka pau ana oia mele aia nei. ko laua nei hele aku la no ia a hala ia wahi, a malaila aku a Waiaiae. a malaila aku a hala ia mau wahi aku, a Pupukea laua nei, ike laua nei ia Piliaaama e noho ana e lawaia, nana aku laua nei i ka lawaia mai o Piliaaama, kani kahea aia nei.

O Piliaaama kanaka lawaia o ka pali
Hee puewai o Waimea
Konohiki aku o Ihikoko
Lawaia hi-aku o Kaipahu la
He aha ua ia?

Pane mai o Piliaaama ia laua nei, no ka ninau ana aku a Hiiakaikapoliopele i ka ia ma ke mele.

Hai mai o Piliaaama ia laua i ka inoa o ka ia ana e lawaia ana. he kala ka ia he Moi ka ia. he oio ua ia, he ahole ka ia, he paaua pau ka olelo ana mai o Piliaaama ia laua nei, kani aku no ke oli a Hiiakaikapoliopele penei.

O Piliaaama kanaka lawaia
Kane hiialo oe a Kapuewai
Laweia aku o Kapapaiki la
He aha ua ia e?

Pane mai o Piliaaama, he uhu ua ia, he Opule ka ia, he Manini ka ia, he Hinane ua ia, he papai no hoi ua ia, pau na ia e lawaia ianei la e au.

(*Ka Leo o ka Lahui* 1893)

At Pupukea they spied Piliaama fishing as they watched Hiiaka called:

> O Piliaama fisherman of the cliffs
> Who surfs the mouth of the stream of Ihukoko
> Who catches aku fish
> What are you catching now?

He answered that he was catching some kala, moi, oio and ahole. She called again:

> O Piliaama, fisherman,
> Beloved husband of Kapuewai,
> Who fishes for aku at Kapapaiki,
> What else do you catch?

He answered, "some uhu, opelu, manini, hinane and also some crabs. I do all kinds of fishing here" (Sterling and Summers 1978:144).

Pōhaku of Significance

Two special stones were noted by McAllister (1933) in Pūpūkea. One of these stones was called Piliaama:

> The natural depression upon this stone is said to be the footprint of a man and of a crab. According to my informant, Hookala, a man of low birth but exceedingly handsome and strong once lived in the vicinity. An alii woman who passed was enamored of this man and approached him. She came toward him, but he moved away. She followed. He began running, and she gave chase. When she had almost overtaken him, he vanished, and there remained this stone with his footprint and that of a crab. (McAllister 1933:150)

Another significant stone was known as Kalua o Maua:

> Hoʻokala [an informant] remembers that Kalua o Maua is similar to Laniwahine [*moʻo* of the Waialua area] and is representative of a woman who was a great fisher. One night, when she had gone torching, her husband was unable to see her from their place on the side of the hill. Searching for her, he found her in the form of this stone swimming about in the water. It is said that wherever this stone is found there is fresh water in the ocean. (McAllister 1933:151)

Puʻu o Mahuka Heiau

Located on the cliffs of Pūpūkea, overlooking Waimea Valley, stands Puʻu o Mahuka, which is thought to be a heiau luakini. Pilahi Paki writes about this in his book, *Legends of Hawaii: Oahu's Yesterday*, and credits the construction of the heiau to the aliʻi Kahahana, and his high priest, Kaʻōpulupulu. It is said that Kahahana asked Kaʻōpulupulu if it was wise to wage war with Kauaʻi. The priest replied that a heiau would need to be constructed so that he could receive a sign. Kahahana had Kupopolo Heiau built near the shores of Waimea, but Kaʻōpulupulu did not receive the sign. He instructed Kahahana to build a heiau at a higher location and Puʻu o Mahuka was erected. There, Kaʻōpulupulu received the sign to not invade Kauaʻi. Paki writes, "Puʻu-O-Mahuka, remains among the lofty cliff as an emblem of the power of 'thought' which can produce peace or war" (Paki 1972:58–59).

Pūpūkea in the Historic Era

Following the arrival of Westerners in 1778, Pūpūkea saw major transformations. The uplands were cultivated in pineapple, and lowlands were increasingly used for residential housing. These changes are evident in historic accounts, Māhele data, and maps and photographs of the landscape.

Early Historic to Post-Contact Period

The first account mentioning the Pūpūkea area was written by Captain Charles Clerke as he sailed around the north shore of Oʻahu. On February 28, 1779, Captain Clerke anchored in Waimea Bay and recorded this description in his journals:

> I stood into a Bay just to the Wt[est]ward of this point the Eastern Shore of which was by far the most beautifull Country we have yet seen among these Isles, here was a fine expanse of Low Land bounteously cloath'd with Verdure, on which were situate many large Villages and extensive plantations; at the Water side it terminated in a fine sloping, sand Beach. . . . This Bay, its Geographical situation consider'd is by no means a bad Roadsted, being sheltered from the NEbN SEterly to SWbW with a good depth of Water and a fine firm sandy Bottom; it lays on the NW side of this Island of Wouahoo . . . surrounded by a fine pleasant fertile Country. (Beaglehole 1967:569)

James King, also on the same voyage as Captain Clerke, stated:

> The appearance of so fine a river running thru: a deep Valley made us drop Anchor…I walk'd a little farther & observed it to be the produce of 2 branches, or small streams or rivers, that came down 2 Valleys…the bank of this river as well as the face of this NW part of Woʻahoo was as beautiful as any Island we have seen & appear'd very well cultivated & popular; they told us here that most of the Men were gone to Morotai to fight Tahyteree… (Beaglehole 1967:584–585)

In 1792, the *Daedalus*, captained by George Vancouver, anchored off the coast of Waimea and a party was sent ashore for fresh water. Three members of the party ventured inland in Waimea Valley and were beaten to death by tattooed men. The bodies were possibly taken to Puʻu o Mahuka Heiau:

> They [the Hawaiians] took the bodies to a heiau (ʻtemple'), cooked them and divided them among Oʻahu chiefs. They themselves said the heiau was at Mokuleia, about twelve miles along the coast to the west. European interpreters of Hawaiian history, wishing to be more commonsensical, suggest that the heiau might have been Puʻu-o-Mahuka at Waimea itself. (Dening 1995:25)

Mid-19th Century and the Māhele

The change in the traditional land tenure system in Hawaiʻi began in 1845 with the introduction of The Organic Act. The Organic Act of 1845 and 1846 essentially initiated what is known as the Māhele system, or the division of Hawaiian lands. This new system introduced the concept of private property in the Hawaiian society, and required Hawaiians, commoners and royalty alike, to submit claim to their lands.

In 1848, the crown (Hawaiian government) and the aliʻi (royalty) received their land titles, which are known as the Crown Lands. In 1850 a second Māhele was conducted, this time allowing commoners, and others who could prove residency, to put claim to their land. Those with successful claims were awarded with land known as kuleana parcels. Though many Hawaiians did not submit or follow through on claims for their lands, the distribution and descriptions of Land Commission

Awards (LCAs) can provide significant insight to the patterns of land use, residence, environment, and activities in the project area.

During the Māhele, Pūpūkea Ahupuaʻa was awarded to Kauikeaouli (Kamehameha III). However, because his documented awards on Oʻahu did not include any awards from the Koʻolauloa District, it has been suggested that Kauikeaouli gave Pūpūkea to the government (Chinen 1961:26, PBR Hawaii & Associates 2014). Boundary Commission Document No. 14985 validated this statement, as Pūpūkea Ahupuaʻa was indicated as "Crown Lands." A total of 31 kuleana claims were made for Pūpūkea Ahupuaʻa. Of these, nine were not awarded. Unlike typical small land boundaries, most of the 22 awarded claims in Pūpūkea were comprised of narrow land strips. There were no LCA awards given for the project parcels or immediate vicinity.

Shortly following the Māhele, sugarcane cultivation became a profitable endeavor in Hawaiʻi. In 1889 the OR&L railroad was built from Honolulu to Kahuku to accommodate the sugar plantations on the north shore of Oʻahu, and the Waimea Railroad station was built at the intersection of the Government Road and the Pūpūkea Road (Kuykendall 1967:68).

1900–the Mid-1900s

In the early 1900s, though the railroad was the main focus of economic activity on Oʻahu, farming in the Pūpūkea highlands became profitable as crops were harvested and transported, using the railroad, to central markets across the island (Clark 1977). In particular, avocadoes were very lucrative, with 400 acres of avocado trees planted in the Pūpūkea uplands in the early 1900s (Clark 1977:123). After the owner, Fredrick Haley, Sr., sold the 400 acres of avocado lands to Libby, McNeil, and Libby, pineapple became a popular commodity of the area (Clark 1977:123). Pineapple plantations in Pūpūkea were founded as early 1919.

At this time, residential construction also began for the Pūpūkea-Paumalū Homesteads and the Pūpūkea-Paumalū Beach Tract. By 1943, even more development had occurred in the region. During the decline of plantation agriculture in the 1950s and 1960s more lots in Pūpūkea were sold for residential purposes. By the 1970s, both the highlands and coastal areas of Pūpūkea were thriving residential communities.

Two historic maps depict the project lands in the early 1900s. The first is a map of the north coast of Oʻahu from 1902 (Figure 4). The shoreline, coastal road, cliffs, and gulches are illustrated. The next map shows the Pupukea-Paumalu Homesteads in 1904 (Figure 5). The OR&L railroad and Government Road can be seen just makai of the project area. A structure labeled as "Waimea R.R. Station is also close to the project area, at the intersection of what is now Kamehameha Highway and Pūpūkea Road. A school lot is depicted south of the bend in Pūpūkea Road, southeast of the project site. Farther southeast is Puʻu o Mahuka, which is labeled as "Heiau."

There were three major stores in the Pūpūkea area in the 20th century that were focal points of the community. The earliest was Niimi Store, located at and adjacent to the current project area (Figure 6). It was established in 1903 and later evolved into Foodland (Hoover 2005). The Niimi family lived in a house located behind their store (*North Shore News* 2013:3). The other stores were the Sunset Beach Store (located at the current Ted's Bakery), which opened in 1956; and Kammie's Market, which was established in 1961 next to what is now the Chevron service station.

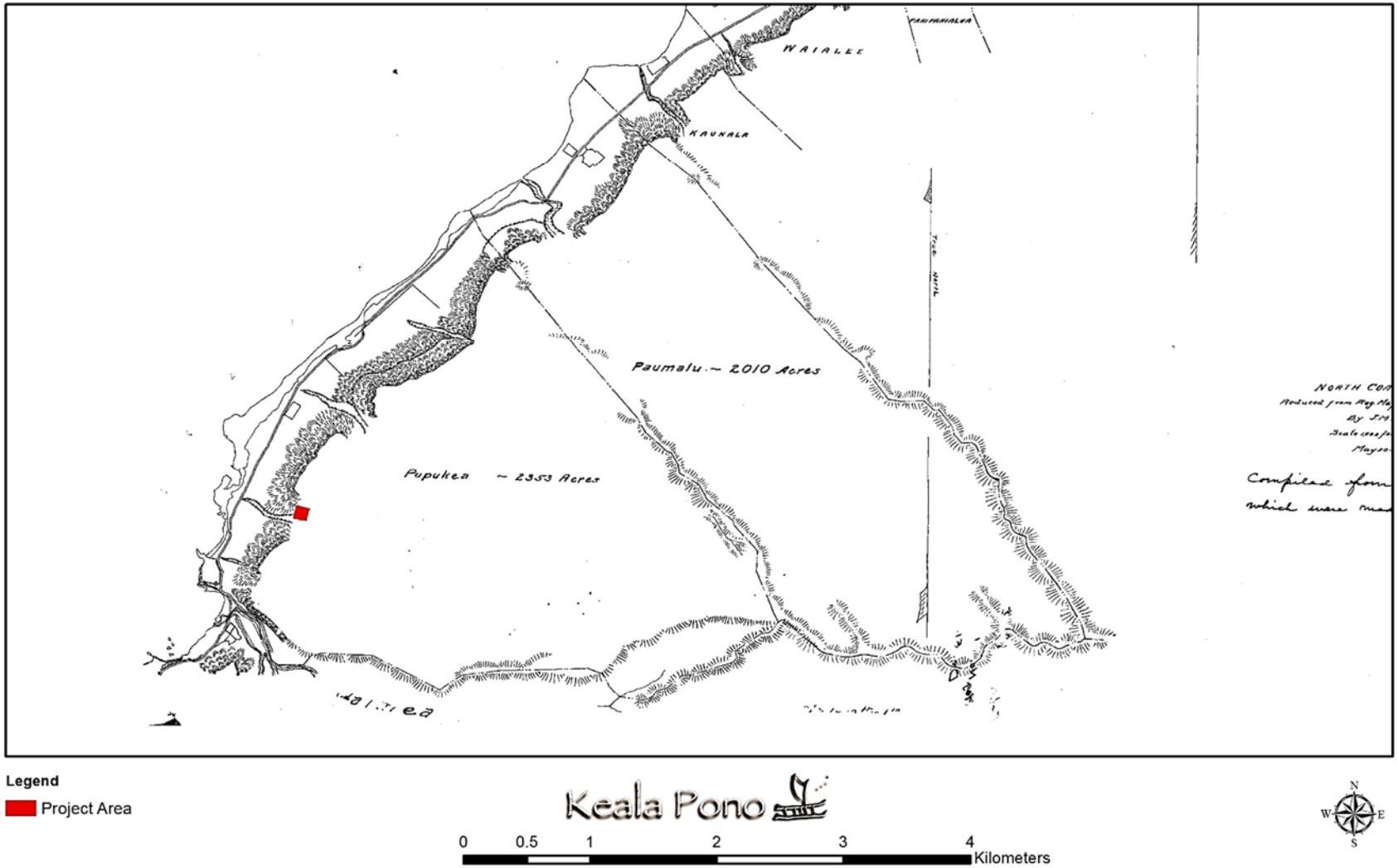


Figure 4. Portion of a map showing the north coast of O‘ahu (Donn 1902).

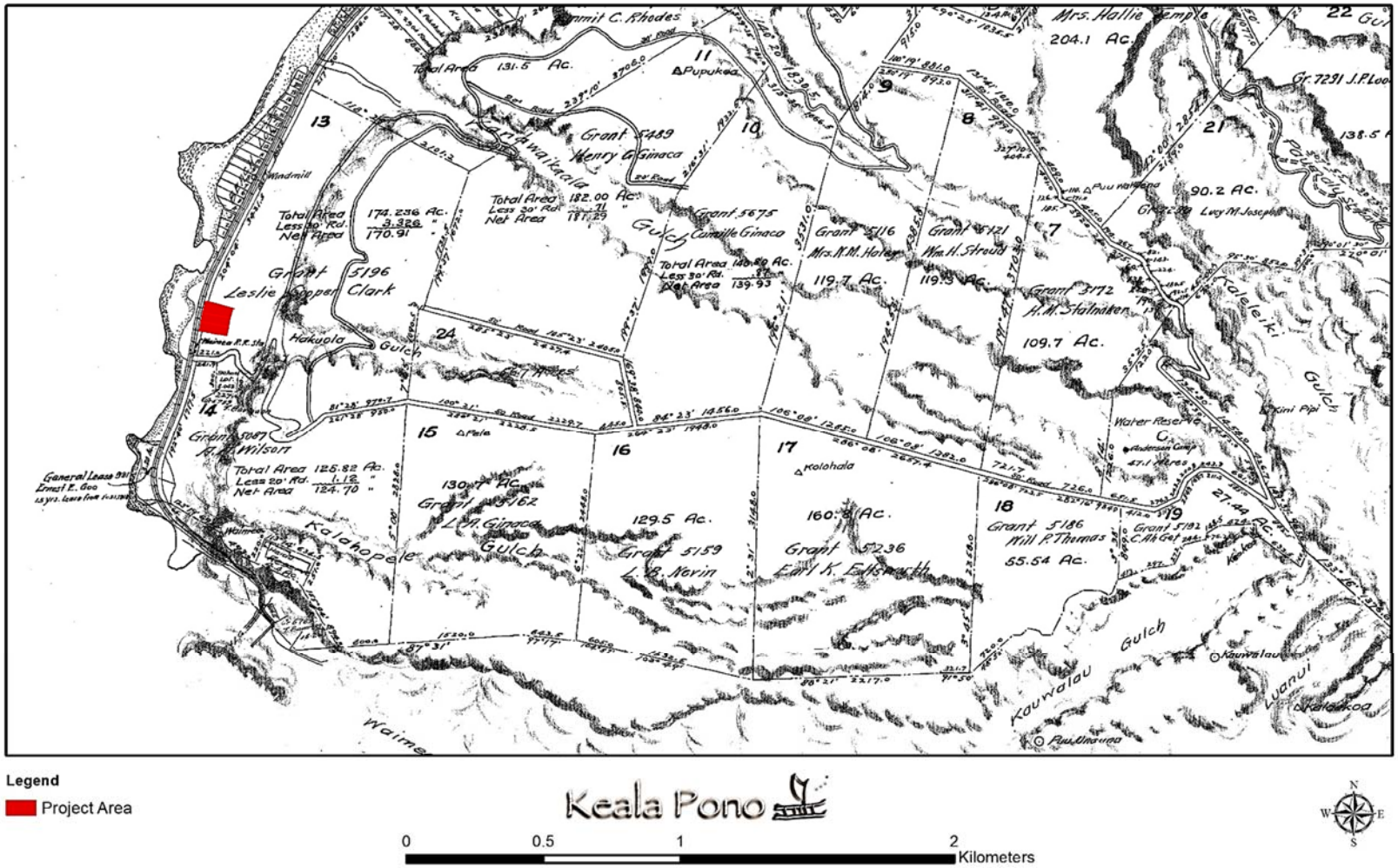


Figure 5. Portion of a Pupukea-Paumalu Homesteads map (Wall 1904).

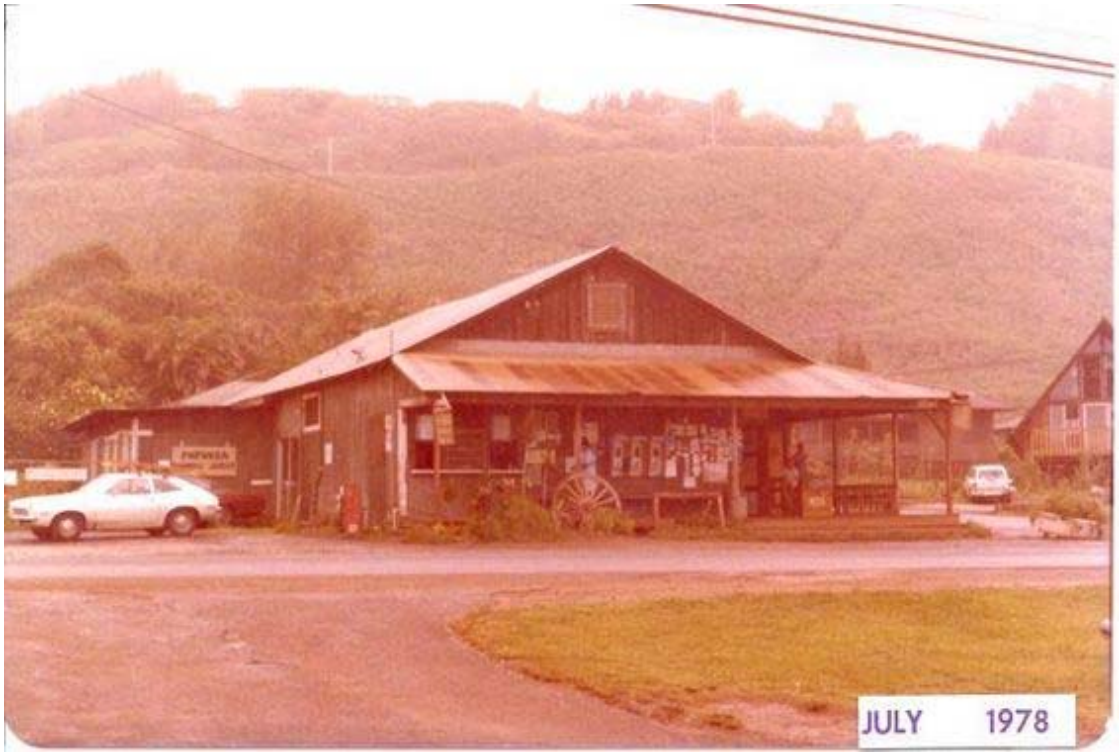


Figure 6. The Niimi Store, the grounds of which were at and adjacent to the current project area.

Modern Land Use

Today, Pūpūkea remains a mostly residential area, with some agricultural production in the uplands (Figure 7). The Pūpūkea-Paumalū Beach Tract (Sunset Beach area) was also sold for residential property, where many vacation homes were constructed. Pūpūkea is known as a popular surf area, and continues to attract homeowners, surfers, and tourists today (Clark 1977:125).

Previous Archaeology

Pūpūkea has been the subject of many archaeological studies. The following discussion summarizes the findings of cultural resources identified in the vicinity of the subject properties, based on reports found at the SHPD library in Kapolei (Figure 8 and Table 1). State Inventory of Historic Places (SIHP) numbers are prefixed by 50-80-01 (Figure 9 and see Table 1).

The earliest archaeological work for the area was during McAllister's (1933) island-wide survey. McAllister recorded five sites in Pūpūkea Ahupuaʻa: Site 249, Puʻu o Mahuka Heiau; 252, the Piliaama Stone; 253, Kamaeʻe Koʻa; 254, the Kalua o Maua Stones; and 255 Pele's Follower's Stones. The latter site was described as a group of large rocks that are people whom Pele turned to stone so they would become immortal (McAllister 1933).

An early archaeological reconnaissance was conducted mauka of Pūpūkea Beach Park, and one site, SIHP 3364, was documented (Denison 1979). The site is a rectangular enclosure formed by rock walls. It was thought to be an animal pen dating to the historic era. Also mauka of Pūpūkea Beach Park, human remains were inadvertently discovered during construction on a residential property (Kawachi 1988). The remains were given the SIHP number 3955. Human remains were again

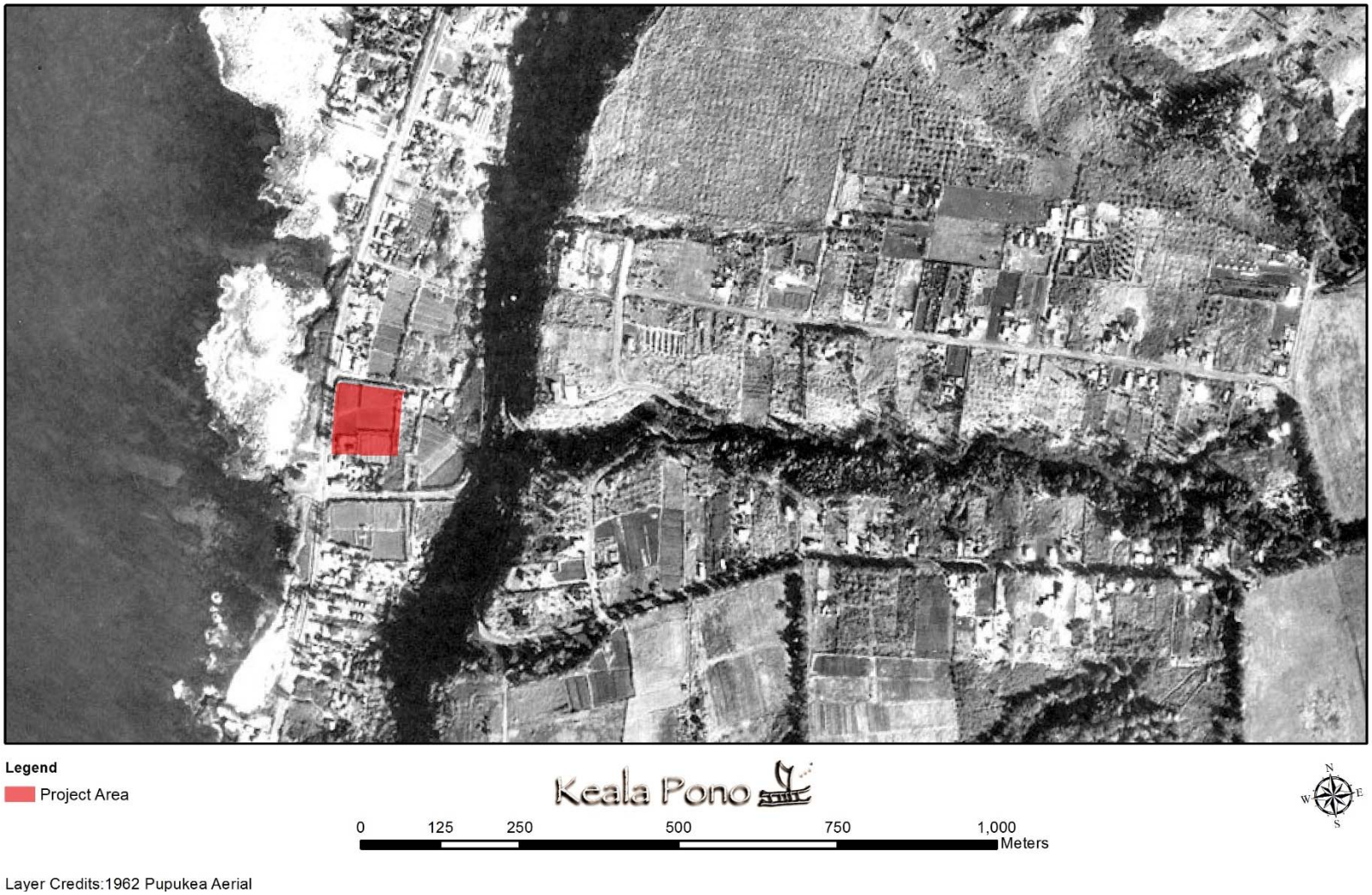
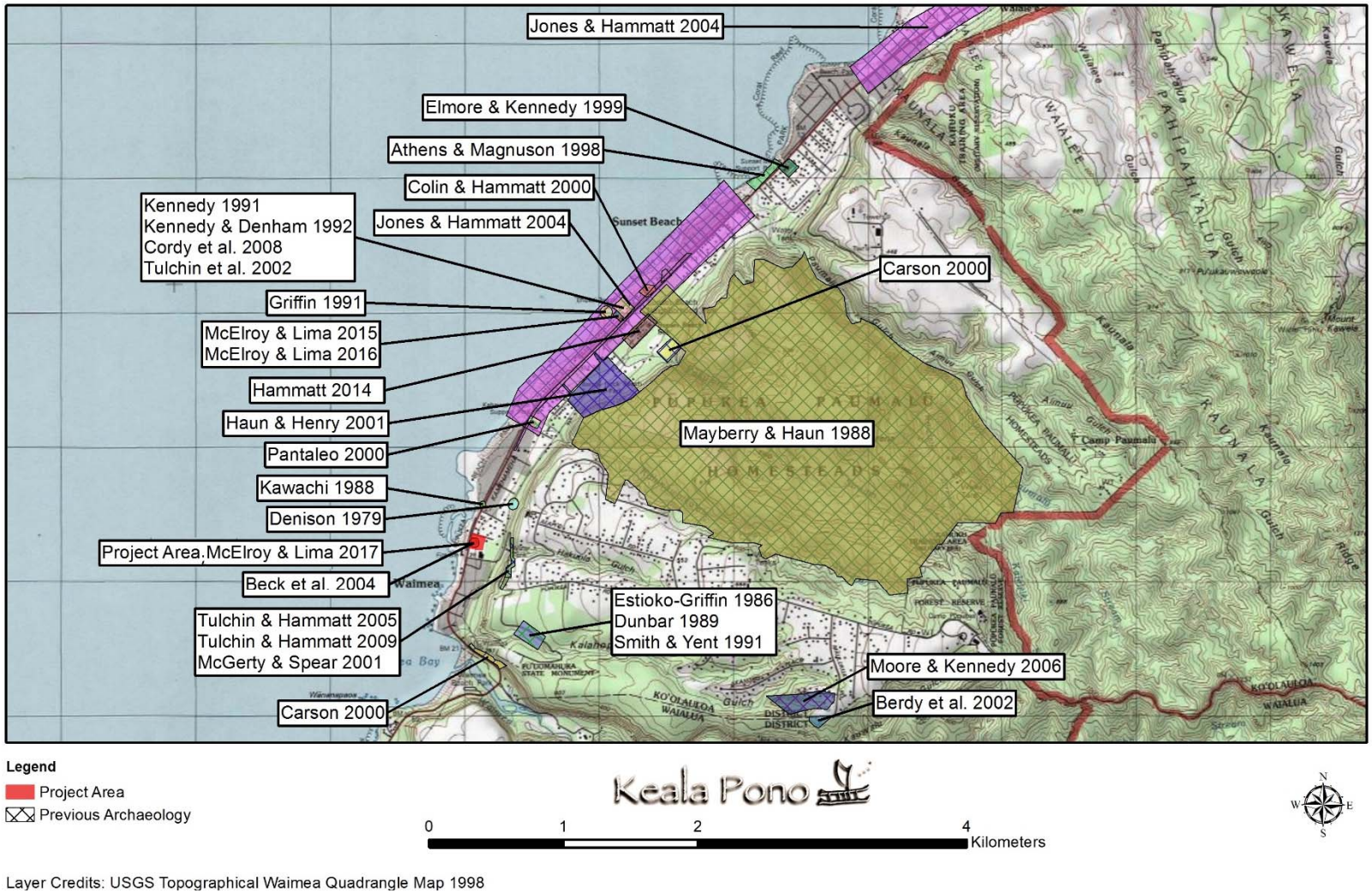
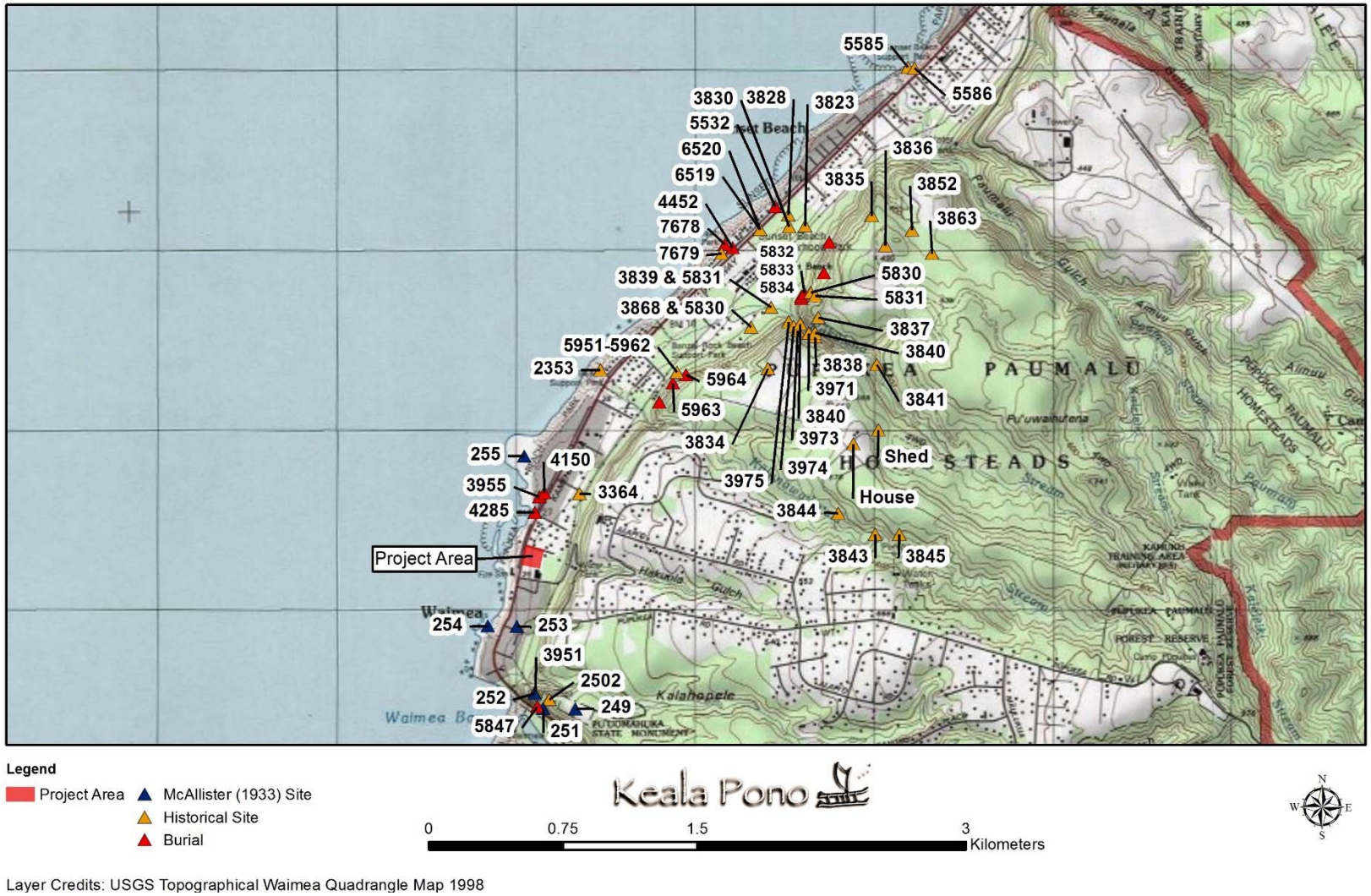


Figure 7. USGS 1962 aerial photo of Pūpūkea.



Layer Credits: USGS Topographical Waimea Quadrangle Map 1998

Figure 8. Location of previous archaeological studies in the vicinity of the project area.



Layer Credits: USGS Topographical Waimea Quadrangle Map 1998

Figure 9. Location of known archaeological sites in the vicinity of the project area.

Table 1. Previous Archaeology in Pūpūkea

Author	Year	Location	Work Completed	Findings
McAllister	1933	O‘ahu	Survey	Recorded 5 sites in Pūpūkea: 249, 252, 253, 254, and 255; none are near the project area.
Denison	1979	Mauka of Pūpūkea Beach Park	Reconnaissance	Recorded SIHP 3364, a rectangular enclosure thought to be a historic animal pen.
Estioko-Griffin	1986	Pu‘u o Mahuka Heiau	Historical Overview	Provided historical context for the heiau.
Kawachi	1988	Mauka of Pūpūkea Beach Park	Burial Report	Recorded a human burial, SIHP 3955.
Mayberry & Haun	1988	Pupukea-Paumalu Development Project	Reconnaissance	Identified 60 sites, mostly economic or agricultural, with some military or mortuary/ceremonial.
Dunbar	1989	Pu‘u o Mahuka Heiau	NRHP Nomination	Completed NRHP nomination forms for Pu‘u o Mahuka Heiau.
Kawachi & Smith	1989	Mauka of Pūpūkea Beach Park	Burial Report	Documented SIHP 4150, a human burial.
Griffin	1991	‘Ehukai Beach Park	Burial Report	Recorded SIHP 4452, a human burial.
Kennedy	1991	‘Ehukai Beach Park	Inventory Survey	Negative findings.
Smith & Yent	1991	Pu‘u o Mahuka Heiau and Vicinity	Mapping and Subsurface Testing	Mapped Pu‘u o Mahuka Heiau (Site 249) and two walled enclosures (SIHP 2502 and 3951). Excavations at the heiau returned radiocarbon dates in the late-1700s to early-1800s.
Kennedy & Denham	1992	‘Ehukai Beach Park	Monitoring	Documented SIHP 4452, a previously recorded human burial, as well as scattered human remains, a firepit, and several artifacts.
Athens & Magnusen	1998	Sunset Beach	Inventory Survey	Identified subsurface midden deposits, SIHP 5585 and 5586.
Elmore & Kennedy	1999	Sunset Beach	Monitoring	Negative findings.
Carson	2000	Mauka of Sunset Beach	Survey	Identified 5 sites, SIHP 5830–5834, including habitation, agricultural, and human burial areas.
Colin & Hammatt	2000	Ke Nui Rd.	Burial Disinterment	Reported on SIHP 5532, a human burial.
Pantaleo	2000	Sunset Beach Recreation Center	Literature Review and Field Inspection	Negative findings.
Haun & Henry	2001	Sunset Beach Agricultural Subdivision	Inventory Survey	Recorded 14 sites, SIHP 5951–5964, consisting of burial, agricultural, and water storage locales. The burials were multiple individuals found in caves, one with the remains of a burial canoe.
Berdy et al.	2002	Pūpūkea Road	Inventory Survey	Negative findings.

Table 1. (Continued)

Author	Year	Location	Work Completed	Findings
Tulchin et al.	2002	‘Ehukai Beach Park	Monitoring	Identified four additional firepits of SIHP 4452.
Beck et al.	2004	Portion of the Current Project Area	Site Assessment Survey	Negative findings.
Jones & Hammatt	2004	Kamehameha Hwy.	Monitoring	Identified SIHP 6519, two human burials; as well as 6520, a firepit.
Tulchin & Hammatt	2005	Pūpūkea Rd.	Field Inspection & Literature Review	Recorded 5 sites: two historic roadbeds, two burial caves, and a historic storage cave. Four possible shelters were noted as potential sites. SIHP numbers were not assigned.
Moore & Kennedy	2006	Mālukua Rd.	Inventory Survey	Identified SIHP 6760, a historic water tank.
Cordy et al.	2008	‘Ehukai Beach Park	Monitoring	Negative findings.
Tulchin & Hammatt	2009	Pūpūkea Rd.	Inventory Survey	Documented 5 sites: SIHP 7034–7038, including historic features, a trail segment, burial caves, and a temporary habitation shelter.
McGerty & Spear	2011	Pūpūkea Rd.	Monitoring	Negative findings.
Hammatt	2014	Sunset Beach Elementary School	Monitoring	Negative findings.
McElroy & Lima	2015	Near ‘Ehukai Beach Park	Burial Site Component of an Archaeological Data Recovery and Preservation Plan	Set forth guidelines for treatment of SIHP 7678, a human burial that had been disturbed during initial construction on the property.
McElroy & Lima	2016	Near ‘Ehukai Beach Park	Monitoring	Identified SIHP 7679, a subsurface cultural layer with firepits.
McElroy & Lima	2017	Current Project Area	Archaeological Inventory Survey	Negative Findings.
No Report Found		Sunset Beach		SIHP 2353 is a series of petroglyphs in sandstone reef at Sunset Beach; a report on this site was not found in the SHPD library.
No Report Found		Mauka of Pūpūkea Beach Park		SIHP 4285 is an inadvertently discovered human burial; a report on this site was not found in the SHPD library.

uncovered during residential construction in the area (Kawachi and Smith 1989). The remains were designated as SIHP 4150. Another set of remains was documented for the area mauka of Pūpūkea Beach Park, but the original report that recorded the find could not be located. The remains, designated as SIHP 4285, were reported as a known site in a later archaeological report (Tulchin and

Hammatt 2005). These four sites (an enclosure and several sets of human remains) are the closest archaeological sites to the project area (see Figure 8).

Archaeological reconnaissance with subsurface testing was conducted for the 1,130-acre Pupukea-Paumalu Development Project (Mayberry and Haun 1988). A total of 60 sites were identified (SIHP 3820–3873, 3971–3976, and 5830–5832), most of which were economic or agricultural, and some military or mortuary/ceremonial. Archaeological inventory survey was later conducted along one of the cliff areas covered by the reconnaissance (Carson 2000). Habitation, agricultural, and human burial sites were identified (SIHP 5830–5834).

Various work was completed at Pu‘u o Mahuka Heiau. The first was a historical overview of the area (Estioko-Griffin 1986). Subsequently, the site was nominated for the National Register of Historic Places (NRHP) (Dunbar 1989). A 1991 report documented work completed at three sites in the area: Pu‘u o Mahuka Heiau (Site 249), and SIHP 2502 and 3509, which are walled enclosures (Smith and Yent 1991). The enclosures are near the heiau but outside the State Park property. All three sites were mapped with a transit, and subsurface testing was conducted at the heiau. It was reported that “subsurface testing confirmed the presence of intact cultural deposits at the site and revealed two paving episodes in the eastern enclosure [of the heiau]” (Smith and Yent 1991:32). Two radiocarbon dates indicate construction or refurbishing of the heiau in the late-1700s or early-1800s (Smith and Yent 1991:34).

Several studies took place at ‘Ehukai Beach Park. An early archaeological inventory survey had no findings (Kennedy 1991), but later studies identified a human burial (Griffin 1991), scattered human remains, and a firepit, all grouped together under SIHP 4452 (Kennedy and Denham 1992). The firepit was radiocarbon dated to cal. AD 1153–1421 (Kennedy and Denham 1992:24). Artifacts collected include a possible kukui nut candle, files and abraders, a broken adze, basalt flakes, and an iron ball. Later monitoring revealed four firepits, which were included with SIHP 4452 (Tulchin et al. 2002). Two radiocarbon dates were obtained: cal. AD 1410–1530 and 1650–1960 (Tulchin et al. 2002:29). Another monitoring project at ‘Ehukai Beach Park yielded no findings (Cordy et al. 2008).Very close to ‘Ehukai Beach Park, a burial site component of an archaeological data recovery and preservation plan was prepared for a privately owned beachfront parcel (McElroy and Lima 2015). The plan set forth guidelines for treatment of SIHP 7678, a human burial that had been partially disturbed during initial construction on the subject property. Archaeological monitoring of construction identified an additional site, SIHP 7679, a subsurface cultural layer with five firepits (McElroy and Lima 2016). A sample of kukui nutshell returned a conventional radiocarbon age of 200±30 BP, which calibrates to AD 1650–1685, AD 1730–1810, and AD 1925–Post 1950 (McElroy and Lima 2016:44–45).

Archaeological inventory survey was conducted at Sunset Beach (Athens and Magnusen 1998). Two subsurface midden deposits, SIHP 5585 and 5586, were identified. A radiocarbon date of cal. AD 1502–1652 was obtained for Site 5585 (Athens and Magnusen 1998:ii). Archaeological monitoring was later carried out for park improvements across the street, but there were no findings (Elmore and Kennedy 1999).

A human burial was found on Ke Nui Road (Colin and Hammatt 2000). The burial was thought to be traditional Hawaiian and was designated as SIHP 5532. Not far from this, archaeological monitoring was performed for the installation of a water main along Kamehameha Highway (Jones and Hammatt 2004). SIHP 6519 and 6520, consisting of human burials and a firepit, were found near the Sunset Beach Neighborhood Park. SIHP 6519 included two individuals identified as a young adult female and an adolescent of undetermined sex. SIHP 6520 is a firepit that was radiocarbon dated to cal. AD 1620–1960 (Jones and Hammatt 2004:34).

Archaeological inventory survey was conducted for the Sunset Beach Agricultural Subdivision, located on the mauka side of Kamehameha Highway (Haun and Henry 2001). A total of 14 sites were recorded (SIHP 5951–5964), including caves, walls, cisterns, and alignments. Feature functions were listed as burial, agricultural, and water storage. The burials were found within two caves (SIHP 5963 and 5964), which each contained the remains of multiple individuals. Fragments of a burial canoe were also found within one of the caves. The agricultural remains are thought to be ʻuala fields that date from the mid-1600s to the mid-1800s (Haun and Henry 2001:33).

Several studies were completed for rockfall mitigation on Pūpūkea Road. An initial field inspection and literature review recorded five sites consisting of two historic roadbeds, two burial caves, and a historic storage cave (Tulchin and Hammatt 2005). Four possible shelters were also noted as potential sites; these were four overhangs and a lava tube. SIHP numbers were not assigned at the time. Archaeological inventory survey assigned SIHP numbers to the five sites recorded earlier (SIHP 7034–7038) (Tulchin and Hammatt 2009). SIHP 7034 and 7035 are historic roads, while 7036 is a traditional or early historic trail. SIHP 7037 consists of historic storage caves, while 7038 includes six burial caves and a temporary habitation shelter. Charcoal recovered during excavation of the shelter returned a radiocarbon date of cal. AD 1440–1640 (Tulchin and Hammatt 2009:71). Archaeological monitoring was later conducted for Phase I of the project, and no new sites were documented (McGerty and Spear 2011).

An archaeological inventory survey in upper Pūpūkea identified one site (Moore and Kennedy 2006). The site is a historic water tank that was designated as SIHP 6760.

Site 2353 consists of petroglyphs carved into the limestone reef at Sunset Beach. The site is reported as previously identified (e.g., Tulchin et al. 2002), but the original report documenting the petroglyphs was not found in the SHPD library.

Several projects produced negative findings. These consist of a literature review and field inspection of the proposed Sunset Beach Recreation Center (Pantaleo 2000), an archaeological inventory survey of private property along Pūpūkea Road (Berdy et al. 2002), and archaeological monitoring at Sunset Beach Elementary School (Hammatt 2014).

Finally, what was called a "site assessment survey" was completed for a portion of the current project area (Beck et al. 2004:13). At the time of the survey, the project area was listed as TMK: (1) 5-9-011:017, and 2.143 acres were covered, consisting of all of the current parcel 070 and the mauka portions of parcels 68 and 69. There were no findings, and evidence of recent dumping and farming were reported. No subsurface testing was conducted. A recent archaeological inventory survey at the current project area also produced no findings (McElroy and Lima 2017). The archaeological work included pedestrian survey that covered 100% of the 1.1 ha (2.72 ac.) project area, as well as test excavations consisting of 11 trenches. It was found that the entire area has been disturbed by modern activity, such as bulldozing and paving.

Summary of Background Research

Pūpūkea is an area rich in pre- and post-contact history. With a traditional economy based largely on fishing and marine exploitation, the coastline was an important resource for the people that lived there. Because of the dearth of fresh water, wetland agriculture was not widely practiced, and dryland farming focusing on ʻuala cultivation factored largely into traditional lifeways.

The historic period brought about widespread changes to the Pūpūkea landscape. Crops such as avocado and pineapple were farmed, and large tracts of land supported housing developments. The

OR&L railroad ran just makai of the project area, transporting sugarcane from the north shore plantations. The Niimi store was an important edifice at the project site in the early 20th century.

Although no archaeological sites are known for the current project area, previous archaeological work nearby has had significant findings. The four archaeological sites closest to the project area consist of several human burials and an enclosure. A variety of site types have been documented in other parts of Pūpūkea, with human burials found near the coast and in caves. Traditional agricultural, ceremonial, and habitation areas, as well as a variety of historic sites have also been documented for Pūpūkea.

ETHNOGRAPHIC SURVEY

There are some things that cannot be found in the archives, in textbooks, or at the library. It is here, through the stories, knowledge and experiences of our kamaʻāina and kūpuna, that we are able to better understand the past and plan for our future. With the goal to identify and understand the importance of, and potential impacts to, traditional Hawaiian and/or historic cultural resources and traditional cultural practices of Pūpūkea, ethnographic interviews were conducted with community members who are knowledgeable about the project area.

Methods

This Cultural Impact Assessment was conducted through a multi-phase process between April and June 2017**.** Guiding documents for this work include The Hawaiʻi Environmental Council's Guidelines for Assessing Cultural Impacts, A Bill for Environmental Impact Statements, and Act 50 (State of Hawaiʻi). Personnel involved with this study include Windy McElroy, PhD, Principal Investigator of Keala Pono Archaeological Consulting and Dietrix Duhaylonsod, BA, Ethnographer.

Interviewees were selected because they met one or more of the following criteria: 1) was referred by Keala Pono Archaeological Consulting or Group 70; 2) had/has ties to the project area or vicinity; 3) is a known Hawaiian cultural resource person; 4) is a known Hawaiian traditional practitioner; or 5) was referred by other cultural resource professionals. Three individuals participated in the current study. Manaʻo and ʻike shared during these interviews are included in this report.

Interviews were taped using a digital MP3 recorder. During the interviews, each person was provided with a map or aerial photograph of the subject property, the Agreement to Participate (Appendix A), and Consent Form (Appendix B), and briefed on the purpose of the Cultural Impact Assessment. Research categories were addressed in the form of open questions which allowed the interviewee to answer in the manner that he/she was most comfortable. Follow-up questions were asked based on the interviewee's responses or to clarify what was said.

Transcription was completed by listening to recordings and typing what was said. A copy of the edited transcript was sent to each interviewee for review, along with the Transcript Release Form. The Transcript Release Form provided space for clarifications, corrections, additions, or deletions to the transcript, as well as an opportunity to address any objections to the release of the document (Appendix C). When the forms were returned, transcripts were corrected to reflect any changes made by the interviewee.

Several potential interviewees were contacted, resulting in the three interviews (Table 2). One of the interviewees requested that their name and transcript be kept confidential. The ethnographic analysis process consisted of examining each transcript and organizing information into research themes, or categories. Research topics include connections to the project lands, archaeological sites and cultural practices, the natural environment, Pūpūkea history, change through time, and concerns and recommendations for the project. Edited transcripts are presented in Appendices D and E.

Interviewee Background

The following section includes background information for each interviewee, in their own words. This includes information on the interviewee's ʻohana and where the interviewee was born and raised. The interviewees are Bob Leinau, Thomas Shirai, Jr., and a third anonymous interviewee. Background information on this latter interviewee is not included here to preserve anonymity.

Table 2. List of Individuals Contacted

Name and Affiliation	Method of Contact	Result of Contact
Anonymous Community Member	Phone, In-Person	Interview Completed
Roberts Leinau (Community Member, Mālama Pūpūkea-Waimea)	Email, Phone, In-Person	Interview Completed
Makua Rothman (Community Member, Professional Surfer	Email, Phone (Via Manager Tautua Reed)	Interview Could Not Be Scheduled
Thomas Shirai, Jr. (Community Member, North Shore-Waialua descendant, Oʻahu Island Burial Council)	Email, Phone, In-Person	Interview Completed

Roberts (Bob) Leinau

Aloha, my name is Roberts Leinau, otherwise known as Bob. I was born in Connecticut, raised in Southern California, came to Hawaiʻi in 1965, moved to North Shore in 1968 to go surfing, and I'm still here. I went to the University of Southern California. I was in premed. I took tons and tons of chemistry, a lot of science classes, and German. I don't have any family roots in Hawaiʻi. However, my family came to America on the Mayflower. They signed the Declaration of Independence. And most of my family line are doctors, on one side. The other side of the family was somebody several generations ago made a pile of money that kind of disappeared, and I never got to inherit any of it. But my relatives were really rich.

Thomas (Tom) Shirai, Jr.

My name is Thomas Shirai, Jr. I was born on September 29, 1961… I was born in Kapiʻolani Hospital, but I was raised the majority of my life by my grandparents, my mom's parents, in Mokuleʻia. My parents are Thomas Shirai, he's from the Big Island of Hawaiʻi, from a place called Papaikou. And my mother is from this region. And her name is Laverna Keao…She was born in Waialua. And the extent of the Waialua lineage is on my grandpa's mother's side. It goes further back several generations, before pre-Western times.

And so my father had tuberculosis, and he was an in-patient at Leʻahi Hospital. And so in the Hawaiian fashion, Hawaiian tradition, I'm the oldest grandchild, they mālama that one first, and it was mostly like a direct order, "the boy coming with us," no ands, ifs, and buts, just cut and dry. And so I was there. I was nurtured. And through that life experience, I learned only majority on the Hawaiian side of the family.

…I went to Mother Rice preschool. And then I went to Ala Wai Elementary School. I went to Washington Intermediate School. And then here's the turning point. The first half-year of my sophomore year, I went to Kaimukī High School. Ok, we lived right by Crane Park. I grew up there. See, I had two homes. On the weekdays, during the schooling, I lived with my parents. But on the weekends, I belonged to my grandparents down in Mokuleʻia. And that's the part I enjoyed the most, spending time with my grandparents.

Topical Breakouts

The following sections are quotations from the interviews, organized by topic. Interviewees provided information on their connections to the project lands, archaeological sites and cultural practices, the natural environment, Pūpūkea history, and change through time. They also shared their concerns and recommendations for the proposed Pūpūkea Commercial development. Whereas excerpts from the anonymous interviewee are not included in the topical breakouts, information provided by this interviewee has been added to the Summary of Ethnographic Survey section and Summary and Recommendations chapter.

Connections to the Pūpūkea area

Ok, my grandfather was an esteemed carpenter for Waialua, and one of the testaments to his quality workmanship is that he remodeled Otake Store, and it's still standing today. Another project is when they first came up with Meadow Gold Dairies, he's the guy that was the supervisor in charge of building the structures for Meadow Gold Dairy. And another project would be in Pupukea, when Mr. Sullivan used to have a mansion up on Pupukea, the hills. He's the Foodland manager, the owner. He [my grandfather] did some repair work over there. But more specifically, to this specific project area, my grandfather was hired by Mrs. Elaine Niimi, who was a realtor. And he did many a repair work for her, and some of the repair work [that my grandfather did] was done on that specific parcel [of the project site] when it was houses and structures for rental, mostly for housing rental, yeah? So I used to go with my grandfather and my uncles, and they did a lot of carpentry work. Plus for me personally, the most construction work that I did for them was that I helped do the roofing for both houses with my grandfather and my uncle. So that brings memories… The fire station, I can say some more personal accolades, like my uncle was a fireman over there. [Tom Shirai]

…I have a lot of family up in the Pupukea hills especially, branches of my grandpa's family, cousins, uncles, aunties, and so on and so forth. And some of em still reside there 'til today, and friends and classmates and all those kind of things. But more significantly is when I started to do my genealogy research, and researching my family's legacy, I come to find out [laughs], they own some unique parcels down there. I may be on that property [for the project we are talking about], it says Pupukea. And so I thought that was unique, and that's why I thought, …[to] add that to the discussion and history of the place. So I did get the Land Commission Award to see, and I was like, "Wow, that's pretty unique." I didn't know they had parcels all over the place. [Tom Shirai]

There is one thing I can share aesthetic-wise, every Sunday, I'm familiar with that area because when I was growing up, my grandmother was a Jehovah's Witness, and the church was at Sunset Beach. I have an uncle, an aunty, and my cousins, and my aunty's family, the Mira family, donated land at one time to build the Kingdom of Jehovah Witness [church] over there. It's on their property, so we got to go there. And my uncles, and my grandfather-them, they kōkua little bit, help construct that church. And my grandmother, being that [she was] Jehovah Witness, we go there, we pass there. And let me tell you, Koa, I saw a sight, just like it's a once-in-a-lifetime. You could see, from Kamehameha Highway, when you just past there, one day we saw the island of Kaua'i. You could see Kaua'i, one very clear, clear day, the kine like how you see right now from here to Mount Ka'ala, like that kind, but was a clear day. You can see the whole mountain, no moa clouds, and was clear, was sunny. There is a newspaper article that shows the picture, but you gotta dig for em. I seen em, I remember, I saw that picture. It's a color picture. So it must be in the Advertiser or Star Bulletin archives. It was a beautiful picture, a once-in-a-lifetime. [Tom Shirai]

But that parcel, a couple streets away from there, my grandfather had a good friend who was in the Army. He was a dentist. And his name was George Koranawsky, and he's Ukranian. He's from New York, and we call him my grandfather's Haole son. He loved my grandfather. My grandfather loved him and helped him a lot. Today, he's not only a successful doctor, but also an orthodontist, an orthopedic surgeon for the mouth. Doesn't stop there, he's a multimillionaire today. He owns a hotel or condominium in Atlantic City. He came that successful because my grandfather helped him with a lot of life skills and stuff like that. He did a lot of repair work for him too because he was in real estate. And he had his house, and he had a plumeria farm. And my grandparents used to go down dea cut the grass and stuff like that. So it was an established relationship with people like Chuck Machado Lu'au, you know, that kine stuff li'dat. So that's what I can share about Pupukea. [Tom Shirai]

Ok, so I moved to the North Shore in 1968, and I have been active in community affairs since 1968. And I have been active on the neighborhood board for almost 40 years now, ever since its inception. And I worked in a historical park in Waimea Valley for over 30 years. And so I've always been paying attention. I give classes on the history of Waimea Valley to the lifeguards every summer, to the junior lifeguards. And so people seem to think I know more than the next guy... [Bob Leinau]

Pūpūkea History

So I can give some general references to this specific piece of property. If you go all the way back, if you go back to Kamapuaʻa, These lands were given to Kamapuaʻa by Lonoawohi. Olopana was not friends with his illegitimate son Kamapuaʻa, and so he caught Kamapuaʻa finally after many years, and took him to a heiau to be killed. And Lonoawohi the kahuna flipped. They grabbed the, this is where I always get scrambled on names here, but they grabbed the other chief, spared Kamapuaʻa's life, and he was very grateful. So he received all the lands with wai, so that included Hakipuʻu, Waiahole, Waikāne, Waimea, and Pupukea, were the lands that he ended up with eventually. His family felt that there were too many "wai"-lands that got given away. And so the Pupukea lands, the land that this development is on, was dedicated to the Paʻao class. And they held those lands all the way through to from about 1095, what have you thereabouts, all the way through to when [the kahuna] Hewahewa came. When Kamehameha came and conquered, everybody who came and conquered put their kahuna in there, the Paʻao class [of priests]. And Hewahewa died in 1837. So that was pretty much the end of the kahuna tenure. [Bob Leinau]

Ok, so you have this area that's very rich along the sea. And then of course the mauka lands always provided whatever they did. In later years, of course, they provided the sandalwood, which was the original currency for the Hawaiians and changed their lifestyle around significantly. Even Kamehameha had already bought guns with revenues from sandalwood. So Waimea was actually a port. The ships would pull in to a deep, sandy cove there. And so sandalwood was going on there probably until around 1830, when it pretty much went away. And there are still some big anchors. There's one big giant anchor off the point still. It's probably from those times with the big flukes on it. [Bob Leinau]

The other thing that is important, I think, is that as this project moves forward, is to consider the adjacencies in the context of the area. That area also had some Hawaiian references to Pele when she came through there. If you look to the north out at Ke Iki Point, out at Kalalua Point, there's that Ukali O Pele, which are stones, coral stones, that Pele turned a family into stone. I'm not real clear whether she did it as a favor for them to guard the area, or if they were nīele, and she did it as a punishment. But the Ukali O Pele are still out there. [Bob Leinau]

The other story that ties to the area is Hiʻiaka was in the area in Waimea, and she saw a handsome kanaka there. He was a lawaiʻa. He was a heʻe nalu, a surfer. He was a konohiki. And his name was Piliʻaʻama. And as the story goes, she kinda liked the looks of this guy, a handsome guy, and she chased him. She went after this guy, and he ran away. And there's rock on the side of Kamehameha Highway that still has his footprint in it where he dove into the cliff and disappeared. [laughs] [Bob Leinau]

There's also the story of Kaluaomaua. The Three Tables area, there's the story of a lady who, one of the ways that you could get fresh water was to go out with a gourd and collect water from underneath the ocean. You could tip it over, and it would suck in fresh water from where the water was coming out, the wai. And so she went out there, collecting water for her people and didn't come back. But there's three corals that float there, and supposedly she turned into the lua, or the rocks where that water comes out. [Bob Leinau]

So the Hawaiian culture and the stories of that area are rich. There's another one, with Puʻu O Mahuka heiau up on the top of Pupukea bluff. On the Hawaiian Islands there were a lot of trails. You know, [like] on Maui there was a highway, we call it a highway. But they

had a ala, and it's said that the trail went through the Hanapohaku property, and that still to this day, night marchers move down that road from time to time. And people along that coastline there have things that happen at night in their houses where things are moved, and nobody knows how that went happen. So the story of the night marchers and Puʻu O Mahuka is very much alive too. [Bob Leinau]

Going back down to the property, the great Māhele guys started buying large grants. Pupukea, the first crops up there, Libby had pineapple up there. There was, I can't remember the guy's name right now, he had avocados. There was an acerola farm up there. There were several dairies up on the hill. And so the government ran a road down called…the Old Government Road. It ran through the Boy Scouts Camp. And it came all the way down to the juncture of Pupukea Road where Foodland is now, and where Niimi Store was. [Bob Leinau]

The Niimi Store was built shortly after Dillingham's railroad came out. I think it was built in like 1902 or something. And that was a real focal point. I believe the train stopped there. The farmers had a chance to load or unload. And so the store was a real hang out. It was a place that the people could do commerce. There was not a lot of commerce on the north shore. So that was probably the first store that I can think of that would have been in business. So that was all part of the Hanapohaku three parcels. The Niimi family had a retail operation in Kahuku, and they moved it down to Pupukea when they attained the ownership. And it did a lot of things. You know, it was food, it was a feed store for everybody who had chickens. There was a nursery there for a while. They had a lot of stuff. [Bob Leinau]

The Natural Environment

It was also called "Kapoʻo." Kapoʻo describes the nature of the area right across the street where the waves come and hit the coral reef, the shelf, and they splash way up in the air. So not only do people come to this area for diving and because this is a marine life conservation district there. There's a mile of coastline today. But they also stop to see these waves, these giant waves exploding on the coral. Actually it isn't coral. It's coral-algaenous. Most of that reef was put down by algae that glues it all together, but that's another story. [Bob Leinau]

And so one story I heard was that at the back side of this property, there was a spring. And I have every reason to believe that's probably true especially when it's considered in proximity of Hauola. And if you dive the coral reef along the coral facing there at Kapoʻo, you'll see a lot of fresh water seepages coming out. Its' dissolved holes in the karst land and in the coral. So this area has fresh water underneath the alluvium. Ok, so that's a little bit about the geology. [Bob Leinau]

Actually, the reef structure, that structure at Ke Iki Beach, when it goes out to Kalalua Point, is a very large coral-algaenous structure, and it turns into a coral, you know, a vertical face. And I'm told that's the largest coral vertical face, or coral-algaenous vertical face, on the island. It's a unique structure. And it is the area that kinda goes down to just about where the fire department is. So it's pretty much from Shark's Cove to the fire department, is the area I think is Kapoʻo. But I don't know if they were really heavy about metes and bounds. The area was referenced as Kapoʻo because of the nature of the waves. [Bob Leinau]

You know, I wish I knew more. We're always trying to find names. One of the names I've been told for Shark's Cove, clearly that wasn't a Hawaiian name, but I asked Richard Spillner, who was born on the beach at Waimea Bay in 1933 or '34, what they called Shark's Cove when he was growing up. And he said that they called it "Koʻa" meaning "Chunks of coral," because the waves blast in there so big that it really doesn't have a sand beach. It has chunks of coral. So actually "Koʻa Cove" would be a really appropriate name.

And it may very well be the name that's been there for a very long time, but I've never been able to find it in print. [Bob Leinau]

Well, the fishing's already kapu except at Waimea Bay where you can have two poles, two hooks. The rest of it is considered poaching. But you know, the Hawaiians had kapus too. And the whole near shore waters on this whole island has just been raped. Most people think that the marine life conservation district [fronting the project site] works, is a good idea. Some of them don't. Some say, "You took something away from me." Other people understand there's a spillover in the wind, and that there's something for future generations. That's the real objective, to teach people. Wouldn't it be nice if you could take your kid down and show em schools of uhu? Well I've swam twice from Waimea Bay to Hale'iwa in the last couple years and not seen one uhu…So the word "sustainable" gets thrown around a lot, but we crossed that line a long time ago, and we need to reel this puppy back in. And the "we" should be all of us. Unfortunately there are guys that say, "Eh you trying to take something away from me, brah." You know what, hey wake up. [Bob Leinau]

Archaeological Sites and Cultural Practices

Ok, I can share little things like I know there's a Hawaiian name, that I don't know off hand, for Shark's Cove. But I also know that old-time fishermen and residents of all nationalities used to go there with bamboo pole whip and catch fish, like nenue especially. [Tom Shirai]

Of course you see the Three Tables. Everybody knows that. And there's a Hawaiian name for that. It's the "Pele Stones" and what not and stuff. [Tom Shirai]

…I would say that this project is not near cliffs, yeah? And those cliffs are documented, such as being burial caves. And that's a hot issue. What I could share is that one of your reference points that is near there would be, besides the Waimea Valley, is that when they realigned Kamehameha Highway, going around the rockfall mitigation, you know, the exposure of iwi kupuna in burial caves, you know, the grading or whatever they needed to make, or for the landslide or rockfall, they did come across that [iwi kupuna]…So that's why you see certain parts with the netting over there, and the netting is hugging the edges over there. That's why it's like that, you know, at various locations around the mountains and stuff. It's a known place for those things. So that's one of the first cultural things that's gonna come up. It's burials in caves. Yes, we get [iwi] in the sand at various places and stuff, but mostly the sensitivity is directed more so towards the cliffs, the foothills, and what not. [Tom Shirai]

So going back to Pupukea, the way the lands were used, of course there was the mauka/makai. The makai side, of course, was really important because of its fisheries and food sources. There's still to this day, over 21 kinds of limu growing on the papa right now. And it's been known for its good fishing until recent times when it pretty much got wiped out. [Bob Leinau]

So also in this area, up on the bluff above Pupukea, is Pu'u O Mahuka Heiau which is the largest heiau on the island [of O'ahu]. [The kahuna] Ka'ōpulupulu reputedly built that. That would have been in the mid-1770s although lots of temple sites were built in sequence. This particular one has celestial coordinates. It lines up exactly with summer solstice, and there's a step down which lines up exactly with the equinox. And so these things weren't randomly done. This one was supposedly a luakini heiau. And of course, in 1819 when Kamehameha died, Hewahewa, the kahuna in Waimea Valley, along with Ka'ahumanu and Liholiho, sat down, broke the kapu of eating, they broke the 'ainoa, or had an 'ainoa, I guess, it was free. And after that they went up, and all the heiau fell into disrepair, and the tikis were destroyed. [Bob Leinau]

There are two tikis, however, that did come out of Waimea Valley. In Waimea Valley, there were a lot of burials, and all along the pali on both sides of Waimea Valley. There's

a lot of lava tubes and a lot of burials. So it's reasonable to assume that there were probably burials all along the mauka side. Also, just above the mauka side, just above this property, there's a drainage of a gulch. The gulch is called Hauola. Hauola might be interpreted as "a healthy hau," I don't know, but it drains out. And all along that pali, there were water seeps. And of course, where water was, it pretty much drove where the Hawaiian population went. Every living thing on the planet needs fresh water. [Bob Leinau]

So there's the broader context that goes beyond the metes and bounds of the property. And I think it's important to keep those stories alive. Keep the culture strong. So if Hanapohaku comes in, they need to be respectful of the broader context of the adjacencies, and that deals with their customers. Their customers can overwhelm the City & County park next door where practitioners still go and collect limu, hālili. And also, out on the point right across the street, this was an area where Hawaiians gathered paʻakai. There's large salt pans out there on the coral and flattened out. And so these things are all remnants and relics and touchstones for Hawaiian culture. [Bob Leinau]

Actually there's one other burial that I heard of. I think that it was during the time that the people were getting smallpox. I heard that at Kaluaomaua, the last set of rocks before you go out, that there was a mass burial there at one time. A lot of people died, and rather than go up in the caves, they just went to the soft sand. [Bob Leinau]

But, you're not supposed to take rocks that have life on them, not supposed to take coral. The idea is you take pictures. But the salt pans are still there, and if someone took some salt, no one's gonna make huhū about that. And the guys who collect limu, you're allowed to take limu kohu and līpēpē, are the two types that you're allowed. You're allowed a wet pound per person per day. And of course it was harvested at that rate, there wouldn't be any. So they oughtta kapu that too. [Bob Leinau]

Change Through Time

And that area, you know that coral area that's right next to it?... Yeah, that was formed mostly because of dynamite blasting because they were mining for a little while. And that's why it's shaped like that. [Tom Shirai]

All I can say is as time goes by, you get modern development, and what was once to me sporadic, isolated lunch wagons, now it's just like it's becoming their own industry. We got like, my goodness, like here in Haleʻiwa, like 23 lunch wagons. It's like an "easy-out" instead of going to one restaurant. And it adds to social problems like traffic, the ʻōpala, and all that kine stuff... you have a once pristine, sleepy town turned into a tourist trap. How I can best say it, like for example, like Baja, Mexico, or Tijuana, you know, you see what happened, that kine stuff. It's all catered to tourists. Haleʻiwa is that way. Lahaina is like that. And what I'm very, very saddened by is that then you have this influx of people coming from all over, and then that influx, with each layer coming, then the original culture gets covered, layer after layer after layer, until it's way under, or unheard of, or erased. And that's the kind of things that saddens a lot of us. You know, Haleʻiwa, for example, we have the North Shore Chamber of Commerce. Yes, they wanna preserve the historic Haleʻiwa, yes, but their emphasis is the plantation era, or the World War II era. When you go into their office, the memorabilia reflects that. There's no pictures of taro patches. There's no pictures of excerpts of Land Commission Māhele maps, none of that. It shows people dressed in military clothes, that's it, it shows military people at Haleʻiwa Beach Park. And to me, sure it's part of the history, but you're not telling the full story. You're not telling the full story of the place. And that hurts. We see it come alive only when they make books, for profit. Then we'll see, "Oh we got this from archival photographs." This and that and stuff, and it's like, "Why didn't you say that from the very beginning?" Now people are only gonna focus on this as a World War II town. "Taro patches, what you talking about," they're gonna say stuff like that. And that's not right. [Tom Shirai]

And most of the people who lived in the area, it was very rural, most of the people had gardens, you know, they grew a lot of their own food. And if you look at the Hanapohaku development right now, it still retains pretty much the original alluvial topography with the low corner being in the direction of the west corner. So I don't think anybody did anything too much. But I think it had been cleared for agriculture. So I think the prospect of finding any rock alignments in there with cultural significance or any artifacts are probably pretty remote. [Bob Leinau]

In the last few years, well the last 30 years, a lot of people used the property pretty much as a, because it was a vacant lot, they could go back there and just dump stuff. And they did. So the current owners, one of the first things they did was go in there and clear a lot of ʻōpala out of there. And they did some minor grading, but I think if you look back over the last 100 years before, probably there wasn't any serious grading. But I think that agricultural endeavors in that area were pretty minor and just surface related. I'm trying to visualize it. [pause] So pretty much what was in there when the current owners bought it was haole koa and weeds. [Bob Leinau]

Also, there's the tables. What's interesting too is that the tide pools, when they surveyed Drum Road in 1933, and they built it in 1934, the surge rock for that road that connects Helemano all the way to Kahuku and comes up through Pupukea, was built out of coral that was blasted. Those tide pools are man-made. Before, it was a higher papa, karst formation, similar to the one at Ke Iki. Interesting, huh? [Bob Leinau]

Back then, they blasted the coral for resource. Where the Catholic Church is now was built as a quarry for blue rock to build the road from Waimea to Kahuku. That was built in 1928. And in the '50s, Castle and Cooke was mining sand in Waimea to take to Waikīkī. And Glen Pau stopped that. He went to the governor and said, "'Aʻole." [Bob Leinau]

That tower there was a silo for crushed blue rock. Trucks would drive underneath, they'd open the jaws and fill the trucks and close em. Yeah, used to have a conveyor belt that went up the backside. I must be getting old. [Bob Leinau]

Well the only historical one would have been the Niimi Store. And that was a snooker job. That was a real education. He told Elaine Niimi, and he told the community, that after he built the Foodland, that he would rebuild the Niimi Store. You know, everybody liked that store. And that was all done, and he said, "Oh I change my mind." And that was it. There was nothing. So what you learn is that you don't trust developers…Yeah, he was gonna rebuild it. That's what he said all along. And the thing that hurts is that I was a friend of the community association at the time. And I wrote the letter supporting the building of the Foodland store, you know, predicated on no loss to the community. But we did. We lost a nice historical building. It was a part of the community, it was old. But look at Haleʻiwa, that's what makes this town. [Bob Leinau]

Concerns and Recommendations

And the thing is too, it's hurtful that the tourist industry has banked on an original Hawaiian sport called surfing. They have made millions and millions, and what have they given back to the community, to improve these kinds of projects? Nothing…The thing is this. It [surfing] started out as you just go out and relax, catch a few waves and come back. When does it end with the thrill seeking, tow-in surfing, windsurfing, you know, jet ski? All we wanted to do, the purpose was to go out dea, catch couple waves, have a good time and come back in. That's it. And then when you see the advertisements, you won't see Hawaiian people out there. You see foreign people riding waves in foreign lands like South America or Mexico or California. And it's a false representation. I don't know what to say. [Tom Shirai]

Although it's just some documents that show genealogy and land tenure and stuff, at least you can see that it's Hawaiian land tenure dating back to the kingdom era. And in fact,

some of those street names are some of the kūpunas that were awarded [land claims], you know? I'll give you an example, there's in Pupukea, close by, one of the street names is Kumupali. And if you look it up, it's a kupuna, a man that was awarded a Land Commission Award in that area, you know, and that's why they get the names…Ok, I'll go and share something. I dropped a bomb [of info] on them. They thought it was just a street name, Kilioe Street. And then my question that I asked everyone was, "Do you know why that street is named Kilioe?" And nobody knew. And for you, I will share. Kilioe was the name of a kupuna that was awarded a Land Commission Award in that exact location. I said, "That's why it's called Kilioe Place." And they were like, wow. I said, "You guys didn't do your homework." These are people from this area. They are not randomly picked names. I said, "You bettah start paying attention, doing your work, then that helps you with however you wanna run with it." Do your research, then you get the kūpuna behind you. Even if you not from there, but if you acknowledge that, knowing why it's called Kilioe Place, and you can cite like one Bible verse, "Land Commission Award, so and so and so to Kilioe," then you've established a tie there and a respect…And it's another question like the story I told you before you turned on this tape recorder, about Waimea Valley. Yeah, shame. And so now I feel in my head, "Do I have to [say something]?" I'm 55 [years old] right now. You mean to say I gotta be at everything? I cannot relax? I cannot get a break from this? When you guys gonna step it up and show me something? When? I said, "This hurts me." You are supposed to be doing it, helping, and I'm supposed to relax, not me go do the ground work. [Tom Shirai]

Existing conditions, I would say that it's similar or parallel, same thing, to like how the Haleʻiwa stores project is next to the fishpond, you know. You already have leakage. You already have sewage leakage going into, you know, those type of things that they're dealing with. So it's ongoing. It's not like it was done today, or they going build em and then [now there's leakage]. Septic tanks, that's a hot topic for those projects, septic tanks versus cesspools. And so, the March Neighborhood Board, we had a special meeting I think a couple years ago at Waimea Valley. The owners and Hanapohaku made a presentation and stuff, and they heard the concerns of the neighborhood. So I letting you know. On the website, you'll see the North Shore Neighborhood Board webpage, you'll see the videos and the special meeting. You go back, and you'll see em, yeah, about a two-hour meeting. I was dea [laughs], but you know had community members. One of the biggest opponents against it was the Mālama Pupukea people, you know, the sanctuary, MLCD, Marine Life Conservation District. That's the biggest one, and I know all those people. [Tom Shirai]

Yeah, that's [sewage leakage] what they brought up, a couple lawsuits against them. They're trying mitigation and stuff of that sort. We're just an advisory board, but we're aware of those things, and that's the hot topic. Plus traffic is another big concern, traffic studies, added traffic, and so on and so forth. But those are the two main issues. [Tom Shirai]

I guess then, that if you're worried about those type of things, for the burial caves the protection would be for the social impacts of people going there and nosing around, cutting a trail, going up there and trying to scale the mountain and stuff, rock climbing or whatever… Huu, headache. I wouldn't even think about doing something like that, you know? That's unheard of because we know what going happen. You lucky if you just get one verbal reprimand [laughs]. Let's put it this way. You lucky if you can sit down afterwards [laughs]. Or, you no need go tattoo shop [both laughing], you get the same color, but more emphasis on the black and blue, that's the two primary colors. [Tom Shirai]

So if you're a Hawaiian, and you want to go down to this area, and all you see is cars and cars and more cars, hey guess what, there's no place to park. That's a bummer. Well, so go through the plan. How will this plan unfold? How much parking? How will it be with the retail square footage? Those things really are factors in the broader context. [Bob Leinau]

The other thing that needs to be considered is the waste stream. If this development is retail, maybe they'll have some cardboard boxes. If they have food and beverage all over the place, ho you going get plenty waste stream morning, noon, and night. And if the water goes into the ground, will it eventually end up on the reef? Will it change the nutrient loading? Will different limu start growing in these areas? Nature is a very delicate balance. And if these guys are too aggressive, it will affect things in a negative way. [Bob Leinau]

There's two ways [the development would affect the cultural significance of the area]. The biggest is that if they actually go through with it, and they just sell out. The other one is depending on how they do it. In other words, it's supposed to be community commercial. And will it have a nice soft cultural landscape of Hawai'i feel to it? Or will it turn into a marijuana dispensary with a bunch of derelicts hanging out? I mean, it's a huge if. They wanna do a dispensary, but they don't say what they wanna dispense. [both laughing] Let me guess. [Bob Leinau]

Ok, so if you want to make decisions about stuff, you should have data. So what the State should be doing a lot, and they don't, is water quality monitoring. And suspended solids, you know, bacterial counts, and other things are causing real problems, like the stuff in the sunscreen. It's something benzoin. I'm getting old. I can't remember everything as quick as I want. Those things, you know, if you get thousands of people coming to your spot, like they've got one of their businesses there is the snorkel guys, and the other thing is their customers, just like all the other customers, contribute to the foot traffic. So right now, we used to have a lot of accesses, and we've landscaped em out, put a fence, planted a lot of native plants, and we've got it narrowed down to a couple of accesses now. So it increases the amount of erosion in those specific areas, but on the whole, it reduces the amount of erosion because it cuts down the accesses. So if their project encourages people to come, and they're using the marine life conservation district as part of their marketing anchor destination, uh yeah, it'll have an impact on the adjacency. [Bob Leinau]

You know, they'll do a baseline, pick a day when it's not too rainy, cherry pick a day. But what you need is a longitudinal study. And no property owner feels like that's their burden. And the State, they're always cutting people's budgets. It's really hard. They don't take good care of this island. You know, our real product is the beauty of this place, and they don't get it. [Bob Leinau]

Well the developers own 10% of the road there, and the adjacent neighbors own 90% of it. And what happens is there are customers who are coming up and pissing in their yards and turning around in their driveways, and there was a lot of negative impact. So now they kind of got it blocked off. But who knows what the final shakedown will be? Nobody knows. But the neighbors have been impacted, and they don't like it. I mean, they've already been impacted [from past development]. So that's what they're looking at. [Bob Leinau]

Well, traffic engineers and the State DOT drive all that stuff. It really doesn't matter what the general public thinks. It's not a popularity, majority-rules situation. They do have, however, an agreement that goes along with that property. When Niimi got it zoned from agricultural to commercial, she had to consent to a couple of conditions that related to the property as a whole before it was subdivided into the three parcels Hanapohaku has and [the property] that Foodland has. So it says, "Make improvements to the road." Well, what does that mean? Nobody knows. I don't know what it means. Ok, so that's one of those things that's floating around out there. Nobody knows what it means. [Bob Leinau]

You know what would be nice, and a lot of people out here in Hale'iwa don't do it either, but it would be nice if they would use Hawaiian words when they can, and they would use the appropriate diacritical markings, too. It's Hawai'i, you know? And the more attention to detail, the more real it all is. And those are just little things. I've gone to a lot of shops out here [in Hale'iwa], and I say, "Why don't you make it pono? Straighten it out." I'm not trying to be pissy, maybe I am, but not for bad reasons. [laughs] [Bob Leinau]

Summary of Ethnographic Survey

The interviewees are familiar with the project area and have extensive knowledge of Pūpūkea and its surrounding region. From traditional times, the region has been connected to Kamapuaʻa who was given land there by Lonoawohi. Another prominent name which comes up in the moʻolelo is Hiʻiaka, who fell in love with a surfer from the area named Piliʻaʻama. From ancient times to the period of Western contact the Pūpūkea area had remained important. It is said that a mauka-makai trail that the "night marchers" still use runs through the project parcel. During the time of the Kamehameha dynasty, the kahuna Hewahewa lived in the area and cared for Puʻu O Mahuka Heiau. Around this time, the harvesting of sandalwood in the Pūpūkea uplands became an important industry until around 1830. Sometime in the early post-contact era, smallpox swept through the population, and a mass burial for those from Pūpūkea and the surrounding region took place in the sands near Kaluaomaua. In the latter half of the 1800s, Hawaiian families received Land Commission Awards for properties in Pūpūkea. Some of these families still live there while some have moved, but regardless they are still very much associated with this ʻāina, and some of their names are still seen in the street names of the area. Modern businesses include an acerola farm and several dairies up mauka, and pineapple farming by Libby. Arguably the most important business to the community for many decades was the Niimi Store, which was a focal point for generations of residents. The developer of Foodland promised to rebuild Niimi Store after getting community support for the Foodland development, but after building Foodland, the developer reneged on the promise.

Due to the past history of land use, there is an absence of archaeological, cultural, and natural resources on the project parcel. Likewise, there are no traditional gathering practices or other cultural traditions which take place on the property these days. This is in contrast to the shoreline across the street from the property which still has natural resources such as salt, limu, and other marine resources. While salt gathering and limu harvesting are allowed, the fish in the waters across of the project area are off limits because the waters have been designated a conservation zone. Mauka of the project parcel is the famous Puʻu O Mahuka Heiau, and beyond that is the archaeologically and culturally rich valley of Waimea. As one consultant put it, Waimea and Pūpūkea are inextricably linked, and so this adds to the overall cultural significance of Pūpūkea in general. Along the cliffs behind the project properties are documented burial caves, and where the cliffline meets the ground, there is supposed to be a spring. One consultant pointed out that the presence of this spring in proximity to the inland gulch known as Hauola, along with the fresh water seepages below sea level along the coastline suggest that there is fresh water flowing naturally under the project property. The access to subterranean fresh water is memorialized in the moʻolelo of the woman who went to collect the water near Three Tables in ancient times and who is still present there in the rock formation. One consultant hinted that there may be some other cultural significance to the particular project parcel which might be unknown to the public, and this consultant volunteered to talk to the families in the area to make sure nothing is overlooked.

The interviewees went on to describe the changes of the area over time. The very landscape of the region has been altered due to the extraction of natural resources. Along the shore the coral was detonated with dynamite, and sand was mined for use in Waikīkī. There was also a "blue rock" quarry where the Saints Peter and Paul Catholic Church now stands. The quarried material was used to build the road from Waimea to Kahuku. Some of the other Pūpūkea lands were bulldozed for agriculture, and the lands of the particular project area had become a dumping ground when the Niimi Store went out of business after Foodland took its place. In contemporary times, Pūpūkea and the entire North Shore has witnessed a significant housing boom and population swell, and this along with growing numbers of tourists has led to an exponential increase in pedestrian and vehicular traffic. In addition, as one consultant made clear, the transformation of the North Shore into a tourist

trap has buried the Hawaiian identity of the place, and this sense of Hawaiian-ness needs to be brought back to the forefront.

The interviewees voiced several concerns regarding this project:

- Past and current developments which consume Hawaiian places and traditions without giving back to the community
- The effects on the environment from sewage seepage and the solid waste stream
- The already congested traffic and parking situation
- The impacts of people cutting mauka trails and rock climbing around sensitive areas near burial caves
- The lack of known details of the plan such as exact retail square footage and the types of businesses that will be located there
- The already documented trespassing of visitors on private properties
- The unclarified and/or unfulfilled road improvement stipulations which were previously discussed for the area

The interviewees also shared some of their recommendations and measures to mitigate potential adverse effects of the proposed development:

- To counter the population explosion in the region, give the area's Hawaiian and long-time Local families the first pick for jobs
- To calm the concerns of the community, reach out to the community and create dialogue now before it's too late, and also, let the community know ahead of time what kinds of businesses will be located at the new development
- To head toward an optimal business flow, follow or improve upon the parking plan, delivery truck system, water usage, etc. that Foodland is currently using
- To steer away from making traffic worse, do not install another traffic light along the main road in front of the development
- To foster a greater sense of Hawaiian place, create a Hawaiian presence at the new development through a business such as an Eddie Aikau museum and/or restaurant
- To address the issue of bathroom access, construct restrooms on the project property which will be accessible to the general public and kept clean every day
- To be respectful of the original Pūpūkea community, do research and acknowledge the piko families of the area
- To be respectful of the native Hawaiian language, encourage its use at the new development and make sure that the language is used correctly
- To ensure critical environmental data is collected and analyzed, support a longitudinal study on the environmental implications of development such as the effects of benzoin (from suntan lotion) on water quality and the impacts of erosion due to public accesses, etc.

SUMMARY AND RECOMMENDATIONS

The North Shore has been an important region of Oʻahu since pre-contact times and has retained its importance today. The Pūpūkea area, and by association, the adjacent ahupuaʻa of Waimea, are known for their cultural, archaeological, and natural resources. This study highlights the unique past of Pūpūkea and demonstrates the importance of this place to the community. Three community members were interviewed to share their manaʻo and to help identify any potential cultural resources or practices that might be affected by the proposed development.

Cultural Resources, Practices, and Beliefs Identified

Archival research and ethnographic interviews compiled for the current study revealed that Pūpūkea from mauka to makai has been culturally significant, providing many of the natural resources which supported traditional subsistence activities such as farming, fishing, limu gathering, salt collecting, and drawing from the subterranean supply of fresh water.

Historically, the lands of Pūpūkea supported the sandalwood trade and were also cultivated with pineapple, used for acerola farming, and supported dairy ranching and rock quarrying. Along the coast, there was the mining of sand for transport elsewhere. After the coming of the railroad, the Niimi store, the grounds of which were located at and adjacent to the project property, was an important retailer that provided goods for the community and became a gathering place for generations of residents. Today, the Niimi Store has been replaced by Foodland and several lunch wagons, as well as small businesses catering to the tourists. The North Shore in general has been transformed into a major tourist destination, or as one interviewee put it, a tourist trap. This, along with the population boom, has had an impact on the natural environment and the environmental resources. Traditional salt collecting and limu gathering is still permitted, but the fishing along the coast in front of the project property is now prohibited due to the creation of a marine conservation area.

Ethnographic interviews pointed out the connection that Pūpūkea has with Waimea. Consultants agreed that although there has been a complete modification of the project parcel, there are still many known sites of cultural significance throughout the uplands and coastal lands of Pūpūkea and of Waimea next door. And despite the change that has taken place throughout the region, many Hawaiians and long-time Local families still treasure their familial and spiritual connection to Pūpūkea. There were no cultural resources or practices identified for the property that are extant today, although it was noted that the project lands might lie along an ancient mauka-makai trail route.

Potential Effects of the Proposed Project

The interviewees shared that there is the possibility that the proposed project might impact the environment if the sewage infrastructure is not proactively designed up to par. In addition, the development is in an area that already has a major problem with traffic and parking. However, as one interviewee stated, population explosion on the North Shore has already happened, and the tourists will come regardless of whether or not this development takes place because they are coming for the scenery and beaches. This interviewee emphasized that if this development includes stores and/or restaurants, it will benefit those on the North Shore because they will have more choices, and as a result, possibly lower prices. Another potential effect that was brought up was the added suppression of the Hawaiian culture that this development might bring. This could be countered by deliberately infusing Hawaiian culture and language into the proposed development and also by acknowledging the piko families of the area. Another possible effect mentioned in the interviews is the added number of visitors that this development might bring and the straying of these added visitors onto private property and/or culturally sensitive areas, such as the cliffline which has been

known to house iwi kūpuna. A mitigation suggestion is that any increase in visitors needs to be tempered with a respect to the boundaries of private parcels and culturally sensitive properties.

Confidential Information Withheld

During the course of conducting the ethnographic research for this project, one of the interviewees requested to keep their identity anonymous and asked that the transcription of their interview not be published. This interviewee, however, did give permission for us to print a copy of their transcript and make it available to the developer and also to paraphrase the information of the transcript to include in this Cultural Impact Assessment.

Conflicting Information

No conflicting information was obvious in analyzing the gathered sources. However, there was a slight difference in perspective gleaned from the interviews. For example, the proposed development could be looked at as an added project taking away from the Hawaiian identity to cater to tourists, or with the right planning, it could be an opportunity to perpetuate the Hawaiian culture and educate the visitors in such matters through the types of activities/businesses it allows there. The development will not help the current traffic problem in the area, but it could benefit the population by offering more choices in food establishments and stores, and this in turn, could decrease the prices of food, goods, and services. It could also offer more jobs to the Local community. All perspectives are valid, but the advantages/disadvantages of the project will depend on the execution of careful planning.

Recommendations

All interviewees offered many good points to consider. They had some questions regarding the specifics of the development which should be answered to alleviate their concerns. It is recommended that research be done and plans be made to recognize in this development: the Hawaiian language, the Local culture, the area's piko families, and the historical significance of the place. This would help educate visitors to the commercial development and foster cultural sensitivity, appreciation, and respect. Efforts should be made to ensure that the long-time residents have preferential hiring over new transplants and over those living elsewhere. One interviewee volunteered to gather the area's long-time residents and bring them to apply for employment at the new commercial development. Perhaps this matter could be followed up with this kupuna. Due to the lack of restrooms in the area, as a way to give back to the community, a restroom could be constructed on the property which would be accessible to the general public during normal operational hours of the businesses. And finally, a longitudinal study should be supported to gather data on the effects of the solid waste stream and sewage seepage, the effects of tourism on water quality (such as the effect of benzoin from suntan lotion into the waters), and the impacts of public accesses to the erosion of the environment and the protection of archaeological/cultural resources.

There are no existing cultural resources or current cultural practices that were identified for the project area itself. However, background research and oral history interviews confirmed the presence of archaeological, cultural, and natural resources in the project area vicinity, and it is not clear how these will be affected by the proposed construction. Interviews with three community members stressed their concerns regarding this and offered recommendations to mitigate any adverse effects. With regard to the environment, no natural resources were identified on the particular project parcels, with the exception of fresh water which may or may not exist below ground. It is recommended that the community continues to be consulted during all phases of the proposed Pūpūkea Commercial development, and that any other future concerns and recommendations brought forward by the community are be considered.

GLOSSARY

acerola The shrub/tree *Malpighia glabra L.* that produces a cherry-like fruit used in juices and jellies.

‘āhole Mature stage of the Hawaiian flagtail fish. The young stage is ‘āholehole.

ahupua‘a Traditional Hawaiian land division usually extending from the uplands to the sea.

‘ai noa To eat freely without kapu.

‘āina Land.

aku The bonito or skipjack (*Katsuwonus pelamis*), a prized eating fish.

ali‘i Chief, chiefess, monarch.

‘a‘ole No, never, not; to have none.

hālili Shells of the family *Architectonidae*, also known as the sundial shell.

Haole White person, American, Englishman, Caucasian; formerly any foreigner.

haole koa, koa haole The small tree *Leucaena glauca*, historically-introduced to Hawai‘i.

hau The indigenous tree *Hibiscus tiliaceous*, which had many uses in traditional Hawai‘i. Sandals were fashioned from the bark and cordage was made from fibers. Wood was shaped into net floats, canoe booms, and various sports equipment and flowers were used medicinally.

he‘e Octopus (*Polypus* sp.).

he‘e nalu Surfing, surf rider.

heiau Place of worship and ritual in traditional Hawai‘i.

huhū Mad, offended, to become angry.

‘ike To see, know, feel; knowledge, awareness, understanding.

‘ili, ‘ili‘āina Traditional land division, usually a subdivision of an ahupua‘a.

iwi Bone.

Kahiki A far away land, sometimes refers to Tahiti.

kahuna An expert in any profession, often referring to a priest, sorcerer, or magician.

kala The surgeonfish or unicorn fish, *Teuthidae*.

kama‘āina Native-born.

kanaka Human, person, man, Hawaiian.

kapu Taboo, prohibited, forbidden.

ko‘a Fishing shrine.

koa haole The small tree *Leucaena glauca*, historically-introduced to Hawai‘i.

kōkua Help, assistance, helper, co-operation.

konohiki The overseer of an ahupua‘a ranked below a chief; land or fishing rights under control of the konohiki; such rights are sometimes called konohiki rights.

kukui The candlenut tree, or *Aleurites moluccana*, the nuts of which were eaten as a relish and used for lamp fuel in traditional times.

kula Plain, field, open country, pasture, land with no water rights.

kuleana Right, title, property, portion, responsibility, jurisdiction, authority, interest, claim, ownership.

kupuna Grandparent, ancestor; kūpuna is the plural form.

ku‘ula A stone god used to attract fish, an altar near the sea, or a hut where fishing gear was kept with ku‘ula images to invoke their power.

lawai‘a Fisherman; to catch fish.

limu Refers to all sea plants, such as algae and edible seaweed.

limu kohu The prized edible seaweed *Asparagopsis taxiformis*.

limu līpēpē, lipe‘epe‘e The short, red seaweeds of the genus *Laurencia*.

lua The ancient style of fighting involving the breaking of bones, dislocation of joints, and inflicting pain by applying pressure to nerve centers. Also hole, pit; toilet.

luakini Large heiau of human sacrifice.

Māhele The 1848 division of land.

makai Toward the sea.

mālama To care for, preserve, or protect.

mana‘o Thoughts, opinions, ideas.

manini The surgeonfish *Acanthurus triostegus*, common in Hawaiian waters.

mauka Inland, upland, toward the mountain.

mele Song, chant, or poem.

menehune Small people of legend who worked at night to build structures such as fishponds, roads, and heiau.

midden A heap or stratum of refuse normally found on the site of an ancient settlement. In Hawai‘i, the term generally refers to food remains, whether or not they appear as a heap or stratum.

moku District, island.

moi The threadfish *Polydactylus sexfilis*, a highly prized food item.

mo‘o Lizard, dragon, water spirit.

mo‘o, mo‘o‘āina Narrow strip of land, smaller than an ‘ili.

mo‘olelo A story, myth, history, tradition, legend, or record.

nalu Wave, surf.

nenue The chub, rudder, or pilot fish (*Kyphosus bigibbus, K. vaigiensis*).

nīele Curious, inquisitive; to keep asking questions.

night marchers The legendary warrior ghosts that march at sacred places on certain nights. It is said to avoid death, one must lie face down on the ground to avoid their detection.

‘ohana Family.

‘ō‘io	Ladyfish, bonefish (*Albula vulpes*).
‘ōlelo no‘eau	Proverb, wise saying, traditional saying.
‘ōpala	Rubbish, trash, garbage, junk.
pa‘akai	Salt.
pali	Cliff, steep hill.
papa	Flat surface, reef, table, level, class, rank.
piko	Navel; summit; center.
plumeria	Ornamental trees of the genus *Plumeria*, widely used in landscaping, especially at temples and graveyards.
pōhaku	Rock, stone.
pono	Correct, proper, good.
sandalwood	Iliahi (*Santalum*), several varieties endemic to Hawai‘i. Known for their aromatic wood and medicinal qualities. Heavily exported in the 1800s.
saprolitic rock	Soft, decomposing bedrock.
sugarcane	The Polynesian-introduced *Saccharum officinarum*, or kō, a large grass traditionally used as a sweetener and for black dye.
‘uala	The sweet potato, or *Ipomoea batatas*, a Polynesian introduction.
uhu	An adult parrot fish, one of two genera of the *Scaridae* family known to occur in Hawai‘i.
‘ōpelu	Mackerel scad (*Decapterus pinnulatus and D. maruadsi*).
wai	Water or liquid other than salt water.

REFERENCES

Athens, J.S. and C. Magnusen
1998 *Sunset Beach Park Archaeological Inventory Survey, O'ahu, Hawai'i*. International Archaeological Research Institute, Inc., Honolulu.

Beaglehole, J.C. (ed.)
1967 *The Journals of Captain James Cook, Vol. III, Part One*. Hakluyt Society. Cambridge University Press, Cambridge, United Kingdom.

Beck, J.A., J.D. McIntosh, and P.L. Cleghorn
2004 *Archaeological Assessment for the Proposed North Shore Center at Pūpūkea (TMK 5-9-11:17) Located in Pūpūkea Ahupua'a, District of Ko'olauloa, Oahu*. Pacific Legacy, Inc., Kailua, Hawai'i.

Berdy, C., M. Elmore, J.R. Moore, and J. Kennedy
2002 *An Archaeological Inventory Survey Report for a Property Located at TMK: 5-9-23:1 & 5-9-24:1 (Por.) and 6-1-02:22 (Por.) in Pupukea and Waimea Ahupua'a, Ko'olauloa and Waialua Districts, Island of O'ahu*. Archaeological Consultants of the Pacific, Inc., Hale'iwa, Hawai'i.

Carson, M.
2000 *Archaeological Survey at Sunset Beach*. Pacific Legacy, Kailua, Hawai'i.

Chinen, J.
1961 *The Great Mahele*. University of Hawai`i Press, Honolulu.

Clark, John
1977 *Beaches of O'ahu*. The University Press of Hawai'i, Honolulu.

2005 *Beaches of O'ahu*. Revised Edition. The University Press of Hawai'i, Honolulu.

Colin, B.L. and H.H. Hammatt
2000 *A Letter Report on the Disinterment of an Inadvertent Human Burial Find on the Board of Water Supply Sunset Beach Waterline Project on Kenui Road, Pūpūkea Ahupua'a, Ko'olauloa, O'ahu (TMK 5-9-19:51) (State Site # 50-80-01-5532).* Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.

Cordy, D.L., A. Hazlett, and H.H. Hammatt
2008 *Archaeological Monitoring Report for Construction of Parking Lot Improvements at 'Ehukai Beach Park, Pūpūkea Ahupua'a, District of Ko'olauloa, O'ahu TMK: [1]5-9-020:022,023*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.

Dening, G.
1995 *The Death of William Gooch: A History's Anthropology*. University of Hawai'i Press, Honolulu.

Denison, D.O.
1979 *Archaeological Reconnaissance of Property Across from Pupukea Beach Park.* Windward Community College, Kāne'ohe, Hawai'i.

Donn, J.M.
1902 *North Coast of Oahu*. Reduced from Reg. Maps in Gov't Survey Office. May 20, 1902. Reg. No. 2146. Scale 1 in. = 1,000 ft.

Dunbar, H.
1989 Pu'u o Mahuka National Register Nomination Form. Division of State Parks, DLNR, Honolulu.

Elmore, M. and J. Kennedy
1999 *An Archaeological Monitoring Report for the Sunset Beach Support Park Located at TMK:5-9-15:10 and 11 Paumalu Ahupua'a, Ko'olauloa District, Island of Oahu*. Archaeological Consultants of Hawaii, Inc., Haleiwa, Hawai'i.

Estioko-Griffin, A.
1986 *A Brief Historical Overview of the Pu'u o Mahuka Heiau Koolauloa, Oahu.* Report on file at the Hawai'i State Historic Preservation Division, Kapolei, Hawai'i.

Foote, D., E. Hill, S. Nakamura, and F. Stephens
1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. U.S. Department of Agriculture, Soil Conservation Service. Published in cooperation with the University of Hawaii Agricultural Experiment Station, Washington, D.C.

Fornander, A.
1969 *An Account of the Polynesian Race*. Vol. 2, Tuttle and Co., Rutland, Vermont.

Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J.K. Eischeid, and D.M. Delparte
2013 Online Rainfall Atlas of Hawai'i. Bull. Amer. Meteor. Soc. 94, 313-316, doi: 10.1175/BAMS-D-11-00228.1.

Griffin, A.
1991 *Assessment of a Burial Inadvertently found at Ehukai Beach, Pupukea, Waialua, Oahu, TMKL 5-9-20:22 & 23*. State Historic Preservation Division.

Handy, E.S., E.G. Handy, and M.K. Pukui
1991 *Native Planters in Old Hawaii: Their Life, Lore, and Environment*. Revised Edition. Bernice P. Bishop Museum Bulletin 23, Bishop Museum Press, Honolulu.

Hammatt, H.H.
2014 *Archaeological Monitoring Report for the Sunset Beach Elementary School Electrical Upgrades Project, Pūpūkea Ahupua'a, Ko'olauloa District, O'ahu TMK: [1] 5-9-005:018*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.

Haun, A.E. and D. Henry
2001 *Archaeological Inventory Survey Sunset Beach Agricultural Subdivision TMK: 5-9-05:66 Land of Pupukea Ko'olauloa District, Island of Oahu*. Haun & Associates, Kea'au, Hawai'i.

Hoover, W.
2005 "New owner sees little change at Kammie's." *Honolulu Advertiser*. April 9, 2005.

Jones, C.K. and H.H. Hammatt
2004 *Archaeological Monitoring of Kamehameha Highway, from Pūpūkea to Waialeʻe, District of Koʻolauloa, Island of Oʻahu (TMK: 5-8-01, 5-8-03-06, 5-9-01-04, 5-9-07-16).* Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

Ka Leo o Ka Lahui
1893 Ka Moolelo o Hiiakaikapoliopele. March 23, 24. Vol. 2, No. 668, page 4.

Kamakau, S.M.
1992 *Ruling Chiefs of Hawaii, Revised Edition*. The Kamehameha Schools Press, Honolulu.

Kawachi, C.
1988 *Field Inspection of an Inadvertent Burial on Ke-Iki Road in Pupukea, Koʻolauloa, Oʻahu. TMK 5-9-03:29*. State Historic Preservation Division, Honolulu.

Kawachi, C. and M. Smith
1989 *Field Inspection of an Inadvertent Burial on Ke-Iki Road in Pupukea, Koʻolauloa, Oʻahu, TMK 5-9-03:46*. State Historic Preservation Division, Honolulu.

Kennedy, J.
1991 *Inventory Survey and Subsurface Testing Results for Ehukai Beach Park, TMK: 5-9-20:22&23 Located in the Ahupuaʻa of Pupukea, Island of Oahu*. Archaeological Consultants of Hawaii, Inc., Haleiwa, Hawaiʻi.

Kennedy, J. and T. Denham
1992 *Archaeological Monitoring Report for ʻEhukai Beach Park Improvements Located at Pupukea Ahupuaʻa, Koʻolauloa, Island of Oahu. TMK: 5-9-20:22 &23*. Archaeological Consultants of Hawaii, Inc., Haleiwa, Hawaiʻi.

Kuykendall, R.S.
1967 *The Hawaiian Kingdom*. U.H. Press, Honolulu.

Macdonald, G.A., A.T. Abbot, and F.L. Peterson
1983 *Volcanoes in the Sea the Geology of Hawaii*. Second Edition. University of Hawaii Press, Honolulu.

Mayberry, J.D. and A.E. Haun
1988 *Archaeological Reconnaissance Survey and Limited Subsurface Testing Pupukea-Paumalu Development Project Area*. Paul H. Rosendahl, PhD, Inc., Hilo, Hawaiʻi.

McAllister, J.G.
1933 *Archaeology of Oahu*. Bishop Museum Bulletin 104, Honolulu.

McElroy, W.K. and P.L. Lima
2015 *Burial Site Component of an Archaeological Data Recovery and Preservation Plan for SIHP 50-80-01-7678, Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi (TMK: (1) 5-9-020:029)*. Keala Pono Archaeological Consulting, Kāneʻohe, Hawaiʻi.

2016 *Archaeological Monitoring Report for TMK: (1) 5-9-020:029 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi*. Keala Pono Archaeological Consulting, Kāneʻohe, Hawaiʻi.

2017 *DRAFT—Archaeological Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi*. Keala Pono Archaeological Consulting, Kāneʻohe, Hawaiʻi.

McGerty, L. and R.L. Spear
2011 *An Archaeological Monitoring Report for the Pūpūkea Road Rockfall Mitigation Project, Phase I, Pūpūkea Ahupuaʻa, Koʻolauloa District, Oʻahu Island, Hawaiʻi TMK (1) 5-9-005 and 011*. Scientific Consultant Services, Inc., Honolulu.

Moore, J.R. and J. Kennedy
2006 *An Archaeological Inventory Survey Report for a 14 Acre Parcel Located at TMK: 5-9-23:01 & 5-9-24:01 (Por.) and 6-1-02:22 (Por.) in Pupukea and Waimea Ahupuaʻa. Koʻolauloa and Waialua Districts, Island of Oʻahu*. Archaeological Consultants of Hawaii, Inc., Haleiwa, Hawaiʻi.

Nakuina, M.
2005 *The Wind Gourd of Laʻamaomao*. Kalamakū Press, Honolulu.

North Shore News
2013 *A Fond Farewell to Elaine* Niimi. *North Shore News* 30 (19):3.

Paki, P.
1972 *Legends of Hawaii: Oahu's Yesterda*y. Honolulu.

Pantaleo, J.
2000 *Archaeological Assessment for the Sunset Beach Recreation Center (TMK 5-9-07:021)*. Jeffrey Pantaleo Consultants, Honolulu.

PBR Hawaiʻi & Associates
2014 *Camp Pūpūkea Master Draft Environmental Assessment*. Honolulu.

Pukui, M.K., S.H. Elbert, and E.T. Mookini.
1976 *Place Names of Hawaii*. University Press of Hawaii, Honolulu.

Smith, M. and M. Yent
1991 *Archaeological Investigations at Puu O Mahuka Heiau State Monument (Site 50-80-01-249) and Nearby Sites (50-80-01-2502 and 50-80-001-3951) Pupukea, Koolauloa, Oahu (TMK: 5-9-05:4, 21 and 68)*. Division of State Parks DLNR, Honolulu.

Soehren, L.J.
2010 *A Catalog of Hawaiian Place Names*. Lloyd J. Soehren, Honokaʻa, Hawaiʻi.

Sterling, E. and C. Summers
1978 *Sites of Oʻahu*. Bishop Museum Press, Honolulu

Tulchin, T. and H.H. Hammatt
2005 *Archaeological Field Inspection and Literature Review for a Proposed Potential Rockfall Mitigation Project along Pūpūkea Road, Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu TMK (1) 5-9-11 por. and 5-9-18 por*. Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

2009 *Archaeological Inventory Survey for the Pūpūkea Road Rockfall Mitigation Project, Pūpūkea Ahupuaʻa, Koʻolauloa District, Oʻahu Island TMK: [1]5-9-018:025-032 por. and 038 por.* Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

Tulchin, T., M. Mann, D.W. Shideler, and H.H. Hammatt
2002 *Archaeological Monitoring Report for ʻEhukai Beach Park Bath House Improvements Work, Pūpūkea Ahupuaʻa, District of Koʻolauloa Island of Oʻahu TMK: 5-9-20-22 & 23*. Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

Wall, W.E.
1904 *Pupukea-Paumalu Homesteads, Koolauloa, Oahu*. Hawaii Territory Survey. HTS Plat 2036. Scale 1 in. = 1,000 ft.

APPENDIX A: AGREEMENT TO PARTICIPATE

Agreement to Participate in the Cultural Impact Assessment for the Pūpūkea Commercial Project
Dietrix J. U. Duhaylonsod, Ethnographer, Keala Pono Archaeological Consulting

You are invited to participate in a Cultural Impact Assessment (CIA) for the Pūpūkea Commercial Project in Koʻolauloa, on the island of Oʻahu (herein referred to as "the Project"). The Project is being conducted by Keala Pono Archaeological Consulting (Keala Pono), a cultural resource management firm, on behalf of G70. The ethnographer will explain the purpose of the Project, the procedures that will be followed, and the potential benefits and risks of participating. A brief description of the Project is written below. Feel free to ask the ethnographer questions if the Project or procedures need further clarification. If you decide to participate in the Project, please sign the attached Consent Form. A copy of this form will be provided for you to keep.

Description of the Project

This CIA is being conducted to collect information about the Project property in Pūpūkea and its surrounding areas on the North Shore of Oʻahu Island through interviews with individuals who are knowledgeable about this area, and/or about information including (but not limited to) cultural practices and beliefs, moʻolelo, mele, or oli associated with this area. The goal of this Project is to identify and understand the importance of any traditional Hawaiian and/or historic cultural resources, or traditional cultural practices in properties on the current subject properties. This Assessment will also attempt to identify any affects that the proposed development may have on cultural resources present, or once present within the Project area.

Procedures

After agreeing to participate in the Project and signing the Consent Form, the ethnographer will digitally record your interview and it may be transcribed in part or in full. The transcript may be sent to you for editing and final approval. Data from the interview will be used as part of the ethno-historical report for this project and transcripts may be included in part or in full as an appendix to the report. The ethnographer may take notes and photographs and ask you to spell out names or unfamiliar words.

Discomforts and Risks

Possible risks and/or discomforts resulting from participation in this Project may include, but are not limited to the following: being interviewed and recorded; having to speak loudly for the recorder; providing information for reports which may be used in the future as a public reference; your uncompensated dedication of time; possible misunderstanding in the transcribing of information; loss of privacy; and worry that your comments may not be understood in the same way you understand them. It is not possible to identify all potential risks, although reasonable safeguards have been taken to minimize them.

Benefits

This Project will give you the opportunity to express your thoughts and opinions and share your knowledge, which will be considered, shared, and documented for future generations. Your sharing of knowledge may be instrumental in the preservation of cultural resources, practices, and information.

Confidentiality

Your rights of privacy, confidentiality and/or anonymity will be protected upon request. You may request, for example, that your name and/or sex not be mentioned in Project material, such as in written notes, on tape, and in reports; or you may request that some of the information you provide remain off-the-record and not be recorded in any way. To ensure protection of your privacy, confidentiality and/or anonymity, you should immediately inform the ethnographer of your requests. The ethnographer will ask you to specify the method of protection, and note it on the attached Consent Form.

Refusal/Withdrawal

At any time during the interview process, you may choose to not participate any further and ask the ethnographer for the tape and/or notes. If the transcription of your interview is to be included in the report, you will be given an opportunity to review your transcript, and to revise or delete any part of the interview.

APPENDIX B: CONSENT FORM

Consent Form

I, _____, am a participant in the Pūpūkea Commercial Project Cultural Impact Assessment (herein referred to as "Project"). I understand that the purpose of the Project is to conduct oral history interviews with individuals knowledgeable about the subject property and surrounding area on the North Shore of O'ahu Island. I understand that Keala Pono Archaeological Consulting and/or G70 will retain the product of my participation (digital recording, transcripts of interviews, etc.) as part of their permanent collection and that the materials may be used for scholarly, educational, land management, and other purposes.

_____ I hereby grant to Keala Pono and G70 ownership of the physical property delivered to the institution and the right to use the property that is the product of my participation (e.g., my interview, photographs, and written materials) as stated above. By giving permission, I understand that I do not give up any copyright or performance rights that I may hold.

_____ I also grant to Keala Pono and G70 my consent for any photographs provided by me or taken of me in the course of my participation in the Project to be used, published, and copied by Keala Pono and G70 and its assignees in any medium for purposes of the Project.

_____ I agree that Keala Pono and G70 may use my name, photographic image, biographical information, statements, and voice reproduction for this Project without further approval on my part.

_____ If transcriptions are to be included in the report, I understand that I will have the opportunity to review my transcripts to ensure that they accurately depict what I meant to convey. I also understand that if I do not return the revised transcripts after two weeks from the date of receipt, my signature below will indicate my release of information for the draft report, although I will still have the opportunity to make revisions during the draft review process.

By signing this permission form, I am acknowledging that I have been informed about the purpose of this Project, the procedure, how the data will be gathered, and how the data will be analyzed. I understand that my participation is strictly voluntary, and that I may withdraw from participation at any time without consequence.

_____

Consultant Signature **Date**

_____

Print Name **Phone**

_____

Address

Thank you for participating in this valuable study.

APPENDIX C: TRANSCRIPT RELEASE

Transcript Release

I, _____, am a participant in the Cultural Impact Assessment for the Pūpūkea Commercial Project (herein referred to as "Project") and was interviewed for the Project. I have reviewed the transcripts of the interview and agree that the transcript is complete and accurate except for those matters delineated below under the heading "CLARIFICATION, CORRECTIONS, ADDITIONS, DELETIONS."

I agree that Keala Pono Archaeological Consulting and/or G70 may use and release my identity, biographical information, and other interview information, for the purpose of including such information in a report to be made public, subject to my specific objections, to release as set forth below under the heading "OBJECTIONS TO RELEASE OF INTERVIEW MATERIALS."

CLARIFICATION, CORRECTIONS, ADDITIONS, DELETIONS:

OBJECTIONS TO RELEASE OF INTERVIEW MATERIALS:

_____

Consultant Signature **Date**

_____

Print Name **Phone**

_____

Address

APPENDIX D: INTERVIEW WITH BOB LEINAU

TALKING STORY WITH

BOB LEINAU (BL)

Oral History for the Pupukea Commercial project by Dietrix Duhaylonsod (DD)
For Keala Pono 4/17/2017

Note: Bob Leinau shared his personal background in a previous cultural impact assessment for a project in Paumalū. He has given his permission for us to use that portion of the previous cultural impact assessment to introduce himself here.

DD: Today is April 17, 2017. We're sitting at the Surf And Salsa [food truck] in Haleʻiwa, sitting with Uncle Bob Leinau. And we're gonna be talking about the proposed development in the Pupukea area next to the Foodland across of Shark's Cove, called the Pupukea Commercial project. And it's a pleasure again to get together with Uncle Bob and talk story, so before we go any further, I'd just like to say again, "Thank you," for taking the time out of your day to talk story with us. Aloha.

BL: Aloha

DD: So when we talked story last year, you gave your background, and if you don't mind, I'd like to use some of that to share about your background?

BL: Same guy, same person.

DD: [laughs] Ok, so then maybe we can start by talking about your association to that area, the Pupukea Commercial project area? Could you talk about your association to that area and how you've acquired any knowledge about the area?

BL: Ok, so I moved to the North Shore in 1968, and I have been active in community affairs since 1968. And I have been active on the neighborhood board for almost 40 years now, ever since its inception. And I worked in a historical park in Waimea Valley for over 30 years. And so I've always been paying attention. I give classes on the history of Waimea Valley to the lifeguards every summer, to the junior lifeguards. And so people seem to think I know more than the next guy, maybe, but whatever.

So I can give some general references to this specific piece of property. If you go all the way back, if you go back to Kamapuaʻa, These lands were given to Kamapuaʻa by Lonoawohi. Olopana was not friends with his illegitimate son Kamapuaʻa, and so he caught Kamapuaʻa finally after many years, and took him to a heiau to be killed. And Lonoawohi the kahuna flipped. They grabbed the, this is where I always get scrambled on names here, but they grabbed the other chief, spared Kamapuaʻa's life, and he was very grateful. So he received all the lands with wai, so that included Hakipuʻu, Waiahole, Waikāne, Waimea, and Pupukea, were the lands that he ended up with eventually. His family felt that there were too many "wai"-lands that got given away. And so the Pupukea lands, the land that this development is on, was dedicated to the Paʻao class. And they held those lands all the way through to from about 1095, what have you thereabouts, all the way through to when [the kahuna] Hewahewa came. When Kamehameha came and conquered, everybody who came and conquered put their kahuna in there, the Paʻao class [of priests]. And Hewahewa died in 1837. So that was pretty much the end of the kahuna tenure.

So going back to Pupukea, the way the lands were used, of course there was the mauka/makai. The makai side, of course, was really important because of its fisheries and food sources. There's still to this day, over 21 kinds of limu growing on the papa right now. And it's been known for its good fishing until recent times when it pretty much got wiped out.

It was also called "Kapoʻo." Kapoʻo describes the nature of the area right across the street where the waves come and hit the coral reef, the shelf, and they splash way up in the air. So not only do people come to this area for diving and because this is a marine life conservation district there. There's a mile of coastline today. But they also stop to see these waves, these giant waves exploding on the coral. Actually it isn't coral. It's coral-algaenous. Most of that reef was put down by algae that glues it all together, but that's another story.

Ok, so you have this area that's very rich along the sea. And then of course the mauka lands always provided whatever they did. In later years, of course, they provided the sandalwood, which was the original currency for the Hawaiians and changed their lifestyle around significantly. Even Kamehameha had already bought guns with revenues from sandalwood. So Waimea was actually a port. The ships would pull in to a deep, sandy cove there. And so sandalwood was going on there probably until around 1830, when it pretty much went away. And there are still some big anchors. There's one big giant anchor off the point still. It's probably from those times with the big flukes on it.

So also in this area, up on the bluff above Pupukea, is Pu'u O Mahuka Heiau which is the largest heiau on the island [of Oʻahu]. [The kahuna] Kaʻōpulupulu reputedly built that. That would have been in the mid-1770s although lots of temple sites were built in sequence. This particular one has celestial coordinates. It lines up exactly with summer solstice, and there's a step down which lines up exactly with the equinox. And so these things weren't randomly done. This one was supposedly a luakini heiau. And of course, in 1819 when Kamehameha died, Hewahewa, the kahuna in Waimea Valley, along with Kaʻahumanu and Liholiho, sat down, broke the kapu of eating, they broke the ʻainoa, or had an ʻainoa, I guess, it was free. And after that they went up, and all the heiau fell into disrepair, and the tikis were destroyed.

There are two tikis, however, that did come out of Waimea Valley. In Waimea Valley, there were a lot of burials, and all along the pali on both sides of Waimea Valley. There's a lot of lava tubes and a lot of burials. So it's reasonable to assume that there were probably burials all along the mauka side. Also, just above the mauka side, just above this property, there's a drainage of a gulch. The gulch is called Hauola. Hauola might be interpreted as "a healthy hau," I don't know, but it drains out. And all along that pali, there were water seeps. And of course, where water was, it pretty much drove where the Hawaiian population went. Every living thing on the planet needs fresh water.

And so one story I heard was that at the back side of this property, there was a spring. And I have every reason to believe that's probably true especially when it's considered in proximity of Hauola. And if you dive the coral reef along the coral facing there at Kapoʻo, you'll see a lot of fresh water seepages coming out. Its' dissolved holes in the karst land and in the coral. So this area has fresh water underneath the alluvium. Ok, so that's a little bit about the geology.

Going back down to the property, the great Māhele guys started buying large grants. Pupukea, the first crops up there, Libby had pineapple up there. There was, I can't remember the guy's name right now, he had avocados. There was an acerola farm up there. There were several dairies up on the hill. And so the government ran a road down called, it was called the Old Government Road. It ran through the Boy Scouts Camp. And it came all the way down to the juncture of Pupukea Road where Foodland is now, and where Niimi Store was.

The Niimi Store was built shortly after Dillingham's railroad came out. I think it was built in like 1902 or something. And that was a real focal point. I believe the train stopped there. The farmers had a chance to load or unload. And so the store was a real hang out. It was a place that the people could do commerce. There was not a lot of commerce on the north shore. So that was probably the first store that I can think of that would have been in business. So that was all part of the Hanapohaku three parcels. The Niimi family had a retail operation in Kahuku, and they moved it down to Pupukea when they attained the ownership. And it did a lot of things. You know, it was food, it was a feed store for everybody who had chickens. There was a nursery there for a while. They had a lot of stuff.

And most of the people who lived in the area, it was very rural, most of the people had gardens, you know, they grew a lot of their own food. And if you look at the Hanapohaku development right now, it still retains pretty much the original alluvial topography with the low corner being in the direction of the west corner. So I don't think anybody did anything too much. But I think it had been cleared for agriculture. So I think the prospect of finding any rock alignments in there with cultural significance or any artifacts are probably pretty remote.

In the last few years, well the last 30 years, a lot of people used the property pretty much as a, because it was a vacant lot, they could go back there and just dump stuff. And they did. So the current owners, one of the first things they did was go in there and clear a lot of ʻōpala out of there. And they did some minor grading, but I think if you look back over the last 100 years before, probably there wasn't any serious grading. But I think that agricultural endeavors in that area were pretty minor and just surface related. I'm trying to visualize it. [pause] So pretty much what was in there when the current owners bought it was haole koa and weeds.

The other thing that is important, I think, is that as this project moves forward, is to consider the adjacencies in the context of the area. That area also had some Hawaiian references to Pele when she came through there. If you look to the north out at Ke Iki Point, out at Kalalua Point, there's that Ukali O Pele, which are stones, coral stones, that Pele turned a family into stone. I'm not real clear whether she did it as a favor for them to guard the area, or if they were nīele, and she did it as a punishment. But the Ukali O Pele are still out there.

The other story that ties to the area is Hiʻiaka was in the area in Waimea, and she saw a handsome kanaka there. He was a lawaiʻa. He was a heʻe nalu, a surfer. He was a konohiki. And his name was Piliʻaʻama. And as the story goes, she kinda liked the looks of this guy, a handsome guy, and she chased him. She went after this guy, and he ran away. And there's rock on the side of Kamehameha Highway that still has his footprint in it where he dove into the cliff and disappeared. [laughs]

There's also the story of Kaluaomaua. The Three Tables area, there's the story of a lady who, one of the ways that you could get fresh water was to go out with a gourd and collect water from underneath the ocean. You could tip it over, and it would suck in fresh water from where the water was coming out, the wai. And so she went out there, collecting water for her people and didn't come back. But there's three corals that float there, and supposedly she turned into the lua, or the rocks where that water comes out.

So the Hawaiian culture and the stories of that area are rich. There's another one, with Puʻu O Mahuka heiau up on the top of Pupukea bluff. On the Hawaiian Islands there were a lot of trails. You know, [like] on Maui there was a highway, we call it a highway. But they had a ala, and it's said that the trail went through the Hanapohaku property, and that still to this day, night marchers move down that road from time to time. And people along that coastline there have things that

happen at night in their houses where things are moved, and nobody knows how that went happen. So the story of the night marchers and Puʻu O Mahuka is very much alive too.

So there's the broader context that goes beyond the metes and bounds of the property. And I think it's important to keep those stories alive. Keep the culture strong. So if Hanapohaku comes in, they need to be respectful of the broader context of the adjacencies, and that deals with their customers. Their customers can overwhelm the City & County park next door where practitioners still go and collect limu, hālili. And also, out on the point right across the street, this was an area where Hawaiians gathered paʻakai. There's large salt pans out there on the coral and flattened out. And so these things are all remnants and relics and touchstones for Hawaiian culture.

So if you're a Hawaiian, and you want to go down to this area, and all you see is cars and cars and more cars, hey guess what, there's no place to park. That's a bummer. Well, so go through the plan. How will this plan unfold? How much parking? How will it be with the retail square footage? Those things really are factors in the broader context.

The other thing that needs to be considered is the waste stream. If this development is retail, maybe they'll have some cardboard boxes. If they have food and beverage all over the place, ho you going get plenty waste stream morning, noon, and night. And if the water goes into the ground, will it eventually end up on the reef? Will it change the nutrient loading? Will different limu start growing in these areas? Nature is a very delicate balance. And if these guys are too aggressive, it will affect things in a negative way.

DD: Alright, wow, that's a wealth of things to consider.

BL: You can edit that any way you want.

DD: No, you can see the significance of the area going back to Kamapuaʻa and Pele and Hiʻiaka. And then, I see some themes with water, mentioning the fresh water coming out at different areas around the coast as well as being connected through story with Hauola, and possibly, you were saying that the spring might be on the property toward the back.

BL: I haven't seen it. I only heard that there was one.

DD: Ok. And then the other thing that stands out is how ceremonial this place was when you mention Paʻao and Hewahewa and Kaʻōpulupulu with the heiau on top, very good things of significance to keep in mind, like you said, to have respect for the history of the area.

So let's see, if we could talk about place names, you mentioned Kapoʻo. Would that be Shark's Cove, or?

BL: Actually, the reef structure, that structure at Ke Iki Beach, when it goes out to Kalalua Point, is a very large coral-algaenous structure, and it turns into a coral, you know, a vertical face. And I'm told that's the largest coral vertical face, or coral-algaenous vertical face, on the island. It's a unique structure. And it is the area that kinda goes down to just about where the fire department is. So it's pretty much from Shark's Cove to the fire department, is the area I think is Kapoʻo. But I don't know if they were really heavy about metes and bounds. The area was referenced as Kapoʻo because of the nature of the waves.

DD: Ok, are there any other place names that you'd like to share about the area?

BL: You know, I wish I knew more. We're always trying to find names. One of the names I've been told for Shark's Cove, clearly that wasn't a Hawaiian name, but I asked Richard Spillner, who was born on the beach at Waimea Bay in 1933 or '34, what they called Shark's Cove when he was growing up. And he said that they called it "Koʻa" meaning "Chunks of coral," because the waves blast in there so big that it really doesn't have a sand beach. It has chunks of coral. So actually "Koʻa Cove" would be a really appropriate name. And it may very well be the name that's been there for a very long time, but I've never been able to find it in print.

DD: Ok, thanks for sharing that.

BL: Also, there's the tables. What's interesting too is that the tide pools, when they surveyed Drum Road in 1933, and they built it in 1934, the surge rock for that road that connects Helemano all the way to Kahuku and comes up through Pupukea, was built out of coral that was blasted. Those tide pools are man-made. Before, it was a higher papa, karst formation, similar to the one at Ke Iki. Interesting, huh?

DD: Oh, so they blasted that.

BL: Yeah. Back then, they blasted the coral for resource. Where the Catholic Church is now was built as a quarry for blue rock to build the road from Waimea to Kahuku. That was built in 1928. And in the '50s, Castle and Cooke was mining sand in Waimea to take to Waikīkī. And Glen Pau stopped that. He went to the governor and said, "'Aʻole." [laughs] Yeah.

DD: Yeah. So the Catholic Church, you're talking about St. Peter and Paul, right on the corner?

BL: Yeah. That tower there was a silo for crushed blue rock. Trucks would drive underneath, they'd open the jaws and fill the trucks and close em. Yeah, used to have a conveyor belt that went up the backside. I must be getting old.

DD: [laughs] That's before my time. [both laughing] Ok, so I just want to see if we're missing anything as far as how the place has changed. You mentioned that it's all previously disturbed with haole koa and bushes there, and that it was a dumping ground. Are there any other changes that you recall on the property?

BL: No.

DD: Ok, so because of the prior disturbance on the ground, there are probably no rock alignments or anything. I know that you did mention burials further upland and in the cliffs.

BL: Actually there's one other burial that I heard of. I think that it was during the time that the people were getting smallpox. I heard that at Kaluaomaua, the last set of rocks before you go out, that there was a mass burial there at one time. A lot of people died, and rather than go up in the caves, they just went to the soft sand.

DD: So this is makai of the road?

BL: Yes, it was in the sand, makai of the road.

DD: Ok. And there are no burials, to the best of your knowledge, on the subject property?

BL: Not that I know of.

DD: What about any historical buildings?

BL: Well the only historical one would have been the Niimi Store. And that was a snooker job. That was a real education. He told Elaine Niimi, and he told the community, that after he built the Foodland, that he would rebuild the Niimi Store. You know, everybody liked that store. And that was all done, and he said, "Oh I change my mind." And that was it. There was nothing. So what you learn is that you don't trust developers.

DD: Oh, the developer was going to make a new Niimi Store.

BL: Yeah, he was gonna rebuild it. That's what he said all along. And the thing that hurts is that I was a friend of the community association at the time. And I wrote the letter supporting the building of the Foodland store, you know, predicated on no loss to the community. But we did. We lost a nice historical building. It was a part of the community, it was old. But look at Haleʻiwa, that's what makes this town.

DD: Yeah, like Arakawa's [store in Waipahu].

BL: Yeah, kinda like Arakawa's. The most popular building in Haleʻiwa for years and years and years was the Aoki Store, that little red shave ice. More people took pictures, more artists painted it, more whatever whatevers, and Kamehameha [Schools Bishop Estate] just knocked it down. They said, "It's too old. We gotta get rid of this guy. We gotta build some more stuffs." But that's what people like. They like the old, they really like that.

DD: Right. So if this proposed development goes through, do you think that it would affect any place of cultural significance, maybe not on the property but around the property? What are your thoughts on that?

BL: There's two ways. The biggest is that if they actually go through with it, and they just sell out. The other one is depending on how they do it. In other words, it's supposed to be community commercial. And will it have a nice soft cultural landscape of Hawaiʻi feel to it? Or will it turn into a marijuana dispensary with a bunch of derelicts hanging out? I mean, it's a huge if. They wanna do a dispensary, but they don't say what they wanna dispense. [both laughing] Let me guess.

DD: [laughs] Is that the new cash crop?

BL: I'm just sayin'.

DD: Ok, you also mentioned some traditional gathering practices across the street, in the past, the gathering of salt, the various seaweeds, and then you mentioned the fishing there. How do you think that this development would affect any of those practices, if at all?

BL: Well, the fishing's already kapu except at Waimea Bay where you can have two poles, two hooks. The rest of it is considered poaching. But you know, the Hawaiians had kapus too. And the whole near shore waters on this whole island has just been raped. Most people think that the marine life conservation district [fronting the project site] works, is a good idea. Some of them don't. Some say, "You took something away from me." Other people understand there's a spillover in the wind, and that there's something for future generations. That's the real objective, to teach people. Wouldn't it be nice if you could take your kid down and show em schools of uhu? Well I've swam twice from Waimea Bay to Haleʻiwa in the last couple years and not seen one uhu. I mean, it's like "[sound effect]." So the word "sustainable" gets thrown around a lot, but we crossed that line a long time ago, and we need to reel this puppy back in. And the "we" should be

all of us. Unfortunately there are guys that say, "Eh you trying to take something away from me, brah." You know what, hey wake up.

DD: Big picture, it's the big picture. So people don't fish in front there anymore because it's a preserve right?

BL: Right.

DD: So do you know if anyone is still collecting salt there?

BL: Technically, you're not supposed to take anything out there.

DD: Oh, ok.

BL: But, you're not supposed to take rocks that have life on them, not supposed to take coral. The idea is you take pictures. But the salt pans are still there, and if someone took some salt, no one's gonna make huhū about that. And the guys who collect limu, you're allowed to take limu kohu and līpēpē, are the two types that you're allowed. You're allowed a wet pound per person per day. And of course it was harvested at that rate, there wouldn't be any. So they oughtta kapu that too.

DD: So are there any other measures that are not in place that should be looked at regarding this development to mitigate any adverse effects?

BL: Ok, so if you want to make decisions about stuff, you should have data. So what the State should be doing a lot, and they don't, is water quality monitoring. And suspended solids, you know, bacterial counts, and other things are causing real problems, like the stuff in the sunscreen. It's something benzoin. I'm getting old. I can't remember everything as quick as I want. Those things, you know, if you get thousands of people coming to your spot, like they've got one of their businesses there is the snorkel guys, and the other thing is their customers, just like all the other customers, contribute to the foot traffic. So right now, we used to have a lot of accesses, and we've landscaped em out, put a fence, planted a lot of native plants, and we've got it narrowed down to a couple of accesses now. So it increases the amount of erosion in those specific areas, but on the whole, it reduces the amount of erosion because it cuts down the accesses. So if their project encourages people to come, and they're using the marine life conservation district as part of their marketing anchor destination, uh yeah, it'll have an impact on the adjacency.

DD: Right, and you're suggesting some kind of water quality study.

BL: Oh they'll have a guy do a study. You know, they'll do a baseline, pick a day when it's not too rainy, cherry pick a day. But what you need is a longitudinal study. And not property owner feels like that's their burden. And the State, they're always cutting people's budgets. It's really hard. They don't take good care of this island. You know, our real product is the beauty of this place, and they don't get it.

DD: Right, right. Any other mitigation measures?

BL: Well the developers own 10% of the road there, and the adjacent neighbors own 90% of it. And what happens is there are customers who are coming up and pissing in their yards and turning around in their driveways, and there was a lot of negative impact. So now they kind of got it blocked off. But who knows what the final shakedown will be? Nobody knows. But the neighbors have been impacted, and they don't like it. I mean, they've already been impacted [from past development]. So that's what they're looking at.

DD: Could you envision any measures to help with the traffic?

BL: Well, traffic engineers and the State DOT drive all that stuff. It really doesn't matter what the general public thinks. It's not a popularity, majority-rules situation. They do have, however, an agreement that goes along with that property. When Niimi got it zoned from agricultural to commercial, she had to consent to a couple of conditions that related to the property as a whole before it was subdivided into the three parcels Hanapohaku has and [the property] that Foodland has. So it says, "Make improvements to the road." Well, what does that mean? Nobody knows. I don't know what it means. Ok, so that's one of those things that's floating around out there. Nobody knows what it means.

DD: Got it. Thanks for sharing that. So are there any other cultural concerns the community might have that we haven't discussed that you think we should talk about?

BL: You know what would be nice, and a lot of people out here in Hale'iwa don't do it either, but it would be nice if they would use Hawaiian words when they can, and they would use the appropriate diacritical markings, too. It's Hawai'i, you know? And the more attention to detail, the more real it all is. And those are just little things. I've gone to a lot of shops out here [in Hale'iwa], and I say, "Why don't you make it pono? Straighten it out." I'm not trying to be pissy, maybe I am, but not for bad reasons. [laughs]

DD: Right. It's an educational opportunity.

BL: There you go.

DD: And are there any other community people or kupuna you think we should talk to?

BL: The person who ought to know the most is Elaine Niimi's daughter, Susan Niimi.

DD: Susan Niimi?

BL: Susan Niimi, who lives up on the hill, and her mom was affiliated with that property for a long time. And I tried to call her to ask her if there was anything she felt would be pertinent or germane or otherwise, and she didn't return the call.

DD: Oh ok, I'll pass her name on. Was the original store her parents'? Or her grandparents'?

BL: Her mother was Elaine Niimi. Elaine Niimi acquired that name through marriage, and they divorced.

DD: It's Ni-i-mi?

BL: N – i – i – m – i. If you go to Google and type in Niimi Store, the pictures will come up.

DD: Ok. I'll google it.

BL: Yeah.

DD: Well, unless there's anything else, I guess that concludes, yeah?

BL: I want to thank you for lunch today.

DD: No, I want to thank *you.* I enjoy talking story with you.

BL: Well you're an easy person to talk to. I know I'm in way over my head. I shouldn't even be talking about this stuff, you know, haole boys aren't supposed to be talking about Hawaiian stuffs, Hawaiians are supposed to talk about Hawaiian stuffs.

DD: Well it is 'ike, and you're sharing things that you've learned and things that have been shared with you, so it is 'ike, and we appreciate it.

BL: I really wish our area had more kupuna, and it doesn't. There are not a lot of piko families out here. So they always talk about, oh go talk to the kupuna, but where do you go? So it's hard. I try to keep my chin up, I wish I knew more.

DD: Well it is a lot, what you've shared, it gives a lot of background, a lot of good significance about the area, so we really appreciate that. So once again, thank you to Uncle Bob Leinau for taking the time, he came from working with the students in Waialua today to meet with us. So I'd just like to say, "Mahalo and have a good day. Aloha."

BL: Mahalo and Aloha.

APPENDIX E: INTERVIEW WITH TOM SHIRAI

TALKING STORY WITH

TOM SHIRAI (TS)

Oral History for the Pupukea Commercial project by Dietrix Duhaylonsod
(DD) For Keala Pono 4/17/2017

Note: Uncle Thomas Shirai shared his personal background in a previous cultural impact assessment for a project in Hale‘iwa. He has given his permission for us to use that portion of the previous cultural impact assessment to introduce himself here.

DD: Aloha, today is Monday, April 17, 2017, and it’s a good day because I’m talking story with Uncle Thomas Shirai. We’re over here at Hale‘iwa McDonald’s, and it’s really good to see him again. And of course before we go any further, I gotta say, “Mahalo nui loa,” to Uncle for spending time today. So mahalo, Uncle, and aloha.

TS: Mahalo very much to you, Koa, and it’s very good to see you again.

DD: Same hea, Uncle. So you know, the last time we talked story, you shared some of your personal background, and I was thinking that we could transfer that over, unless there’s anything else you’d like to add about your background?

TS: Ok, yeah, I think from the last project, I will share that what I did for educational purposes is that a lot of people now have a different perspective of what Hale‘iwa really means and how things fall into play when you really do your research. And I’m very, very grateful that you translated a newspaper article that was pertinent to that report that you prepared for that project. And it sets things to add to the real meaning of what Hale‘iwa really is. And I must say that many people, Local and non-Local, did not know. Or the ones that might know had made their passage. And so that was one of the things that I held kapu because I still mourn my grandfather, and as time goes by now, that’s why I decided that I had to move on and ‘oki. I didn’t do it to show off, I just wanted to share this truth. And so when I did share that, a lot of em, for them it was very gratifying because it was the first time they heard that story. [laughs] I said, “Yes, it’s not about a seabird.” I said, “The seabird, that’s another story in Waialua. It’s not here. Even though the song says ‘Hale‘iwa beautiful home’, you know, nice house, but there’s a symbolism that goes with that, and that was that fern.”

And you going to the United Nations, and that [United Nations] flag has the two olive branches. Look at today’s state seal, it has the two iwaiwa ferns. And going back to that Kuokoa [Hawaiian language newspaper] article, and it didn’t stop there. It didn’t stop at Kukaniloko. That whole district, that’s where we find Mailikukahi, the chief, and the thing was this. How significant was that? That’s where the ahupua‘a system was made, in Waialua. So that’s the kind of things Uncle shared with them, and now they have a better grasp.

DD: Yeah, so Uncle’s referring to when we talked story about the Hale‘iwa project, and there’s a lot of information that enlightened a lot of people, you know, like some of the meanings people learned about Hale‘iwa. That was a good one, Uncle, thank you for sharing for that one.

TS: But Aunty has ties there too, you know. Like the Surf and Sea, I explained about her grandfather and stuff li’dat. So I hope all goes well with that project. Did you want me to just continue into Pupukea?

DD: Yeah, well maybe we could start with, I know you were talking to me offline about connections to the area.

TS: Wait, I'm sorry, I am so sorry, I forgot one more relevant thing to add to that. Recently, our councilman, Ernest Martin, introduced a resolution. It expands the Hale‘iwa Special District from its current location. Now it goes more towards the north to Pua‘ena Point. So that's something relevant to that project.

DD: Right, right, it's relevant to it.

Ok, so maybe we could start this one with how you became associated with that Pupukea site and how you got to know about that place?

TS: Ok, my grandfather was an esteemed carpenter for Waialua, and one of the testaments to his quality workmanship is that he remodeled Otake Store, and it's still standing today. Another project is when they first came up with Meadow Gold Dairies, he's the guy that was the supervisor in charge of building the structures for Meadow Gold Dairy. And another project would be in Pupukea, when Mr. Sullivan used to have a mansion up on Pupukea, the hills. He's the Foodland manager, the owner. He [my grandfather] did some repair work over there. But more specifically, to this specific project area, my grandfather was hired by Mrs. Elaine Niimi, who was a realtor. And he did many a repair work for her, and some of the repair work [that my grandfather did] was done on that specific parcel [of the project site] when it was houses and structures for rental, mostly for housing rental, yeah? So I used to go with my grandfather and my uncles, and they did a lot of carpentry work. Plus for me personally, the most construction work that I did for them was that I helped do the roofing for both houses with my grandfather and my uncle. So that brings memories.

DD: So Uncle is talking about Mrs. Niimi. And they [the Niimi family] used to live on that property that we're talking about, so that's some first-hand experience about the project area.

TS: Yes. Even in her later years, Mrs. Niimi used to periodically come to the Neighborhood Board, you know, to attend meetings, just to be informed or whatever. And she remembered who I was [with a surprised tone of voice].

DD: [laughs]

TS: And we'd say to each other and reminisce a little bit about my grandfather and stuff like that. And it was very nice to see her, yeah.

DD: Nice ties to the area.

What about that specific and place and the places maybe across by the ocean or on the hill, is there anything significant that comes to mind regarding the cultural history of the area that you could share?

TS: Ok, I can share little things like I know there's a Hawaiian name, that I don't know off hand, for Shark's Cove. But I also know that old-time fishermen and residents of all nationalities used to go there with bamboo pole whip and catch fish, like nenue especially.

The fire station, I can say some more personal accolades, like my uncle was a fireman over there. And that area, you know that coral area that's right next to it?

DD: Right.

TS: Yeah, that was formed mostly because of dynamite blasting because they were mining for a little while. And that's why it's shaped like that. Of course you see the Three Tables. Everybody knows that. And there's a Hawaiian name for that. It's the "Pele Stones" and what not and stuff.

But more personally, I have a lot of family up in the Pupukea hills especially, branches of my grandpa's family, cousins, uncles, aunties, and so on and so forth. And some of em still reside there 'til today, and friends and classmates and all those kind of things. But more significantly is when I started to do my genealogy research, and researching my family's legacy, I come to find out [laughs], they own some unique parcels down there. I may be on that property [for the project we are talking about], it says Pupukea. And so I thought that was unique, and that's why I thought, "Why not share that with Koa here," and add that to the discussion and history of the place. So I did get the Land Commission Award to see, and I was like, "Wow, that's pretty unique." I didn't know they had parcels all over the place.

And you know, the Hawaiians back then, they not doing it for aesthetics. They doing it because there's something special. Like maybe they had agricultural things going on there. Maybe they had water resources, maybe it had marine resources, you neva know. But it wasn't because you like the land so they can build one million-dollar house. It wasn't because of that [both laugh].

There is one thing I can share aesthetic-wise, every Sunday, I'm familiar with that area because when I was growing up, my grandmother was a Jehovah's Witness, and the church was at Sunset Beach. I have an uncle, an aunty, and my cousins, and my aunty's family, the Mira (sp?) family, donated land at one time to build the Kingdom of Jehovah Witness [church] over there. It's on their property, so we got to go there. And my uncles, and my grandfather-them, they kōkua little bit, help construct that church. And my grandmother, being that [she was] Jehovah Witness, we go there, we pass there. And let me tell you, Koa, I saw a sight, just like it's a once-in-a-lifetime. You could see, from Kamehameha Highway, when you just past there, one day we saw the island of Kaua'i. You could see Kaua'i, one very clear, clear day, the kine like how you see right now from here to Mount Ka'ala, like that kind, but was a clear day. You can see the whole mountain, no moa clouds, and was clear, was sunny. There is a newspaper article that shows the picture, but you gotta dig for em. I seen em, I remember, I saw that picture. It's a color picture. So it must be in the Advertiser or Star Bulletin archives. It was a beautiful picture, a once-in-a-lifetime.

DD: Wow, thank you for sharing your connection to Pupukea, Uncle, I remember from last time we talked that you're very connected from Pupukea all the way to Kawaihāpai side.

TS: Mmhmm.

DD: As far as you remember, how has the area changed? We're talking about that place where they plan to build this commercial center. Can you talk about how it's changed, how it's different now?

TS: [laughs] I no can say em on the radio.

DD: [laughs]

TS: I no can say em on top this recorder [pause] but all I can say is as time goes by, you get modern development, and what was once to me sporadic, isolated lunch wagons, now it's just like it's becoming their own industry. We got like, my goodness, like here in Hale‘iwa, like 23 lunch wagons. It's like an "easy-out" instead of going to one restaurant. And it adds to social problems like traffic, the ‘ōpala, and all that kine stuff.

Being in the service like you, Koa, we seen, when you have it all catered to tourism, you have a once pristine, sleepy town turned into a tourist trap. How I can best say it, like for example, like Baja, Mexico, or Tijuana, you know, you see what happened, that kine stuff. It's all catered to tourists. Hale‘iwa is that way. Lahaina is like that. And what I'm very, very saddened by is that then you have this influx of people coming from all over, and then that influx, with each layer coming, then the original culture gets covered, layer after layer after layer, until it's way under, or unheard of, or erased. And that's the kind of things that saddens a lot of us.

You know, Hale‘iwa, for example, we have the North Shore Chamber of Commerce. Yes, they wanna preserve the historic Hale‘iwa, yes, but their emphasis is the plantation era, or the World War II era. When you go into their office, the memorabilia reflects that. There's no pictures of taro patches. There's no pictures of excerpts of Land Commission Māhele maps, none of that. It shows people dressed in military clothes, that's it, it shows military people at Hale‘iwa Beach Park. And to me, sure it's part of the history, but you're not telling the full story.

You're not telling the full story of the place. And that hurts. We see it come alive only when they make books, for profit. Then we'll see, "Oh we got this from archival photographs." This and that and stuff, and it's like, "Why didn't you say that from the very beginning?" Now people are only gonna focus on this as a World War II town. "Taro patches, what you talking about," they're gonna say stuff like that. And that's not right.

DD: Right. It's very important that people don't leave out parts of history, especially the pre-contact history. That's the foundation of what this place is and was, you know, Hale‘iwa and Pupukea.

TS: And the thing is too, it's hurtful that the tourist industry has banked on an original Hawaiian sport called surfing. They have made millions and millions, and what have they given back to the community, to improve these kinds of projects? Nothing.

DD: Some people don't even now it started here. They think it started in California.

TS: Oh yes. The thing is this. It [surfing] started out as you just go out and relax, catch a few waves and come back. When does it end with the thrill seeking, tow-in surfing, windsurfing, you know, jet ski? All we wanted to do, the purpose was to go out dea, catch couple waves, have a good time and come back in. That's it. And then when you see the advertisements, you won't see Hawaiian people out there. You see foreign people riding waves in foreign lands like South America or Mexico or California. And it's a false representation. I don't know what to say.

DD: Well, we should tell the story the correct way it's supposed to be told. And so we try to do that. [pause]

And what about that parcel of Pupukea land, do you think that traditional sites are on there? Any burials? Anything culturally that we should be aware of?

TS: I can honestly say that I don't know too much about that area because I wasn't raised too much over there. But at least I've shared some sort of relationship. And although it's just some documents that show genealogy and land tenure and stuff, at least you can see that it's Hawaiian land tenure dating back to the kingdom era. And in fact, some of those street names are some of the kūpunas that were awarded [land claims], you know? I'll give you an example, there's in Pupukea, close by, one of the street names is Kumupali. And if you look it up, it's a kupuna, a man that was awarded a Land Commission Award in that area, you know, and that's why they get the names. We had one in Haleʻiwa here recently, that Haleʻiwa Plantation Village, the Mr. Wallace project, did you hear of that one?

DD: No, I neva.

TS: Ok, I'll go and share something. I dropped a bomb [of info] on them. They thought it was just a street name, Kilioe Street. And then my question that I asked everyone was, "Do you know why that street is named Kilioe?" And nobody knew. And for you, I will share. Kilioe was the name of a kupuna that was awarded a Land Commission Award in that exact location. I said, "That's why it's called Kilioe Place." And they were like, wow. I said, "You guys didn't do your homework." These are people from this area. They are not randomly picked names. I said, "You bettah start paying attention, doing your work, then that helps you with however you wanna run with it." Do your research, then you get the kūpuna behind you. Even if you not from there, but if you acknowledge that, knowing why it's called Kilioe Place, and you can cite like one Bible verse, "Land Commission Award, so and so and so to Kilioe," then you've established a tie there and a respect.

And Uncle has family that directly tied. Like for this Pupukea project, I remember some of the Land Commission Awards, but this one is very significant. In that parcel for that Haleʻiwa one, they did title research, and they got the Land Commission Awards. But when they went to a specific parcel, it was just like they hit one dead end. And the name of that parcel is a very significant land holding because at one time, it was part of my family's. It was Land Commission Award 7713 to Princess Victoria Kamamalu.

DD: The one in Pupukea, or the one in

Haleʻiwa? TS: The one in Haleʻiwa.

DD: Oh ok.

TS: That project, when they did that, I know what happened. They couldn't find nottin'. It just showed it was from Princess Kahanu to Castle and Cooke. That's not true. I showed them. I says, "Here's my family's deed, at one time." I showed them that, and they were like, "Oh my!" And then I said, "That is why I decided to say something, because you guys did not do your work." I said, "And also, the constituents that provided comment didn't do their homework also. How come?" I neva say nottin' because I cannot be in all places at one time.

And it's another question like the story I told you before you turned on this tape recorder, about Waimea Valley. Yeah, shame. And so now I feel in my head, "Do I have to [say something]?" I'm 55 [years old] right now. You mean to say I gotta be at everything? I cannot relax? I cannot get a break from this? When you guys gonna step it up and show me something? When? I said, "This hurts me." You are supposed to be doing it, helping, and I'm supposed to relax, not me go do the ground work.

When we went to the meeting, oh! Pau! Even the Land Commission Board, they neva heard anybody say something like that about that project. And it's like, "I told you." I said, "I told you." And then I said, you know, the same thing, and sure enough too I found the actual picture in 1890 of one taro patch in dea, mean, yeah, and it includes like from Keliioi Place, it's a land division over there within the ahupuaʻa system, one smaller land division, you know that. And when I told em that, then sure enough, bing, I show them, ok, go on Waihona dot com again, 15 names, 15 kūpuna, 15 Land Commission Awards. You guys all missing something. What am I saying? "You wanna rezone this to building?" I said that these are all people that said that this land was for agriculture. And I neva see them complain about "this land [is] junk." I heard them say, "I get six loʻi. Ten loʻi. Two sweet potato patch. I get one stream near my property. I nearby the fishpond." I said, "They neva complain about nottin' and say, 'All this kine [is] junk.'" They made the best of it. So **you** must be screwing up.

DD: That's a big difference in perspective, of looking at the land.

TS: And then, I tied it into my own, lo and behold, you know, Koa, in one simple city directory, that's my kupuna's name. It shows where they from. And it shows the occupation, yeah. That place where they like zone, it shows my kupuna's name, John Keahipaka; occupation, taro planter; year, 1900. And not only my tutus, others get something like that inside the directory. They must have been damn good at what they did to get that title back then, "fisherman" or "taro farmer", very prestigious. They neva get em because oh they caught one big school fish one time. No, no, it's consistent. Could you imagine if they had all the modern equipment that we have today? They would be like hundred times more bettah than us. They could laugh at everybody.

But that parcel, a couple streets away from there, my grandfather had a good friend who was in the Army. He was a dentist. And his name was George Koranawsky, and he's Ukranian. He's from New York, and we call him my grandfather's Haole son. He loved my grandfather. My grandfather loved him and helped him a lot. Today, he's not only a successful doctor, but also an orthodontist, an orthopedic surgeon for the mouth. Doesn't stop there, he's a multimillionaire today. He owns a hotel or condominium in Atlantic City. He came that successful because my grandfather helped him with a lot of life skills and stuff like that. He did a lot of repair work for him too because he was in real estate. And he had his house, and he had a plumeria farm. And my grandparents used to go down dea cut the grass and stuff like that. So it was an established relationship with people like Chuck Machado Luʻau, you know, that kine stuff li'dat. So that's what I can share about Pupukea.

DD: What about, do you think that if they were to build there, do you think it would affect any traditional gathering practices, or any access to gathering places?

TS: Existing conditions, I would say that it's similar or parallel, same thing, to like how the Haleʻiwa stores project is next to the fishpond, you know. You already have leakage. You already have sewage leakage going into, you know, those type of things that they're dealing with. So it's ongoing. It's not like it was done today, or they going build em and then [now there's leakage]. Septic tanks, that's a hot topic for those projects, septic tanks versus cesspools.

And so, the March Neighborhood Board, we had a special meeting I think a couple years ago at Waimea Valley. The owners and Hanapohaku made a presentation and stuff, and they heard the concerns of the neighborhood. So I letting you know. On the website, you'll see the North

Shore Neighborhood Board webpage, you'll see the videos and the special meeting. You go back, and you'll see em, yeah, about a two-hour meeting. I was dea [laughs], but you know had community members. One of the biggest opponents against it was the Mālama Pupukea people, you know, the sanctuary, MLCD, Marine Life Conservation District. That's the biggest one, and I know all those people.

DD: So the main concern would be leakage underground to the ocean?

TS: Yeah, it's ongoing, I would say.

DD: Do you have any suggestions to lessen the effects?

TS: Yeah, that's what they brought up, a couple lawsuits against them. They're trying mitigation and stuff of that sort. We're just an advisory board, but we're aware of those things, and that's the hot topic. Plus traffic is another big concern, traffic studies, added traffic, and so on and so forth. But those are the two main issues.

DD: Do you know if they brought up measures to lessen the adverse effects of added traffic? Or would you like to toss out any suggestions here?

TS: That's between, I would say, more appropriately, for the general public that lives up around there especially.

DD: Right.

TS: Yeah, they deal with it. Oh boy [both laughing].

DD: Are there any other cultural concerns you think that the community might have regarding the area?

TS: Ah, just to reiterate, although yes, the cultural information I've shared is not as in-depth as the previous project, but I would say that this project is not near cliffs, yeah? And those cliffs are documented, such as being burial caves. And that's a hot issue. What I could share is that one of your reference points that is near there would be, besides the Waimea Valley, is that when they realigned Kamehameha Highway, going around the rockfall mitigation, you know, the exposure of iwi kupuna in burial caves, you know, the grading or whatever they needed to make, or for the landslide or rockfall, they did come across that [iwi kupuna].

DD: Ohhhhh, ok, ok.

TS: So that's why you see certain parts with the netting over there, and the netting is hugging the edges over there. That's why it's like that, you know, at various locations around the mountains and stuff. It's a known place for those things. So that's one of the first cultural things that's gonna come up. It's burials in caves. Yes, we get [iwi] in the sand at various places and stuff, but mostly the sensitivity is directed more so towards the cliffs, the foothills, and what not.

DD: Ok, and that's pretty far back from where the project is?

TS: Yes, exactly.

DD: Ok.

TS: I guess then, that if you're worried about those type of things, for the burial caves the protection would be for the social impacts of people going there and nosing around, cutting a trail, going up there and trying to scale the mountain and stuff, rock climbing or whatever.

DD: Nowdays, you got these people doing stuff like that, yeah?

TS: Huu, headache. I wouldn't even think about doing something like that, you know? That's unheard of because we know what going happen. You lucky if you just get one verbal reprimand [laughs]. Let's put it this way. You lucky if you can sit down afterwards [laughs]. Or, you no need go tattoo shop [both laughing], you get the same color, but more emphasis on the black and blue, that's the two primary colors. [both still laughing]

DD: Auwe [laughs]. What about other community people, do you know any other community people that you think we should talk to?

TS: Ah, yeah, you know, you get Bob Leinau, the Mālama Pupukea people. [pause and thinking] Let's see. I can say there's four Neighborhood Board members, Bob Leinau, Sherilyn Ku.

DD: Sherilyn Ku?

TS: She's more with the Sunset Beach Association further up the coastline. And [pause] I cannot think of this guy's last name. But Bob Leinau, and Denise Antolini…

DD: Denise Antolini?

TS: Yeah, she used to be the Chief Executive Officer for the Mālama Pupukea. They're all members.

DD: They're all in the same hui?

TS: Yeah, if you draw up that webpage, you'll see a whole bunch of those people. Some of them are cultural practitioners. And you can go there. Like me, I have family, but they don't bother this kine stuff. But if you like other stuff like hunting and fishing, mean brah, they get em. This is not their thing, to talk about this kine things. But they're there. They're still living there. And in fact, Councilwoman Kimberly Pine, she's from Pupukea.

DD: Really?

TS: Yeah, she's from Pupukea. I went to school with some of her family, classmates and stuff like that. She was a kid, when I was a senior, they was all in the 7th grade. [Class of] '79, that's a dinosaur already, and then you get [class of] '80, so we the last of the dinosaurs, last of the Mohicans. But yeah, she from there. Her family still lives in Pupukea. Maybe you can ask her. And she's also the zoning chair.

And getting back to the Hale'iwa Village Project, that's what happened there too. You know, you got all this rich history about the place that I've showed you, pre-Western history, and when you read the environmental assessment, two-pages, when you read it, it not the Land Commission Awards or the title searches, which I thought was relevant, not just the title search

page and boundaries and stuff, that should've been included in the cultural history, like how you guys prepare, you go break it down step by step, which parcel is what's the kupuna name. What's the contents of it? That's historical data. They had to look for em. And it's like, "Who the hell is these guys?" I don't know why they would hire em. The feelings I got when I read em was just like put together.

DD: Who did that one?

TS: It was just some off the wall company. And the guys that did the title search, something "Hawai'i" or something, and if this was just a regular title research, that's fine. But you're dealing with parcels with Hawaiian names on em. They're not looking to get their land back here, but you can't dissect the cultural part from this part because they go hand in hand. They tell the history of the place. And if you don't acknowledge that, wow, you get what's comin'. That's all I can say. So that's what I can share.

DD: Ok, well, this is a lot, Uncle, you know, as always. You have a wealth of knowledge to share, and thank you for always being generous with sharing, and letting us know the significance and importance, and always keeping it in perspective of what we should be mindful of. We really, really appreciate it. And once again, it's always a pleasure to see you and talk story with you. So mahalo again, and have a good day. Aloha.

TS: Yeah, well, thank you very much for spending time with me, and glad to share my mana'o with you. Aloha.

APPENDIX E

STATE HISTORIC PRESERVATION DIVISION ACCEPTANCE OF ARCHAEOLOGICAL ASSESSMENT REPORT

ARCHAEOLOGICAL ASSESSMENT FOR
TMK: (1) 5-9-011:068, 069, AND 070 IN
PŪPŪKEA AHUPUAʻA, KOʻOLAULOA DISTRICT,
ISLAND OF OʻAHU, HAWAIʻI

State Historic Preservation Division Acceptance of Archaeological Assessment Report

DAVID Y. IGE
GOVERNOR OF
HAWAII

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING
601 KAMOKILA BLVD, STE 555
KAPOLEI, HAWAII 96707

SUZANNE D. CASE
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
FIRST DEPUTY

JEFFREY T. PEARSON, P.E.
DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

August 22, 2017

Andrew D. Yani, Manager
Hanapohaku LLC
59-712 Kamehameha Highway
Haleiwa, Hawai‘i 96712
Email: Hanapohakullc@gmail.com

IN REPLY REFER TO:
Log No.: 2017.00580
Doc. No.: 1708SH08
Archaeology

Dear Mr. Yani:

SUBJECT: **Chapter 6E-42 Historic Preservation Review –**
Archaeological Assessment for TMK: (1) 5-9-011:068, 069, and 070
Pūpūkea Ahupua‘a, Ko‘olauloa District, Island of O‘ahu
TMK: (1) 5-9-011:068, 069, and 070

Thank you for the opportunity to review the draft report titled, *Archaeological Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupua‘a, Ko‘olauloa District, Island of O‘ahu, Hawai‘i* (McElroy and Lima, March 2017). The State Historic Preservation Division (SHPD) received this submittal on March 28, 2017.

Due to the negative findings, the archaeological inventory survey (AIS) results are reported as an archaeological assessment (AA) per Hawaii Administrative Rules (HAR) §13-275-5. This AA report was prepared by Keala Pono Archaeological Consulting, LLC at the request of G70 and on behalf of the landowner, Hanapohaku LLC. The project area is located on the coast of Pūpūkea and totals 2.72 acres. The project area includes three parcels and is bounded by Pahoe Road to the north, Kamehameha Highway to the west, Foodland to the south, and a private parcel on the east. The landowner proposes to develop a rural community commercial center to provide a combination of goods and services to residents and visitors of the community. Three new buildings will be constructed, one-to-two stories tall, totaling approximately 30,000 square feet. The buildings will be set back from Kamehameha Highway and include a park-like green space, walkways, and bicycle parking; supporting infrastructure will include driveways, parking with solar canopies, drainage, water supply, and wastewater.

The AIS included a pedestrian survey covering 100% of the project area in 10 meter transects as well as the excavation of eleven test trenches. No historic properties were documented during the AIS. The area has been disturbed by modern development activities, such as paving and bulldozing. Due to the negative findings and because soils in which human remains are often interred were not encountered during the AIS, the archaeological assessment indicates no further archaeological work is recommended. The SHPD concurs.

The report meets the requirements of HAR §13-276-5. **It is accepted**. Please send one hardcopy of the document, clearly marked FINAL, along with a text-searchable PDF version to the Kapolei SHPD office, attention SHPD Library.

Please contact Stephanie Hacker at (808) 692-8046 or at Stephanie.Hacker@hawaii.gov for matters regarding archaeological resources or this letter.

Aloha,

Susan A. Lebo

Susan A. Lebo, PhD
Archaeology Branch Chief

cc: Jeff Overton, G70 Design, (Pupukea@G70.design) (Jeff@G70.design)
Windy McElroy, Keala Pono Archaeological Consulting, LLC (wkm@keala-pono.com)

Archaeological Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi

FINAL—Archaeological Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi

Prepared For:

G70
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

August 2017

Keala Pono Archaeological Consulting, LLC ● PO Box 1645, Kāneʻohe, HI 96744 ● Phone 808.381.2361

FINAL—Archaeological Assessment for TMK: (1) 5-9-011:068, 069, and 070 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi

Prepared For:

G70
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Prepared By:

Windy Keala McElroy, PhD
and
Pūlama Lima, MA

August 2017

Keala Pono Archaeological Consulting, LLC ● PO Box 1645, Kāneʻohe, HI 96744 ● Phone 808.381.2361

MANAGEMENT SUMMARY

An archaeological inventory survey (AIS) was conducted for a proposed commercial development in Pūpūkea Ahupuaʻa, Koʻolauloa District, on the island of Oʻahu on TMK: (1) 5-9-011:068, 069, and 070. Due to negative findings, the AIS results are presented as an archaeological assessment (AA). The archaeological work included pedestrian survey that covered 100% of the 1.1 ha (2.72 ac.) project area, as well as test excavations consisting of 11 trenches.

No surface archaeological remains were found during pedestrian survey of the parcels. The entire area has been disturbed by modern activity, such as bulldozing and paving. Subsurface testing produced no findings and no Jaucas or beach sand was encountered, therefore archaeological monitoring is not recommended.

CONTENTS

MANAGEMENT SUMMARY i
FIGURES iv
TABLES iv

INTRODUCTION 1
Project Location and Natural Environment 1
TRADITIONAL CULTURAL AND HISTORIC BACKGROUND 6
Place Names 6
Pre-Contact Pūpūkea 11
Land Use 11
Wind Name 11
Moʻolelo 11
Hiʻiaka and Piliaʻama 11
Pōhaku of Significance 14
Puʻu o Mahuka Heiau 14
Pūpūkea in the Historic Era 15
Early Historic to Post-Contact Period 15
Mid-19th Century and the Māhele 15
1900–the Mid-1900s 16
Modern Land Use 16
Previous Archaeology 20
Summary of Background Information 26
Anticipated Findings and Research Questions 26
METHODS 27
RESULTS 28
Community Consultation 28
Pedestrian Survey 28
Subsurface Testing 28
Summary of Findings 30
SUMMARY AND RECOMMENDATIONS 40
GLOSSARY 41
REFERENCES 43

FIGURES

Figure 1. Project area on a 7.5 minute USGS Waimea quadrangle map. 3
Figure 2. Project area (in red) on a TMK plat map. 4
Figure 3. Soils in the vicinity of the project area. 5
Figure 4. Portion of a map showing the north coast of O‘ahu (Donn 1902). 17
Figure 5. Portion of a Pupukea-Paumalu Homesteads map (Wall 1904). 18
Figure 6. USGS 1962 aerial photo of Pūpūkea. 19
Figure 7. Location of previous archaeological studies in the vicinity of the project area. 21
Figure 7. Location of known archaeological sites in the vicinity of the project area. 22
Figure 8. Excavation of TR 1 with mini excavator. Orientation is to the southwest. 27
Figure 9. Open gravel-paved area. Orientation is to the north. 29
Figure 10. Bulldozed area. Orientation is to the south. 29
Figure 11. Disturbed, vegetated area. Orientation is to the east. 30
Figure 12. Location of trenches on aerial imagery. 31
Figure 13. Wider view of trench locations on a 1992 USGS map. 32
Figure 14. TR 7 north face profile drawing. 35
Figure 15. TR 7 north face photo. 35
Figure 16. TR 5 north face profile drawing. 36
Figure 17. TR 5 north face photo. 36
Figure 18. TR 8 north face profile drawing. 37
Figure 19. TR 8 north face photo. 37
Figure 20. TR 1 east face profile drawing. 38
Figure 21. TR 1 east face photo, north end of the trench. 38
Figure 22. TR 11 west face profile drawing. 39
Figure 23. TR 11 west face photo. 39

TABLES

Table 1. Previous Archaeology in Pūpūkea 23
Table 2. Sediment Descriptions 33
Table 3. Trench Locations and Dimensions 34

INTRODUCTION

At the request of G70, Keala Pono Archaeological Consulting conducted an archaeological inventory survey (AIS) for a proposed commercial development in Pūpūkea Ahupuaʻa, Koʻolauloa District, on the island of Oʻahu on TMK: (1) 5-9-011:068, 069, and 070. This work was designed to identify, document, assess significance, and provide mitigation recommendations for any historic properties that may be located in the project area in anticipation of the proposed construction.

This report is drafted to meet the requirements and standards of state historic preservation law, as set out in Chapter 6e of the Hawaiʻi Revised Statutes and the State Historic Preservation Division's (SHPD's) draft *Rules Governing Standards for Archaeological Inventory Surveys and Reports*, Hawaii Administrative Rules (HAR) §13–276. Due to negative findings, the AIS results are presented as an archaeological assessment per HAR §13–275-5(b)(5)(A).

The report begins with a description of the project area and an historical overview of land use, Hawaiian traditions, and archaeology in the area. The next section presents methods used in the fieldwork, followed by results of the survey. Project results are summarized and recommendations are made in the final section. Hawaiian words and technical terms are defined in a glossary at the end of the document.

Project Location and Natural Environment

Hanapohaku LLC is proposing to develop a rural community commercial center in Pūpūkea, Oʻahu to provide a mix of goods and services to residents and visitors of the community. The property is classified as Urban in the State Land Use Designation, is zoned for B-1 Neighborhood Business in the City and County of Honolulu Land Use Ordinance, and is designated for a Rural Community Commercial Center in the North Shore Sustainable Communities Plan.The existing Foodland grocery store is included in the center. Three new buildings will be constructed, one to two stories in height, totaling approximately 30,000 SF. The buildings will set back from Kamehameha Highway with a park-like green space, walkways, and bicycle parking. Supporting infrastructure will include driveways, parking with solar panel canopies, drainage, water supply, and wastewater.

The project area is located on the coast of Pūpūkea on the north shore of Oʻahu (Figures 1 and 2). One of 23 ahupuaʻa in the Koʻolauloa Moku, Pūpūkea is bounded to the northeast by Paumalū Ahupuaʻa, and to the southwest by Waimea Ahupuaʻa and Moku.

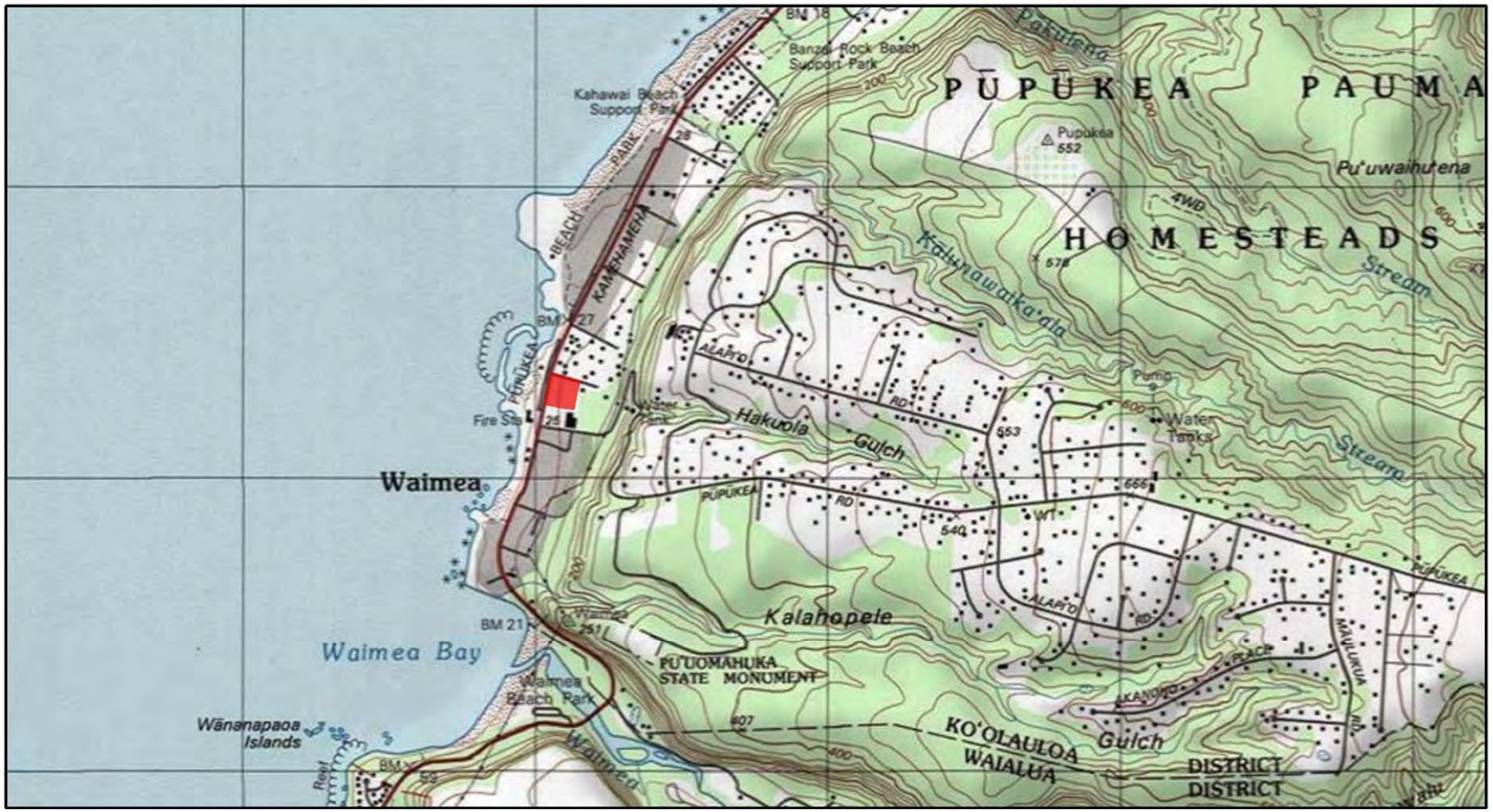
TMK: (1) 5-9-011:068, 069, and 070 total 1.1 ha (2.72 ac.), and are owned by Hanapohaku, LLC. This project area that includes the three parcels is bounded by Pahoe Road on the north, Kamehameha Highway on the west, Foodland on the south, and a private parcel on the east. Topography is relatively flat, and vegetation consists of pockets of koa haole, grass, and weeds. Rainfall averages approximately 115 cm (45 in.) per year (Giambelluca et al. 2013). The project area is roughly equidistant from two watercourses, Kālunawaikaʻala Stream, which lies approximately 1 km (3,280 ft.) to the north, and the larger Waimea River, that is 1 km (3,280 ft.) to the south. The project area lies at approximately 12 m (40 ft.) above mean sea level (amsl), and is 150 m (492 ft.) from the coastline at the beaches known as Sharks Cove and Three Tables.

Geology of the project area centers around the Koʻolau Mountain Range, the massive shield volcano that serves as a backdrop for the windward Oʻahu coast. Formed roughly 1.8–2.6 million years ago, the Koʻolau mountains produced tholeiitic and olivine basalts with trace amounts of oceanite (Macdonald et al. 1983). Below the Koʻolau Mountains is the sandy coastal plain that was formed during a time when the sea level was higher. Soils are of the Kaena-Waialua association, which were

used for sugarcane, pasture lands, orchards, truck crops, urban development, and recreation, but must be drained before they are cultivated (Foote et al. 1972). The soil series is described as follows:

> Deep, mainly nearly level and gently sloping, poorly drained to excessively drained soils that have a fine-textured to coarse-textured subsoil or underlying material; on coastal plains and talus slopes and in drainageways. (Foote et al. 1972)

Specifically, soil types in the project area are Waialua silty clay, 3–8% slopes (WkB) (Foote et al. 1972) (Figure 3). These soils are found on coastal plains and are typically used for pasture, sugarcane, and truck crops (Foote et al. 1972:128).



Layer Credits: USGS Topographical Waimea Quadrangle Map 1998

Figure 1. Project area on a 7.5 minute USGS Waimea quadrangle map.

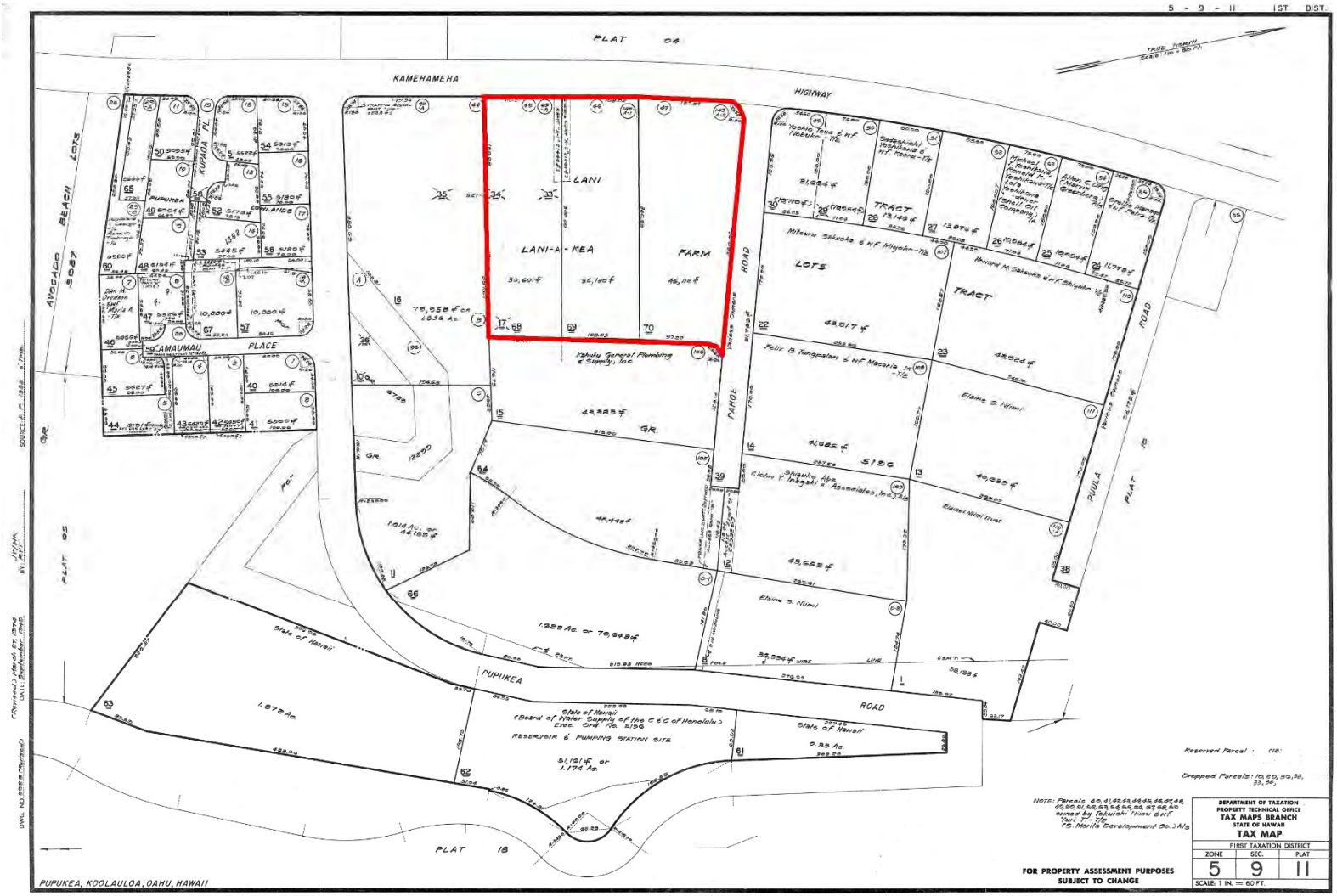


Figure 2. Project area (in red) on a TMK plat map.

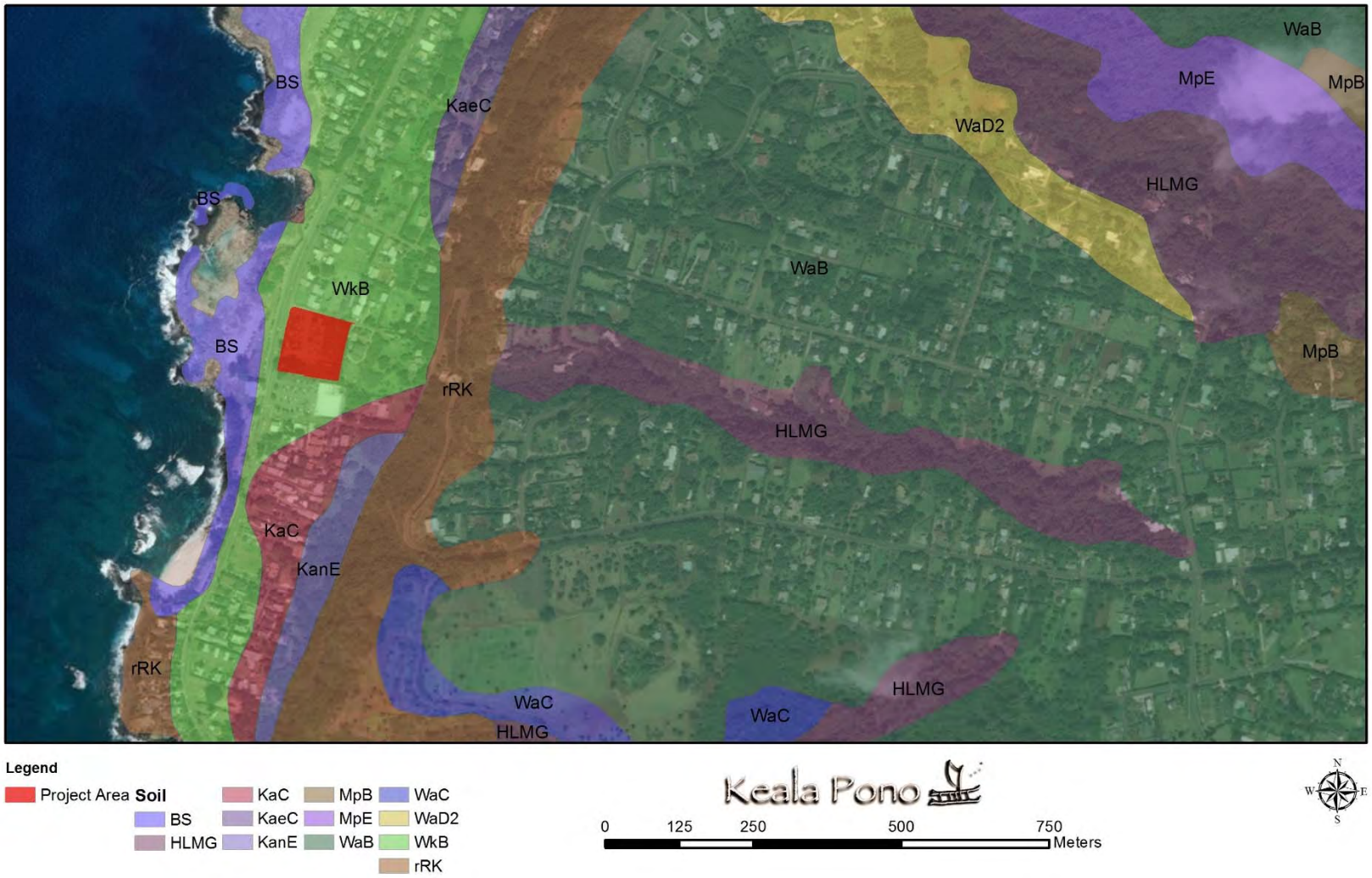


Figure 3. Soils in the vicinity of the project area.

TRADITIONAL CULTURAL AND HISTORIC BACKGROUND

A brief historic review of Pūpūkea Ahupuaʻa is provided below, to offer a better holistic understanding of the use and occupation of the project area. In the attempt to record and preserve both the tangible (i.e., traditional and historic archaeological sites) and intangible (i.e., moʻolelo, ʻōlelo noʻeau) culture, this research assists in the discussion of anticipated finds. Research was conducted at the Hawaiʻi State Library, the University of Hawaiʻi at Mānoa libraries, and SHPD library. In addition, internet resources such as the Papakilo database, Ulukau database, and the State of Hawaiʻi Department of Accounting and General Services (DAGS) website were consulted. Historical maps, archaeological reports, and historical reference books were among the materials examined.

Place Names

Traditional Hawaiian place names are often referred to in ʻōlelo noʻeau, moʻolelo, and mele. Other sources that have documented traditional Hawaiian place names include historic maps, ethno-historic accounts, ethnographic surveys, and early historic land claim records, such as Land Commission Award (LCA) Claims, Grant Claims, and Boundary Commission Testimonies (BCT). The name of a place and its interpretation can reveal significant information about the traditional beliefs and practices associated with an area. In ancient Hawaiʻi, it was common to name places based on their environment, the resources found in the area, the people that live there, events that happened in the area, and religious or spiritual associations. The name Pūpūkea literally translates to "white shell" (Pukui et al. 1976:195). The sea was an important resource in the region, as fresh water for farming was not abundant in the ahupuaʻa.

The following compilation includes Pūpūkea place names, names of features, moʻo ʻāina, heiau, kūʻula, and ʻili ʻāina, along with any translation and lexicology information that could be obtained for each place. The place names and descriptions were gleaned from *A Catalog of Hawaiian Place Names: Compiled from the Records of the Boundary Commission and The Board of Commissioners to Quiet Land Titles of the Kingdom of Hawaii* (Soehren 2010). Translations obtained from Pukui et al. (1976) are abbreviated as PEM in the text.

Ahupohaku
Feature: *moʻo ʻāina*
Claim no. 9976 by Lono is for his "Apana 1. Mooaina o Ahupohaku."
Lexicology: ahu-pōhaku.
PEM: stone heap.

Aleka
Feature: *moʻo ʻāina*
Claim no. 10238 by Kalama is for his "Apana 3. Aleka, hookahi mala uala." Claim no. 2737 by Puhipapa for his "Apana 1. A moo aina was not awarded.
Lexicology: ʻaleka.
PEM: Large tree of the pine family, cedar, fir.

Auwahi
Feature: *moʻo ʻāina*
Claim no. 11010 by Waha: "Apana 1. Auwahi ka aina, he aina kanu."
Lexicology: auwahi.
PEM: smoky glow.

Camp Pupukea
Feature: place
Boy Scout camp.
Lexicology: pūpū-kea.
PEM: White shell.

Hakuola Gulch
Feature: gulch
Stream rises at about 520 ft. elevation, ends at about 120 ft.
Lexicology: haku-ola.
PEM: living lord.

Ka Lua o Maua
Feature: rock
Site 254. Number of stones in the water, one of which is known as Kalua o Maua, first small inlet on the Kahuku side of Waimea Bay…similar to Laniwahine and is representative of a woman who was a great fisher... (McAllister 1933:151; Sterling and Summers 1978: 145)
Lexicology: ka-lua-maua.
PEM. The pit of Maua

Kaaipu
Feature: *moʻo ʻāina*
Claim no. 8039 by Aena is for "Apana 2. Kaaipu. He aina paakai".
Lexicology: ka-ʻai-pū.
PEM: the eating together.

Kaaumakua
Feature: *moʻo ʻāina*
Claim no. 2905 by Kailialoha: "Kaaumakua ka aina ma Pupukea" (Foreign Testimony 11:511), "i ka ili aina o Kaaumakua" (Native Register 3:687).

Kalaekoa
Feature: Boundary point
Course 9 of the Pupukea/Waimea boundary runs "to top of hill Kalaekoa"
Lexicology: ka-lae-koa.
PEM: the koa tree point.
Kalahopele Gulch
Feature: gulch

Kaleleiki
Feature: stream
Lexicology: ka-lele-iki.
PEM: the short leap.

Kalunawaikaala Stream
Feature: stream
Lexicology: ka-luna-wai-kaʻala.
PEM: water from the heights [of] Kaʻala.

Kamaee
Feature: *Kū‘ula*
Site 253. Piles of stones, near mountain side of road near Waimea. One of the most prominent piles has a depression a few inches deep and about 2 feet in diameter. This was known as Kamae‘e fishing shrine (ko‘a), and fish offerings were placed in the mouth like aperture." (McAllister 1933:150; Sterling and Summers 1978:145).

Kamao
Feature: *mo‘o ‘āina*
Claim no. 10924 by Uluehu: "Apana 1. Kamao kahi kanu."
Lexicology: Perhaps ka-ma‘o.

Kanakaiki
Feature: *mo‘o ‘āina*
Claim no. 10924 by Uluehu: "Apana 2. Kanakaiki aina paakai ia."
Lexicology: kanaka-iki.
PEM: Small man.

Kanawai
Feature: *mo‘o ‘āina*
Claim no. 10238 by Malamanui: "Apana 1. Kanawai ka moo aina."
Lexicology: kānāwai.

Kaohaimoa
Feature: *mo‘o ‘āina*
Claim no. 2904 by Kanae: Apana 1. Kaohaimoa ka moo."

Kapi
Feature: *mo‘o ‘āina*
Claim no. 7420 by Kaiwi: "Kapi ka moo ma Pupukea he aina kula."
Lexicology: kāpī. PE: to sprinkle, as with salt. Ka-pī.
PEM: several possible meanings.

Kapuaa
Feature: *mo‘o ‘āina*
Claim no. 7421 by Kalainaina: "Apana 1. Kapuaa ka moo aina." Claims no 7422 by Kaawa and no. 8136 by Holoikauai for parcels in kapuaa were denied.
Lexicology: ka-pua‘a.
PEM: the pig.

Kapuupuu
Feature: *mo‘o ‘āina*
Claim no. 8039:2 by Aena at Kaaipu is bounded on the Waianae side by "aina o Hina, kapaia Kapuupuu."
Lexicology: ka-pu‘upu‘u

Keokea
Feature: *mo‘o ‘āina*
Claim no. 11010 by Waha: "Apana 2. Keokea he aina paakai."
Lexicology: ke-ō-kea. PEM: the white sand (ō is short for one).

Kiinoho
Feature: *moʻo ʻāina*
Claim no. 2904 by Kanae is "ma Kiinoho kekahi kula". Claim no. 4261 by Kauila for his "Apana 1. Kiinoho moo ma Pupukea" was not awarded.
Lexicology: kiʻi-noho.

Kiwaa
Feature: *moʻo ʻāina*
Claim no. 4261 by Kauila for his "Apana 3. Kiwaa aina paakai" was not awarded.
Lexicology: kīwaʻa

Kuaiula 2
Feature: *moʻo ʻāina*
Claim no. 8039 by Aena: "Apana 1. Kuaiula 2 moo he kula."

Kukuauau
Feature: *ʻili ʻaina*
Claim no. 2736 by Pohakahi is "i ka ili aina o Kukuauau, eha ili uala, hookahi kula uala…" Written "Kukaauau" in FT (Foreign Register).

Maunawai
Feature: place
Lexicology: mauna-wai.
PEM: water mountain.

Pakulena Stream
Feature: stream
Lexicology: pākū-lena.
PEM: yellow barrier.

Piliaama
Feature: stone
Site 252. Stone known as Piliaama… The natural depression upon the stone is said to be the footprint of a man and of a crab." (McAllister 1933:150; Sterling and Summers 1978:144)
Lexicology: pili-ʻaʻama

Pohakaa
Feature: *moʻo ʻāina*
Claim no. 10824 by Punahoa: "Apana 1. Pohakaa moo aina."
Lexicology: Perhaps pōhā-kaʻa.
PEM: rolling stone (pōhā is short for pōhaku).

Pupukea
Feature: *ahupuaʻa*
Returned by Kamamalu at the Māhele, retained by the Gov. indices list 19 kuleana. Claims no. 4261 by Kauila, no 4337 by Nalimaku, no. 7442 by Kaawa were not awarded.
Lexicology: Pūpū-kea.
PEM: white shell.

Puu o Mahuka Heiau
Feature: *heiau*
"It is the largest heiau on Oahu" (McAllister 1933:142)…credited to Menehune, and a place where chiefesses gave birth. It was probably at this heiau that three of Vancouver's crewmen were offered in sacrifice in 1794. The images here are said to have been destroyed by order of Kamehameha II in 1819" (Sterling and Summers 1978:142).
Lexicology: puʻu o mahuka.
PEM: hill of escape.

Puu Waihuena
Feature: boundary point
Lexicology: puʻu wai-huʻena.
PEM: flowing water hill.

Puulu
Feature: *moʻo ʻāina*
Claim no. 4261 by Kauila: "Apana 2. Puulu hookahu mala uala." Also claim no. 4723 by Ku: "Puulu ka moo aina ma Pupukea."
Lexicology: pūʻulu.
PEM: group, crowd, army, party, gang, retinue.

Sunset Beach
Feature: place
Residential area and surfing beach.

Umipuna
Feature: *moʻo ʻāina*
Claim no. 4323 by Kawili: "Apana1. Umipuna ka moo aina, ahupuaa Pupukea."
Lexicology: ʻumi-puna.

Wahiolu
Feature: *moʻo ʻāina*
Claim no. 3990 by Haona: "Apana 2. Pahale ma moo aina ma Pupukea, Wahiolu ka inoa."
Lexicology: Perhaps wahi ʻolu.
PEM: cool place.

Waimea
Feature: village
Near Waimea Bay.
Lexicology: wai-mea.
PEM: reddish water (as from erosion of red soil).

Pūpūkea Beach Park lies directly across the street from the project area. The park includes two main beaches known as Sharks Cove and Three Tables:

> Pūpūkea, or "white shell," is a long and narrow eighty-acre beach park with a rocky shore. Two small pocket beaches lie within the rocks, one at either end of the park. Among the most popular dive sites on the North Shore, these small beaches are known as Sharks Cove and Three Tables.
>
> Sharks Cove was named by the scuba divers who use it as an entry/exit point, One popular story says that the outline of a reef outside the cove resembles a shark when seen from above Three Tables was named for the three sections of flat reef that lie off the beach. The tables emerge above the surface of the ocean at low tide. Both of these beaches are primarily summer dive sites, the powerful winter surf precluding most in-water activities in the park. (Clark 2005:112–114)

Pre-Contact Pūpūkea

The following section presents information on the project area in pre-contact times, before the arrival of Westerners in Hawai‘i in 1778. Included are land use information, a wind name, and mo‘olelo of Pūpūkea.

Land Use

Pūpūkea did not likely support wetland agriculture in times past and its economy probably focused more on fishing and the exploitation of coastal resources, along with dryland agriculture. Handy et al. (1991) provide further details:

> Two other *ahupua‘a* situated between Kaunala and Waimea, namely Paumalu and Pupukea, are not of a topography to support wet-taro culture of ancient type….The narrow seaward plain had no water. According to *kama‘aina* informants, the gulches or streams in these two localities never were planted. (Handy et al. 1991:463)

It is said that Kamapua‘a, ruler of O‘ahu awarded all lands containing the word “wai” (water, wealth) to the kahuna Lono-a-wohi. After Kamapua‘a left O‘ahu to visit his parents’ home in Kahiki, his father Kahikiula took his place as ruler of O‘ahu (Fornander 1969:43) and re-distributed the “well-watered” lands. Although Pūpūkea was not among these wet lands, Kamakau states that during the re-distribution, “the kahuna class were given the lands of Waimea, Pupukea, Waiahole, and Hakipu‘u…Pupukea belonged to the priests of Kuali‘i” (Kamakau 1992:231). The kahuna class held these lands until the days of high chief Kahahana.

Wind Name

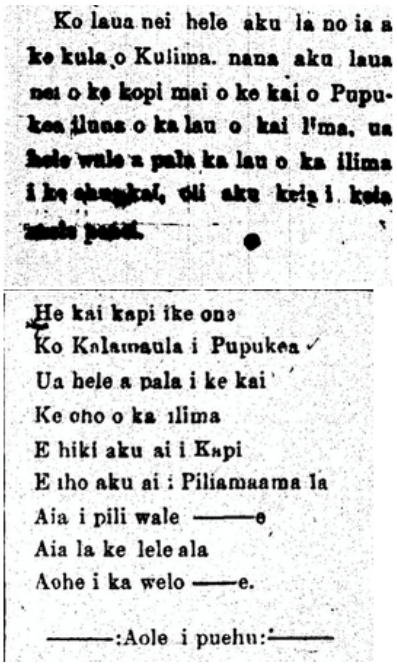
A general wind name for the Pūpūkea area is Mālualua, a northeasterly wind (Nakuina 2005:43). No rain names or other wind names could be found for the ahupua‘a.

Mo‘olelo

Several mo‘olelo pertinent to Pūpūkea were found during research. These stories include an account of the goddess Hi‘iaka and her encounter with a fisherman of Pūpūkea, reports of significant stones, and the history of Pu‘u o Mahuka Heiau.

Hi‘iaka and Pilia‘ama

According to oral tradition, and a publication in a 19th century Hawaiian newspaper, Hi‘iaka, sister of the volcano goddess, Pele, traveled to the Pūpūkea area and while there chanted of the places she visited. A clipping of the original newspaper article and translation are provided below (*Ka Leo o ka Lahui* 1893 in Sterling and Summers 1978:144):



Ko laua nei hele aku la no ia a
ke kula o Kuilima. nana aku laua
nei o ke kopi mai o ke kai o Pupu-
kea iluna o ka lau o kai Ilima, ua
hele wale a pala ka lau o ka ilima
i ke ahuakai, oli aku keia i keia
mele pelii.

He kai kapi ike ona
Ko Kalamaula i Pupukea
Ua hele a pala i ke kai
Ke ono o ka ilima
E hiki aku ai i Kapi
E iho aku ai i Piliamaama la
Aia i pili wale ——e
Aia la ke lele ala
Aohe i ka welo ——e.

——:Aole i puehu:——

(*Ka Leo o ka Lahui* 1893)

> They continued to the plain of Kuilima and watched the sea of Pupukea throwing its sprays upward. It swept over the leaves of the ilima, yellowing them, then Hiiaka chanted:
>
> The sea sprays up over the sand,
> The yellowing sea of Pupukea,
> Yellows the leaves of the ilima,
> With its sprays,
> This is the way to Kapi,
> This is the trail to Pilia‘ama
> (last three lines not translated) (Sterling and Summers 1978:144)

Another article provides a continuation of Hi‘iaka’s visit to Pūpūkea. A clipping of the original newspaper article and translation are provided below (*Ka Leo o ka Lahui* 1893 in Sterling and Summers 1978:144):

I ka pau ana oia mele aia nei, ko laua nei hele aku la no ia a hala ia wahi, a malaila aku a Waiaiae, a malaila aku a hala ia mau wahi aku, a Pupukea laua nei, ike laua nei ia Piliaaama e noho ana e lawaia, nana aku laua nei i ka lawaia mai o Piliaaama, kani kahea aia nei.

O Piliaaama kanaka lawaia o ka pali
Hee puewai o Waimea
Konohiki aku o Ihikoko
Lawaia hi-aku o Kaipahu la
He aha ua ia?

Pane mai o Piliaaama ia laua nei, no ka ninau ana aku a Hiiakaikapoliopele i ka ia ma ke mele.

Hai mai o Piliaaama ia laua i ka inoa o ka ia ana e lawaia ana, he kala ka ia he Moi ka ia, he oio ua ia, he ahole ka ia, he paaua pau ka olelo ana mai o Piliaaama ia laua nei, kani aku no ke oli a Hiiakaikapoliopele penei.

O Piliaaama kanaka lawaia
Kane hiialo oe a Kapuewai
Laweia aku o Kapapaiki la
He aha ua ia e?

Pane mai o Piliaaama, he uhu ua ia, he Opule ka ia, he Manini ka ia, he Hinane ua ia, he papai no hoi ua ia, pau na ia e lawaia ianei la e au.

(*Ka Leo o ka Lahui* 1893)

At Pupukea they spied Piliaama fishing as they watched Hiiaka called:

> O Piliaama fisherman of the cliffs
> Who surfs the mouth of the stream of Ihukoko
> Who catches aku fish
> What are you catching now?

He answered that he was catching some kala, moi, oio and ahole. She called again:

> O Piliaama, fisherman,
> Beloved husband of Kapuewai,
> Who fishes for aku at Kapapaiki,
> What else do you catch?

He answered, "some uhu, opelu, manini, hinane and also some crabs. I do all kinds of fishing here" (Sterling and Summers 1978:144).

Pōhaku of Significance

Two special stones were noted by McAllister (1933) in Pūpūkea. One of these stones was called Piliaama:

> The natural depression upon this stone is said to be the footprint of a man and of a crab. According to my informant, Hookala, a man of low birth but exceedingly handsome and strong once lived in the vicinity. An alii woman who passed was enamored of this man and approached him. She came toward him, but he moved away. She followed. He began running, and she gave chase. When she had almost overtaken him, he vanished, and there remained this stone with his footprint and that of a crab. (McAllister 1933:150)

Another significant stone was known as Kalua o Maua:

> Hoʻokala [an informant] remembers that Kalua o Maua is similar to Laniwahine [*moʻo* of the Waialua area] and is representative of a woman who was a great fisher. One night, when she had gone torching, her husband was unable to see her from their place on the side of the hill. Searching for her, he found her in the form of this stone swimming about in the water. It is said that wherever this stone is found there is fresh water in the ocean. (McAllister 1933:151)

Puʻu o Mahuka Heiau

Located on the cliffs of Pūpūkea, overlooking Waimea Valley, stands Puʻu o Mahuka, which is thought to be a heiau luakini. Pilahi Paki writes about this in his book, *Legends of Hawaii: Oahu's Yesterday*, and credits the construction of the heiau to the aliʻi Kahahana, and his high priest, Kaʻōpulupulu. It is said that Kahanana asked Kaʻōpulupulu if it was wise to wage war with Kauaʻi. The priest replied that a heiau would need to be constructed so that he could receive a sign. Kahahana had Kupopolo Heiau built near the shores of Waimea, but Kaʻopulupulu did not receive the sign. He instructed Kahahana to build a heiau at a higher location and Puʻu o Mahuka was erected. There, Kaʻopulupulu received the sign to not invade Kauaʻi. Paki writes, "Puʻu-O-Mahuka, remains among the lofty cliff as an emblem of the power of 'thought' which can produce peace or war" (Paki 1972:58–59).

Pūpūkea in the Historic Era

Following the arrival of Westerners in 1778, Pūpūkea saw major transformations. The uplands were cultivated in pineapple, and lowlands were increasingly used for residential housing. These changes are evident in historic accounts, Māhele data, and maps and photographs of the landscape.

Early Historic to Post-Contact Period

The first account mentioning the Pūpūkea area was written by Captain Charles Clerke as he sailed around the north shore of Oʻahu. On February 28, 1779, Captain Clerke anchored in Waimea Bay and recorded this description in his journals:

> I stood into a Bay just to the Wt[est]ward of this point the Eastern Shore of which was by far the most beautifull Country we have yet seen among these Isles, here was a fine expanse of Low Land bounteously cloath'd with Verdure, on which were situate many large Villages and extensive plantations; at the Water side it terminated in a fine sloping, sand Beach. . . . This Bay, its Geographical situation consider'd is by no means a bad Roadsted, being sheltered from the NEbN SEterly to SWbW with a good depth of Water and a fine firm sandy Bottom; it lays on the NW side of this Island of Wouahoo . . . surrounded by a fine pleasant fertile Country. (Beaglehole 1967:569)

James King, also on the same voyage as Captain Clerke, stated:

> The appearance of so fine a river running thru: a deep Valley made us drop Anchor…I walk'd a little farther & observed it to be the produce of 2 branches, or small streams or rivers, that came down 2 Valleys…the bank of this river as well as the face of this NW part of Woʻahoo was as beautiful as any Island we have seen & appear'd very well cultivated & popular; they told us here that most of the Men were gone to Morotai to fight Tahyteree… (Beaglehole 1967:584–585)

In 1792, the *Daedalus*, captained by George Vancouver, anchored off the coast of Waimea and a party was sent ashore for fresh water. Three members of the party ventured inland in Waimea Valley and were beaten to death by tattooed men. The bodies were possibly taken to Puʻu o Mahuka Heiau:

> They [the Hawaiians] took the bodies to a heiau (ʻtemple'), cooked them and divided them among Oʻahu chiefs. They themselves said the heiau was at Mokuleia, about twelve miles along the coast to the west. European interpreters of Hawaiian history, wishing to be more commonsensical, suggest that the heiau might have been Puʻu-o-Mahuka at Waimea itself. (Dening 1995:25)

Mid-19th Century and the Māhele

The change in the traditional land tenure system in Hawaiʻi began in 1845 with the introduction of The Organic Act. The Organic Act of 1845 and 1846 essentially initiated what is known as the Māhele system, or the division of Hawaiian lands. This new system introduced the concept of private property in the Hawaiian society, and required Hawaiians, commoners and royalty alike, to submit claim to their lands.

In 1848, the crown (Hawaiian government) and the aliʻi (royalty) received their land titles, which are known as the Crown Lands. In 1850 a second Māhele was conducted, this time allowing commoners, and others who could prove residency, to put claim to their land. Those with successful claims were awarded with land known as kuleana parcels. Though many Hawaiians did not submit or follow through on claims for their lands, the distribution and descriptions of Land Commission

Awards (LCAs) can provide significant insight to the patterns of land use, residence, environment, and activities in the project area.

During the Māhele, Pūpūkea Ahupuaʻa was awarded to Kauikeaouli (Kamehameha III). However, because his documented awards on Oʻahu did not include any awards from the Koʻolauloa District, it has been suggested that Kauikeaouli gave Pūpūkea to the government (Chinen 1961:26, PBR Hawaii & Associates 2014). Boundary Commission Document No. 14985 validated this statement, as Pūpūkea Ahupuaʻa was indicated as "Crown Lands." A total of 31 kuleana claims were made for Pūpūkea Ahupuaʻa. Of these, nine were not awarded. Unlike typical small land boundaries, most of the 22 awarded claims in Pūpūkea were comprised of narrow land strips. There were no LCA awards given for the project parcels or immediate vicinity.

Shortly following the Māhele, sugarcane cultivation became a profitable endeavor in Hawaiʻi. In 1889 the OR&L railroad was built from Honolulu to Kahuku to accommodate the sugar plantations on the north shore of Oʻahu, and the Waimea Railroad station was built at the intersection of the Government Road and the Pūpūkea Road (Kuykendall 1967:68).

1900–the Mid-1900s

In the early 1900s, though the railroad was the main focus of economic activity on Oʻahu, farming in the Pūpūkea highlands became profitable as crops were harvested and transported, using the railroad, to central markets across the island (Clark 1977). In particular, avocadoes were very lucrative, with 400 acres of avocado trees planted in the Pūpūkea uplands in the early 1900s (Clark 1977:123). After the owner, Fredrick Haley, Sr., sold the 400 acres of avocado lands to Libby, McNeil, and Libby, pineapple became a popular commodity of the area (Clark 1977:123). Pineapple plantations in Pūpūkea were founded as early 1919.

At this time, residential construction also began for the Pūpūkea-Paumalū Homesteads and the Pūpūkea-Paumalū Beach Tract. By 1943, even more development had occurred in the region. During the decline of plantation agriculture in the 1950s and 1960s more lots in Pūpūkea were sold for residential purposes. By the 1970s, both the highlands and coastal areas of Pūpūkea were thriving residential communities.

Two historic maps depict the project lands in the early 1900s. The first is a map of the north coast of Oʻahu from 1902 (Figure 4). The shoreline, coastal road, cliffs, and gulches are illustrated. The next map shows the Pupukea-Paumalu Homesteads in 1904 (Figure 5). The OR&L railroad and Government Road can be seen just makai of the project area. A structure labeled as "Waimea R.R. Station is also close to the project area, at the intersection of what is now Kamehameha Highway and Pūpūkea Road. A school lot is depicted south of the bend in Pūpūkea Road, southeast of the project site. Farther southeast is Puʻu o Mahuka, which is labeled as "Heiau."

Modern Land Use

Today, Pūpūkea remains a mostly residential area, with some agricultural production in the uplands (Figure 6). The Pūpūkea-Paumalū Beach Tract (Sunset Beach area) was also sold for residential property, where many vacation homes were constructed. Pūpūkea is known as a popular surf area, and continues to attract homeowners, surfers, and tourists today (Clark 1977:125).

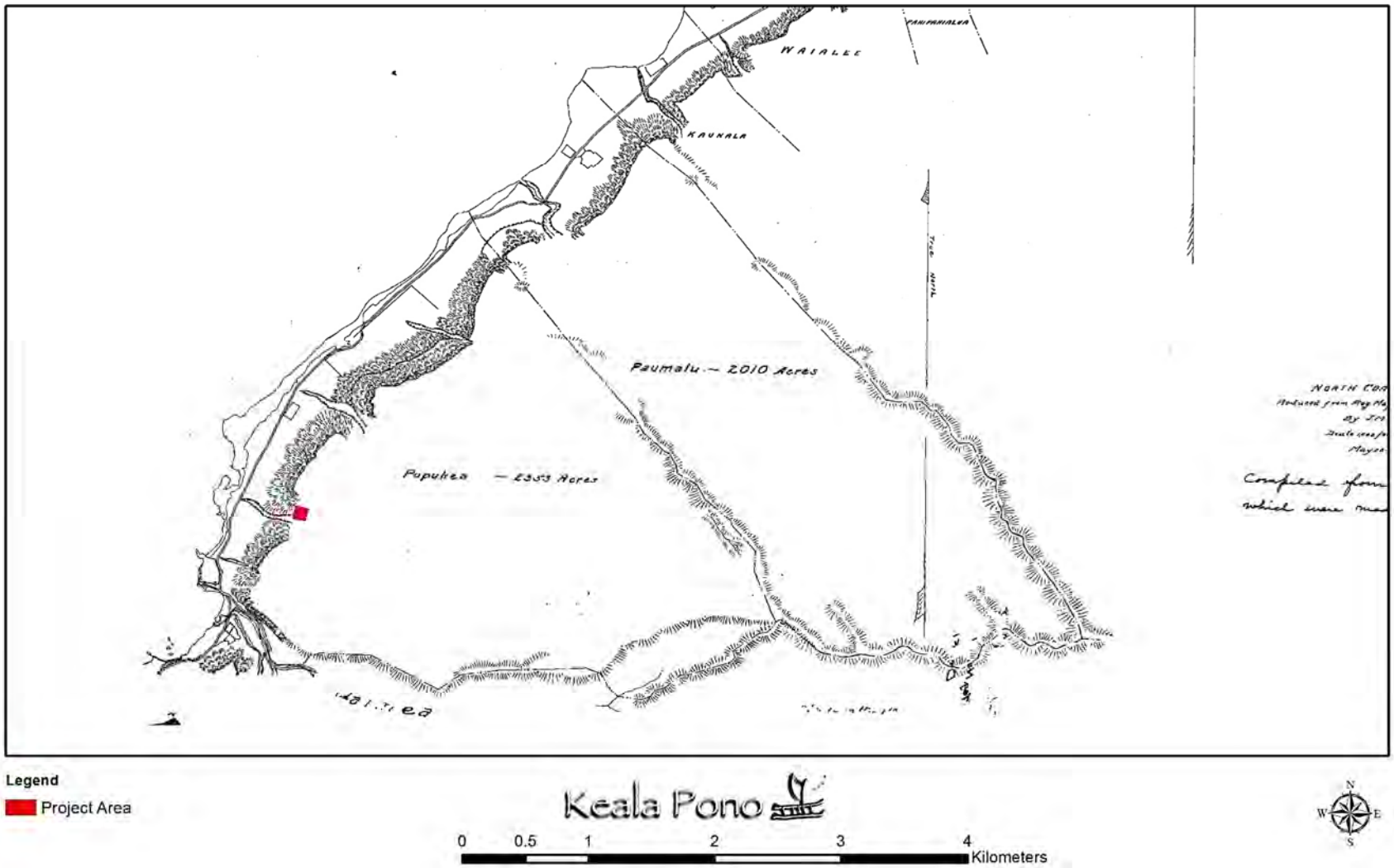


Figure 4. Portion of a map showing the north coast of O‘ahu (Donn 1902).

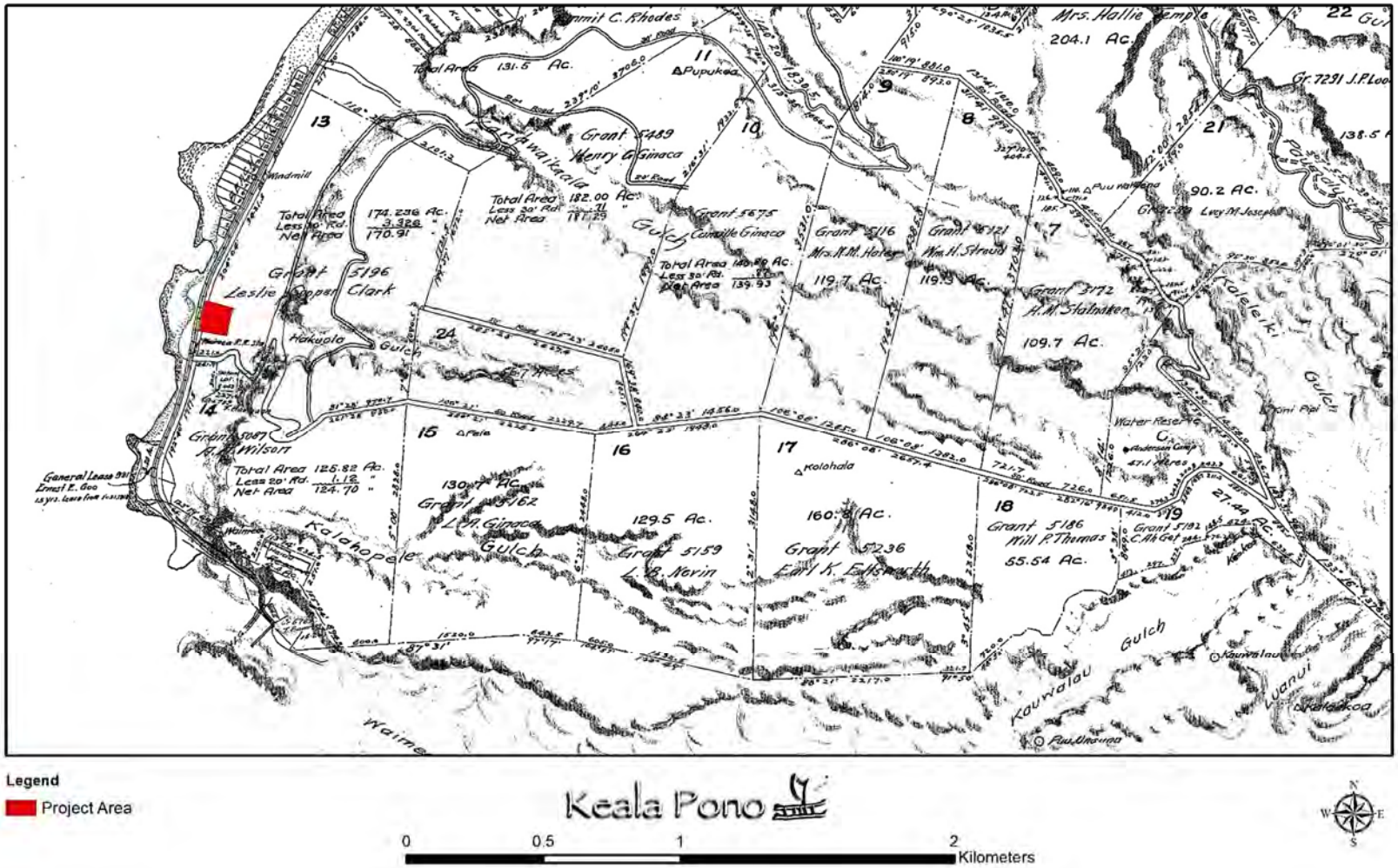


Figure 5. Portion of a Pupukea-Paumalu Homesteads map (Wall 1904).

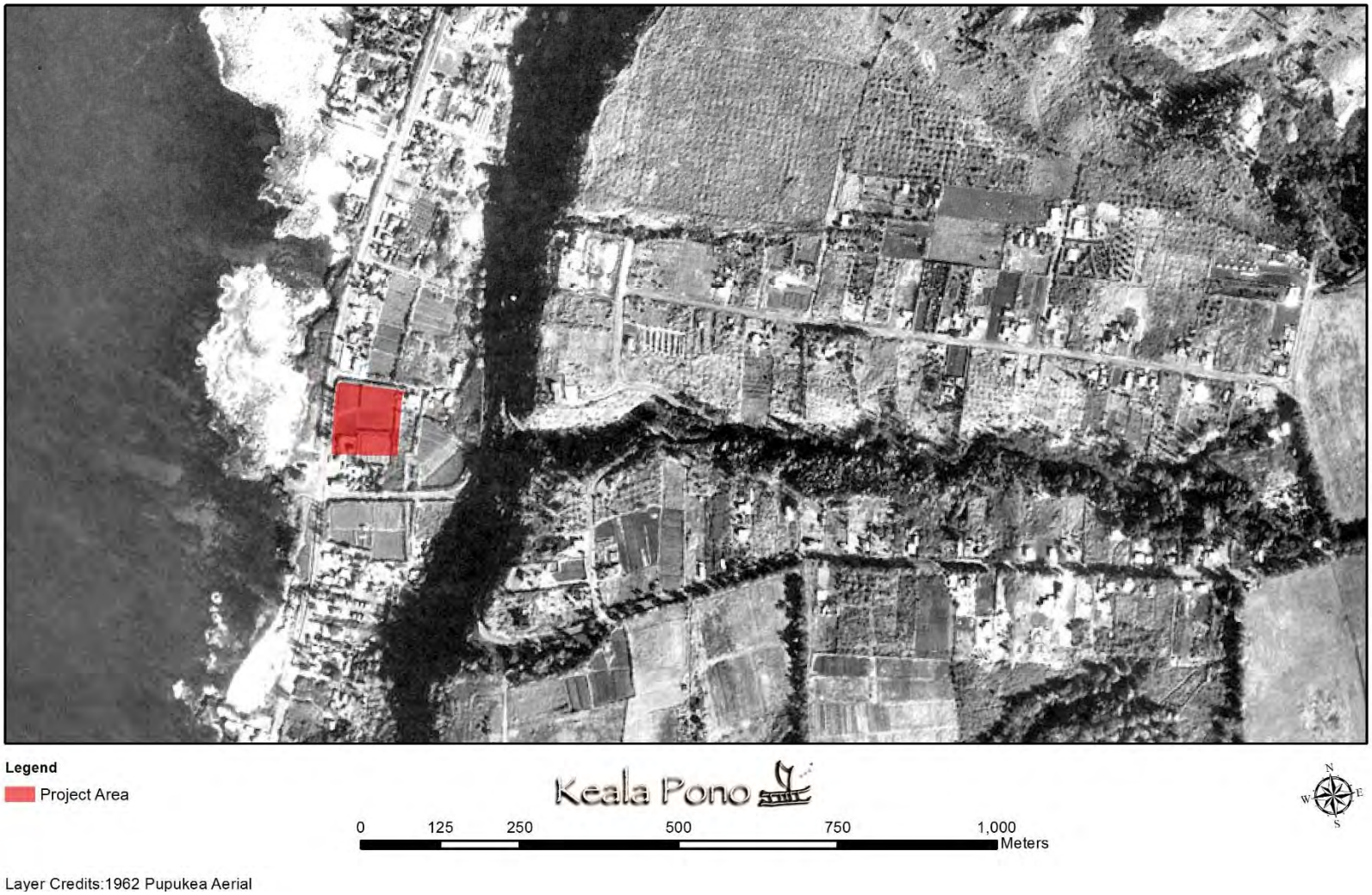


Figure 6. USGS 1962 aerial photo of Pūpūkea.

Previous Archaeology

Pūpūkea has been the subject of many archaeological studies. The following discussion summarizes the findings of cultural resources identified in the vicinity of the subject properties, based on reports found at the SHPD library in Kapolei (Figure 7 and Table 1). State Inventory of Historic Places (SIHP) numbers are prefixed by 50-80-01 (Figure 8 and see Table 1).

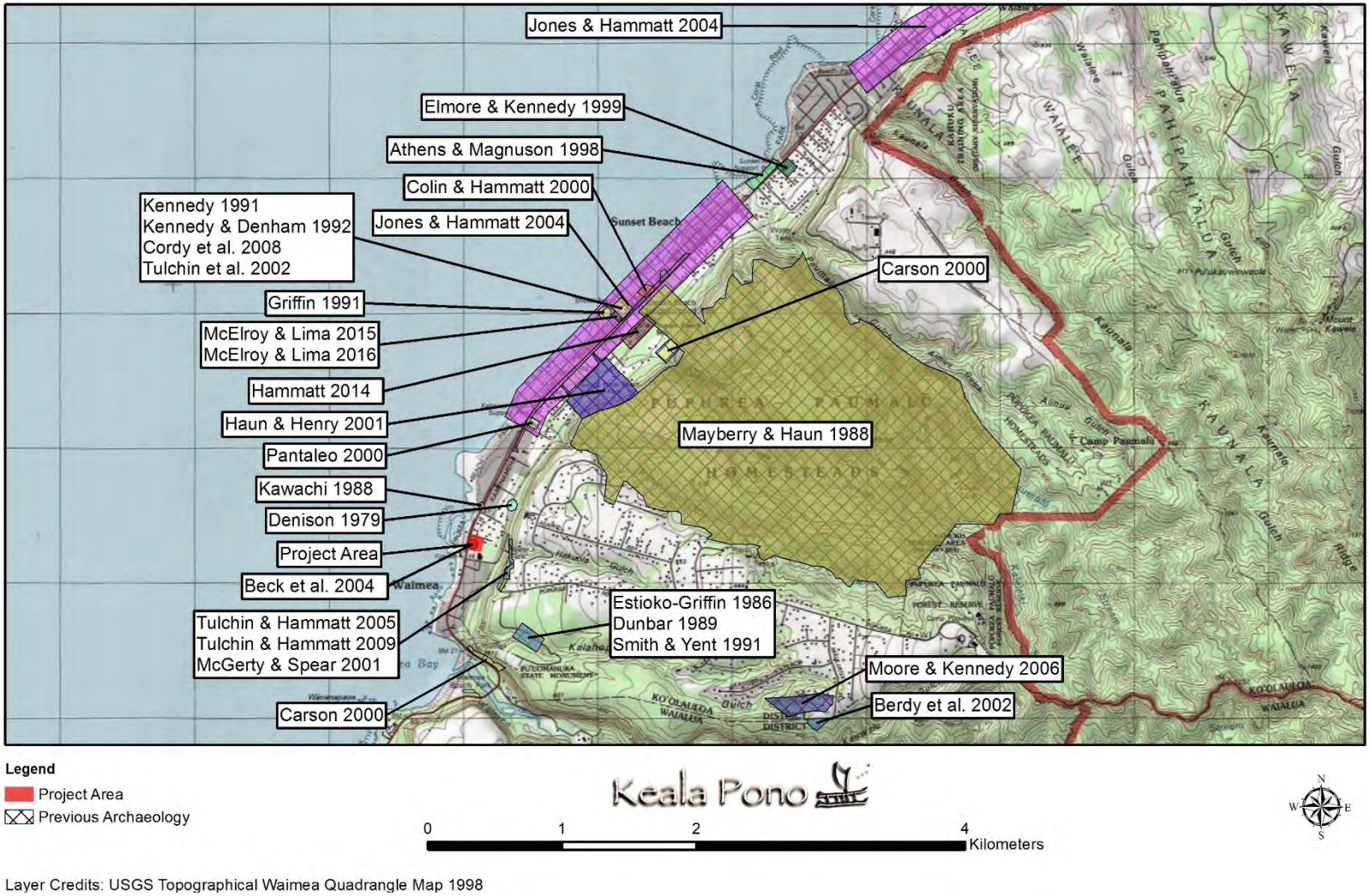
The earliest archaeological work for the area was during McAllister's (1933) island-wide survey. McAllister recorded five sites in Pūpūkea Ahupuaʻa: Site 249, Puʻu o Mahuka Heiau; 252, the Piliaama Stone; 253, Kamaeʻe Koʻa; 254, the Kalua o Maua Stones; and 255 Pele's Follower's Stones. The latter site was described as a group of large rocks that are people whom Pele turned to stone so they would become immortal (McAllister 1933).

An early archaeological reconnaissance was conducted mauka of Pūpūkea Beach Park, and one site, SIHP 3364, was documented (Denison 1979). The site is a rectangular enclosure formed by rock walls. It was thought to be an animal pen dating to the historic era. Also mauka of Pūpūkea Beach Park, human remains were inadvertently discovered during construction on a residential property (Kawachi 1988). The remains were given the SIHP number 3955. Human remains were again uncovered during residential construction in the area (Kawachi and Smith 1989). The remains were designated as SIHP 4150. Another set of remains was documented for the area mauka of Pūpūkea Beach Park, but the original report that recorded the find could not be located. The remains, designated as SIHP 4285, were reported as a known site in a later archaeological report (Tulchin and Hammatt 2005). These four sites (an enclosure and several sets of human remains) are the closest archaeological sites to the project area (see Figure 7).

Archaeological reconnaissance with subsurface testing was conducted for the 1,130-acre Pupukea-Paumalu Development Project (Mayberry and Haun 1988). A total of 60 sites were identified (SIHP 3820–3873, 3971–3976, and 5830–5832), most of which were economic or agricultural, and some military or mortuary/ceremonial. Archaeological inventory survey was later conducted along one of the cliff areas covered by the reconnaissance (Carson 2000). Habitation, agricultural, and human burial sites were identified (SIHP 5830–5834).

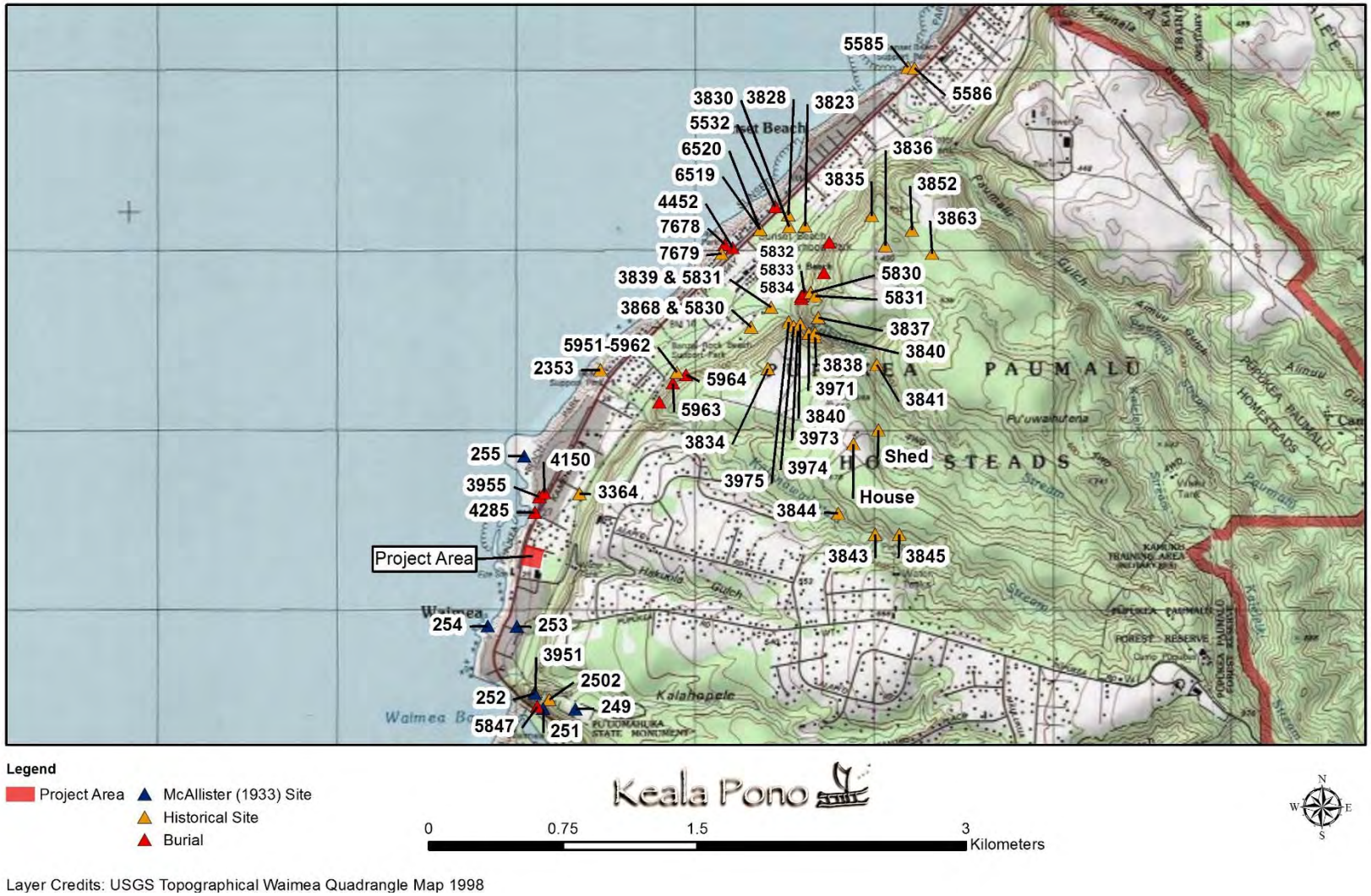
Various work was completed at Puʻu o Mahuka Heiau. The first was a historical overview of the area (Estioko-Griffin 1986). Subsequently, the site was nominated for the National Register of Historic Places (NRHP) (Dunbar 1989). A 1991 report documented work completed at three sites in the area: Puʻu o Mahuka Heiau (Site 249), and SIHP 2502 and 3509, which are walled enclosures (Smith and Yent 1991). The enclosures are near the heiau but outside the State Park property. All three sites were mapped with a transit, and subsurface testing was conducted at the heiau. It was reported that "subsurface testing confirmed the presence of intact cultural deposits at the site and revealed two paving episodes in the eastern enclosure [of the heiau]" (Smith and Yent 1991:32). Two radiocarbon dates indicate construction or refurbishing of the heiau in the late-1700s or early-1800s (Smith and Yent 1991:34).

Several studies took place at ʻEhukai Beach Park. An early archaeological inventory survey had no findings (Kennedy 1991), but later studies identified a human burial (Griffin 1991), scattered human remains, and a firepit, all grouped together under SIHP 4452 (Kennedy and Denham 1992). The firepit was radiocarbon dated to cal. AD 1153–1421 (Kennedy and Denham 1992:24). Artifacts collected include a possible kukui nut candle, files and abraders, a broken adze, basalt flakes, and an iron ball. Later monitoring revealed four firepits, which were included with SIHP 4452 (Tulchin et al. 2002). Two radiocarbon dates were obtained: cal. AD 1410–1530 and 1650–1960 (Tulchin et al. 2002:29). Another monitoring project at ʻEhukai Beach Park yielded no findings (Cordy et al. 2008).



Layer Credits: USGS Topographical Waimea Quadrangle Map 1998

Figure 7. Location of previous archaeological studies in the vicinity of the project area.



Layer Credits: USGS Topographical Waimea Quadrangle Map 1998

Figure 8. Location of known archaeological sites in the vicinity of the project area.

Table 1. Previous Archaeology in Pūpūkea

Author	Year	Location	Work Completed	Findings
McAllister	1933	O‘ahu	Survey	Recorded 5 sites in Pūpūkea: 249, 252, 253, 254, and 255; none are near the project area.
Denison	1979	Mauka of Pūpūkea Beach Park	Reconnaissance	Recorded SIHP 3364, a rectangular enclosure thought to be a historic animal pen.
Estioko-Griffin	1986	Pu‘u o Mahuka Heiau	Historical Overview	Provided historical context for the heiau.
Kawachi	1988	Mauka of Pūpūkea Beach Park	Burial Report	Recorded a human burial, SIHP 3955.
Mayberry & Haun	1988	Pupukea-Paumalu Development Project	Reconnaissance	Identified 60 sites, mostly economic or agricultural, with some military or mortuary/ceremonial.
Dunbar	1989	Pu‘u o Mahuka Heiau	NRHP Nomination	Completed NRHP nomination forms for Pu‘u o Mahuka Heiau.
Kawachi & Smith	1989	Mauka of Pūpūkea Beach Park	Burial Report	Documented SIHP 4150, a human burial.
Griffin	1991	‘Ehukai Beach Park	Burial Report	Recorded SIHP 4452, a human burial.
Kennedy	1991	‘Ehukai Beach Park	Inventory Survey	Negative findings.
Smith & Yent	1991	Pu‘u o Mahuka Heiau and Vicinity	Mapping and Subsurface Testing	Mapped Pu‘u o Mahuka Heiau (Site 249) and two walled enclosures (SIHP 2502 and 3951). Excavations at the heiau returned radiocarbon dates in the late-1700s to early-1800s.
Kennedy & Denham	1992	‘Ehukai Beach Park	Monitoring	Documented SIHP 4452, a previously recorded human burial, as well as scattered human remains, a firepit, and several artifacts.
Athens & Magnusen	1998	Sunset Beach	Inventory Survey	Identified subsurface midden deposits, SIHP 5585 and 5586.
Elmore & Kennedy	1999	Sunset Beach	Monitoring	Negative findings.
Carson	2000	Mauka of Sunset Beach	Survey	Identified 5 sites, SIHP 5830–5834, including habitation, agricultural, and human burial areas.
Colin & Hammatt	2000	Ke Nui Rd.	Burial Disinterment	Reported on SIHP 5532, a human burial.
Pantaleo	2000	Sunset Beach Recreation Center	Literature Review and Field Inspection	Negative findings.
Haun & Henry	2001	Sunset Beach Agricultural Subdivision	Inventory Survey	Recorded 14 sites, SIHP 5951–5964, consisting of burial, agricultural, and water storage locales. The burials were multiple individuals found in caves, one with the remains of a burial canoe.
Berdy et al.	2002	Pūpūkea Road	Inventory Survey	Negative findings.

Table 1. (Continued)

Author	Year	Location	Work Completed	Findings
Tulchin et al.	2002	‘Ehukai Beach Park	Monitoring	Identified four additional firepits of SIHP 4452.
Beck et al.	2004	Portion of the Current Project Area	Site Assessment Survey	Negative findings.
Jones & Hammatt	2004	Kamehameha Hwy.	Monitoring	Identified SIHP 6519, two human burials; as well as 6520, a firepit.
Tulchin & Hammatt	2005	Pūpūkea Rd.	Field Inspection & Literature Review	Recorded 5 sites: two historic roadbeds, two burial caves, and a historic storage cave. Four possible shelters were noted as potential sites. SIHP numbers were not assigned.
Moore & Kennedy	2006	Mālukua Rd.	Inventory Survey	Identified SIHP 6760, a historic water tank.
Cordy et al.	2008	‘Ehukai Beach Park	Monitoring	Negative findings.
Tulchin & Hammatt	2009	Pūpūkea Rd.	Inventory Survey	Documented 5 sites: SIHP 7034–7038, including historic features, a trail segment, burial caves, and a temporary habitation shelter.
McGerty & Spear	2011	Pūpūkea Rd.	Monitoring	Negative findings.
Hammatt	2014	Sunset Beach Elementary School	Monitoring	Negative findings.
McElroy & Lima	2015	Near ‘Ehukai Beach Park	Burial Site Component of an Archaeological Data Recovery and Preservation Plan	Set forth guidelines for treatment of SIHP 7678, a human burial that had been disturbed during initial construction on the property.
McElroy & Lima	2016	Near ‘Ehukai Beach Park	Monitoring	Identified SIHP 7679, a subsurface cultural layer with firepits.
No Report Found		Sunset Beach		SIHP 2353 is a series of petroglyphs in sandstone reef at Sunset Beach; a report on this site was not found in the SHPD library.
No Report Found		Mauka of Pūpūkea Beach Park		SIHP 4285 is an inadvertently discovered human burial; a report on this site was not found in the SHPD library.

Very close to ‘Ehukai Beach Park, a burial site component of an archaeological data recovery and preservation plan was prepared for a privately owned beachfront parcel (McElroy and Lima 2015). The plan set forth guidelines for treatment of SIHP 7678, a human burial that had been partially disturbed during initial construction on the subject property. Archaeological monitoring of construction identified an additional site, SIHP 7679, a subsurface cultural layer with five firepits (McElroy and Lima 2016). A sample of kukui nutshell returned a conventional radiocarbon age of 200±30 BP, which calibrates to AD 1650–1685, AD 1730–1810, and AD 1925–Post 1950 (McElroy and Lima 2016:44–45).

Archaeological inventory survey was conducted at Sunset Beach (Athens and Magnusen 1998). Two subsurface midden deposits, SIHP 5585 and 5586, were identified. A radiocarbon date of cal. AD 1502–1652 was obtained for Site 5585 (Athens and Magnusen 1998:ii). Archaeological monitoring was later carried out for park improvements across the street, but there were no findings (Elmore and Kennedy 1999).

A human burial was found on Ke Nui Road (Colin and Hammatt 2000). The burial was thought to be traditional Hawaiian and was designated as SIHP 5532. Not far from this, archaeological monitoring was performed for the installation of a water main along Kamehameha Highway (Jones and Hammatt 2004). SIHP 6519 and 6520, consisting of human burials and a firepit, were found near the Sunset Beach Neighborhood Park. SIHP 6519 included two individuals identified as a young adult female and an adolescent of undetermined sex. SIHP 6520 is a firepit that was radiocarbon dated to cal. AD 1620–1960 (Jones and Hammatt 2004:34).

Archaeological inventory survey was conducted for the Sunset Beach Agricultural Subdivision, located on the mauka side of Kamehameha Highway (Haun and Henry 2001). A total of 14 sites were recorded (SIHP 5951–5964), including caves, walls, cisterns, and alignments. Feature functions were listed as burial, agricultural, and water storage. The burials were found within two caves (SIHP 5963 and 5964), which each contained the remains of multiple individuals. Fragments of a burial canoe were also found within one of the caves. The agricultural remains are thought to be ʻuala fields that date from the mid-1600s to the mid-1800s (Haun and Henry 2001:33).

Several studies were completed for rockfall mitigation on Pūpūkea Road. An initial field inspection and literature review recorded five sites consisting of two historic roadbeds, two burial caves, and a historic storage cave (Tulchin and Hammatt 2005). Four possible shelters were also noted as potential sites; these were four overhangs and a lava tube. SIHP numbers were not assigned at the time. Archaeological inventory survey assigned SIHP numbers to the five sites recorded earlier (SIHP 7034–7038) (Tulchin and Hammatt 2009). SIHP 7034 and 7035 are historic roads, while 7036 is a traditional or early historic trail. SIHP 7037 consists of historic storage caves, while 7038 includes six burial caves and a temporary habitation shelter. Charcoal recovered during excavation of the shelter returned a radiocarbon date of cal. AD 1440–1640 (Tulchin and Hammatt 2009:71). Archaeological monitoring was later conducted for Phase I of the project, and no new sites were documented (McGerty and Spear 2011).

An archaeological inventory survey in upper Pūpūkea identified one site (Moore and Kennedy 2006). The site is a historic water tank that was designated as SIHP 6760.

Site 2353 consists of petroglyphs carved into the limestone reef at Sunset Beach. The site is reported as previously identified (e.g., Tulchin et al. 2002), but the original report documenting the petroglyphs was not found in the SHPD library.

Several projects produced negative findings. These consist of a literature review and field inspection of the proposed Sunset Beach Recreation Center (Pantaleo 2000), an archaeological inventory survey of private property along Pūpūkea Road (Berdy et al. 2002), and archaeological monitoring at Sunset Beach Elementary School (Hammatt 2014).

Finally, what was called a "site assessment survey" was completed for a portion of the current project area (Beck et al. 2004:13). At the time of the survey, the project area was listed as TMK: (1) 5-9-011:017, and 2.143 acres were covered, consisting of all of the current parcel 070 and the mauka portions of parcels 68 and 69. There were no findings, and evidence of recent dumping and farming were reported. No subsurface testing was conducted.

Summary of Background Information

Pūpūkea is an area rich in pre- and post-contact history. With a traditional economy based largely on fishing and marine exploitation, the coastline was an important resource for the people that lived there. Because of the dearth of fresh water, wetland agriculture was not widely practiced, and dryland farming focusing on ʻuala cultivation factored largely into traditional lifeways.

The historic period brought about widespread changes to the Pūpūkea landscape. Crops such as avocado and pineapple were farmed, and large tracts of land supported housing developments. The OR&L railroad ran just makai of the project area, transporting sugarcane from the north shore plantations.

Previous archaeological work near the project area has had significant findings. The four archaeological sites closest to the project area consist of several human burials and an enclosure. A variety of site types have been documented in other parts of Pūpūkea, with human burials found near the coast and in caves. Traditional agricultural, ceremonial, and habitation areas, as well as a variety of historic sites have also been documented for Pūpūkea.

Anticipated Findings and Research Questions

Previous archaeological work within the project area consisted entirely of surface survey, with no subsurface testing conducted (Beck et al. 2004). No surface archaeological remains were identified, and studies conducted nearby can help inform on the kinds of subsurface archaeological resources that may be found. The closest subsurface sites to the project area are human burials, and these might be expected in the project area as well.

Research questions will broadly address the identification of the above archaeological resources and may become more narrowly focused based on the kinds of resources that are found. Initial research questions are as follows:

1. Are there cultural features, deposits, or evidence of human burials within the survey area? Where are they located and what time period do they belong to?
2. Are there any vestiges of historic-era use of the project area, particularly surface remains or subsurface deposits associated with sugarcane, pineapple cultivation, or other forms of historic farming?

Once these basic questions are answered, additional research questions may be developed in consultation with SHPD, tailored to the specific kinds of archaeological resources that occur in the project area.

METHODS

Pedestrian survey was conducted on October 18, 2016 by Windy McElroy, PhD, Juanita Aguerrebere, BA, and Jeffrey Lapinad. Subsurface testing was conducted on February 16, 2017 by McElroy and Lapinad. McElroy served as Principal Investigator, overseeing all aspects of the project.

For the pedestrian survey, the ground surface was visually inspected for surface archaeological remains, with transects walked for the entire area. Archaeologists were spaced approximately 10 m apart. Of the 1.1 ha (2.72 ac.) survey area, 100% was covered on foot. Vegetation was generally light, consisting of isolated pockets of forested areas with an understory of grass. Most of the project area is open, and vegetation had little effect on visibility.

Test trenches (TR) were excavated in 11 locations across the project area. The excavation strategy was approved by SHPD beforehand via email. A mini excavator was used for excavation of the trenches (Figure 9). Vertical provenience was measured from the surface, and trenches were excavated to sterile deposits. Profiles were drawn and photographed, and sediments were described using Munsell soil color charts and a sediment texture flowchart (Thien 1979). Trench locations were recorded with a 3 m-accurate Garmin GPSmap 62st, and all trenches were backfilled after excavation.

The scale in all field photographs is marked in 10 cm increments. The north arrow on all maps points to magnetic north. Throughout this report rock sizes follow the conventions outlined in *Field Book for Describing and Sampling Soils*: Gravel <7 cm; Cobble 7–25 cm; Stone 25–60 cm; Boulder >60 cm (Schoeneberger et al. 2002:2–35). No materials were collected and no laboratory analyses were conducted.

Figure 9. Excavation of TR 1 with mini excavator. Orientation is to the southwest.

RESULTS

Pedestrian survey and subsurface testing were conducted in the 1.1 ha (2.72 ac.) project area. No archaeological resources were found. Excavation of 11 test trenches did not yield any evidence of subsurface archaeological deposits or features.

Community Consultation

Community consultation will take the form of a cultural impact assessment (CIA), which is currently being conducted. The CIA is being prepared simultaneously with this AA report, and three interviews with community members are planned.

Pedestrian Survey

The surface survey included 100% of the 1.1 ha (2.72 ac.) project area. No surface archaeological remains were observed within any part of the project area; any archaeological features that may have once been present are no longer there because of the extensive modern use of these lands.

The entire parcel was found to be disturbed, with many areas paved in gravel (Figure 10) or bulldozed (Figure 11). There were small vegetated areas on the parcel that also showed signs of bulldozing (Figure 12). These findings are consistent with a previous surface survey that was completed for the properties (Beck et al. 2004).

Subsurface Testing

A subsurface testing plan was approved by SHPD before trenching began. The 11 trenches were excavated within the project area to determine the presence or absence of subsurface archaeological deposits or material (Figures 13 and 14). Trenches were excavated to a sterile deposit, characterized by saprolitic rock in its lower depths. No archaeological resources were found, and stratigraphy generally consisted of the sterile colluvial layer, sometimes overlain with various fill deposits (Table 2). Trench locations and dimensions are listed in Table 3.

Stratigraphy was similar throughout, with slight variations. Five variations in stratigraphy were noted (see Table 2), and each is illustrated with a profile drawing and photo:

1. A driveway or parking lot gravel surface with colluvium below (Figures 15 and 16). This was found in TR 2, 3, 6, 7, and 10.
2. The gravel parking lot surface with an agricultural soil below it, and the basal colluvial layer (Figures 17 and 18). This was observed at TR 4 and 5, where farming is a previous use of the area.
3. A single layer of colluvium (Figures 19 and 20). This was found in TR 8 and 9, which were excavated outside the gravel-paved areas.
4. The gravel parking lot surface, three layers of fill, and the basal colluvial deposit (Figures 21 and 22). This was evident in TR 1.
5. The gravel parking lot surface underlain by a layer of fill, an asphalt road or parking lot, and the basal colluvial deposit (Figures 23 and 24). This was found in TR 11.

Figure 10. Open gravel-paved area. Orientation is to the north.

Figure 11. Bulldozed area. Orientation is to the south.

Figure 12. Disturbed, vegetated area. Orientation is to the east.

Summary of Findings

Pedestrian survey of 1.1 ha (2.72 ac.) in Pūpūkea yielded no findings. The entire project area has been disturbed by previous activity, such as bulldozing and paving. Subsurface testing, consisting of 11 trenches, did not identify any subsurface cultural deposits or features. Stratigraphy consisted of a colluvial deposit, sometimes with fill layers or modern pavements above it.

Figure 13. Location of trenches on aerial imagery.

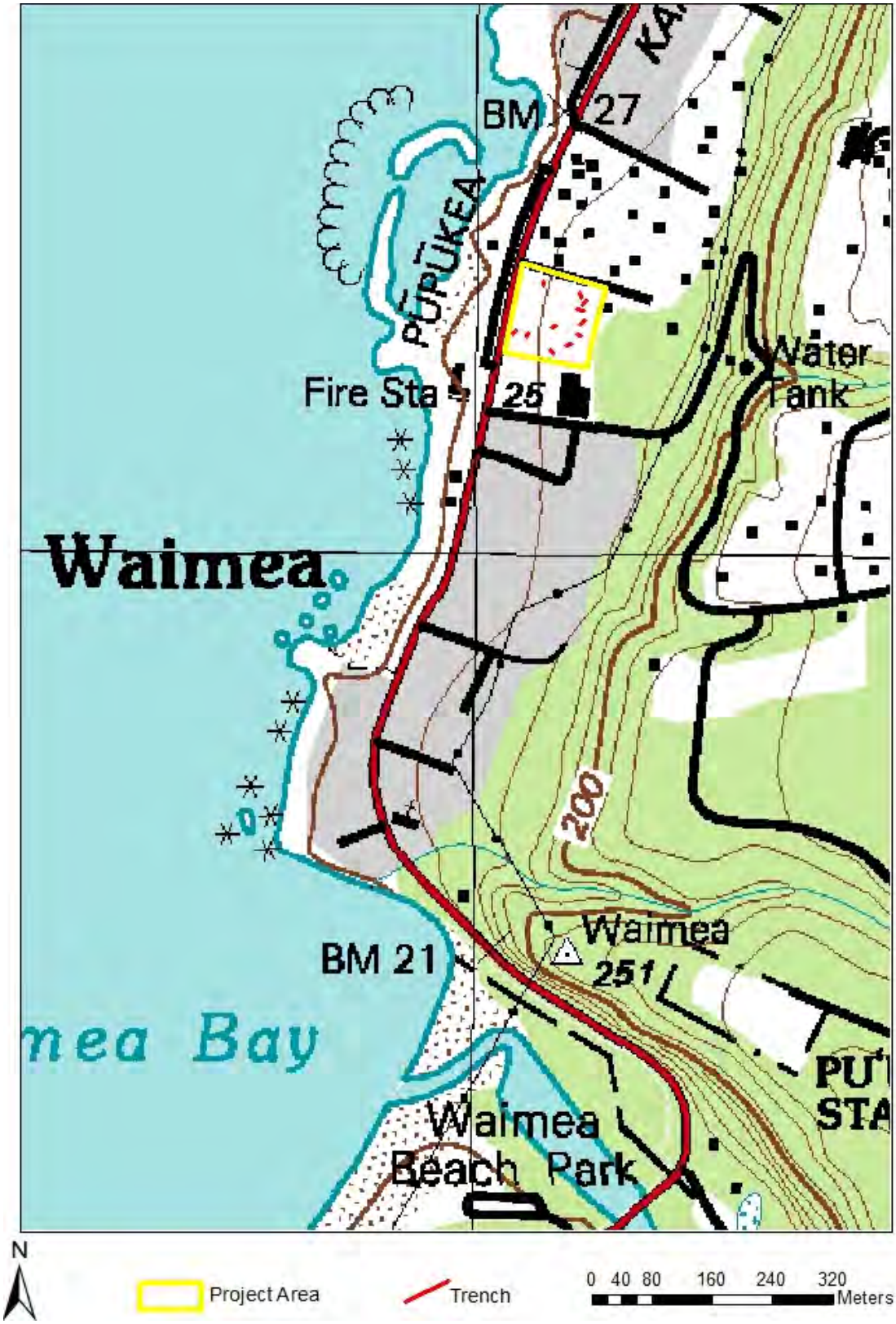


Figure 14. Wider view of trench locations on a 1992 USGS map.

Table 2. Sediment Descriptions

Location	Layer	Depth (cmbs)	Color	Description	Interpretation
TR 1	I	0–7	N/A	Fine to medium basalt gravel; smooth, very abrupt boundary.	Driveway Surface
	II	7–9	7.5YR 3/3	Sandy loam; 20% basalt gravel; smooth, very abrupt boundary.	Fill
	III	9–12	10YR 3/4	Sandy loam; 20% basalt gravel; smooth, very abrupt boundary.	Fill
	IV	12–24	7.5YR 4/4	Sandy loam; 15% basalt gravel; smooth, very abrupt boundary.	Fil
	V	24–230+	5YR 3/4	Sandy loam; 2% basalt cobbles; saprolitic rock; utility lines at 70–84 cmbs; base of excavation.	Natural Colluvium
TR 2	I	0–5	N/A	Fine to medium basalt gravel; smooth, very abrupt boundary.	Driveway Surface
	II	5–160+	5YR 3/4	Sandy loam; 2% basalt cobbles; saprolitic rock; base of excavation.	Natural Colluvium
TR 3	I	0–10	N/A	Coarse basalt gravel; smooth, very abrupt boundary.	Parking Lot Surface
	II	10–188+	5YR 3/2	Sandy loam; 10% basalt cobbles; saprolitic rock; base of excavation.	Natural Colluvium
TR 4	I	0–10	N/A	Coarse basalt gravel; smooth, very abrupt boundary.	Parking Lot Surface
	II	15–52	7.5YR 2.5/2	Silty clay loam; smooth, very abrupt boundary.	Agricultural Soil
	III	52–154+	5YR 3/2	Sandy loam; 10% basalt cobbles; saprolitic rock; base of excavation.	Natural Colluvium
TR 5	I	0–10	N/A	Coarse basalt gravel; smooth, very abrupt boundary.	Parking Lot Surface
	II	10–25	7.5YR 3/2	Silty clay loam; smooth, very abrupt boundary.	Agricultural Soil
	III	25–130+	5YR 3/2	Sandy loam; 10% basalt cobbles; saprolitic rock; base of excavation.	Natural Colluvium
TR 6	I	0–10	N/A	Coarse basalt gravel; smooth, very abrupt boundary.	Parking Lot Surface
	II	10–150+	5YR 3/2	Sandy loam; 10% basalt cobbles; saprolitic rock; base of excavation.	Natural Colluvium
TR 7	I	0–10	N/A	Coarse basalt gravel; smooth, very abrupt boundary.	Parking Lot Surface
	II	10–130+	5YR 3/2	Sandy loam; 10% basalt cobbles; saprolitic rock; base of excavation.	Natural Colluvium
TR 8	I	0–150+	5YR 3/2	Sandy loam; 10% basalt cobbles; saprolitic rock; base of excavation.	Natural Colluvium

Table 2. (Continued)

Location	Layer	Depth (cmbs)	Color	Description	Interpretation
TR 9	I	0–160+	5YR 3/2	Sandy loam; 10% basalt cobbles; saprolitic rock; base of excavation.	Natural Colluvium
TR 10	I	0–8	N/A	Medium basalt gravel; smooth, very abrupt boundary.	Parking Lot Surface
	II	8–180+	2.5YR 3/4	Sandy loam; 10% basalt cobbles; saprolitic rock; base of excavation.	Natural Colluvium
TR 11	I	0–7	N/A	Fine basalt gravel; smooth, very abrupt boundary.	Parking Lot Surface
	II	7–16	5YR 3/2	Sandy loam; 2% basalt gravel; smooth, very abrupt boundary.	Fill
	III	16–20	N/A	Asphalt; smooth, very abrupt boundary	Old Road or Parking Lot
	IV	20–160+	5YR 3/2	Sandy loam; 5% basalt cobbles; saprolitic rock; base of excavation.	Natural Colluvium

Table 3. Trench Locations and Dimensions

Trench	Location	Length (m)	Width (m)	Depth (cmbs)
TR 1	Just inside the entrance driveway	4.9	2.3*	190
TR 2	Entrance driveway, north of realty office	8.1	.50	160
TR 3	Northeast corner of mauka parking lot	5.9	.50	188
TR 4	Just north of ice machine shed	4.2	.50	154
TR 5	South of ice machine shed	7.4	.50	130
TR 6	East center of mauka parking lot	7.9	.50	150
TR 7	Southeast of mauka parking lot, north of dumpsters	8.2	.50	130
TR 8	Just south of dumpsters	7.1	.50	150
TR 9	South center of property, 20 m north of Foodland parking lot	5.8	.50	160
TR 10	East side of central parking lot, 30 m north of TR 9	4.7	.50	180
TR 11	North side of makai parking lot, in front of Over the Rainbow entrance steps	6.5	.50	160

*TR 1 was excavated to 2.3 m wide on its north end to locate the end of a broken utility line

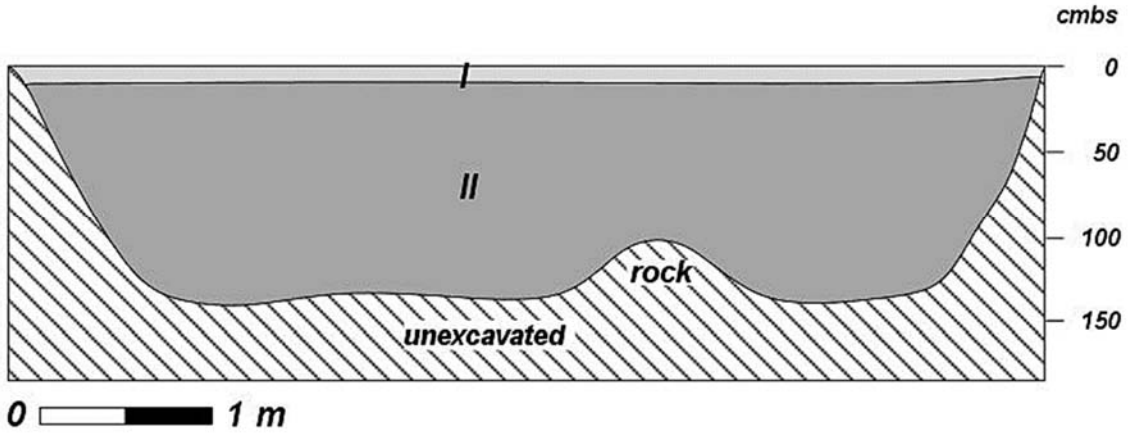


Figure 15. TR 7 north face profile drawing.

Figure 16. TR 7 north face photo.

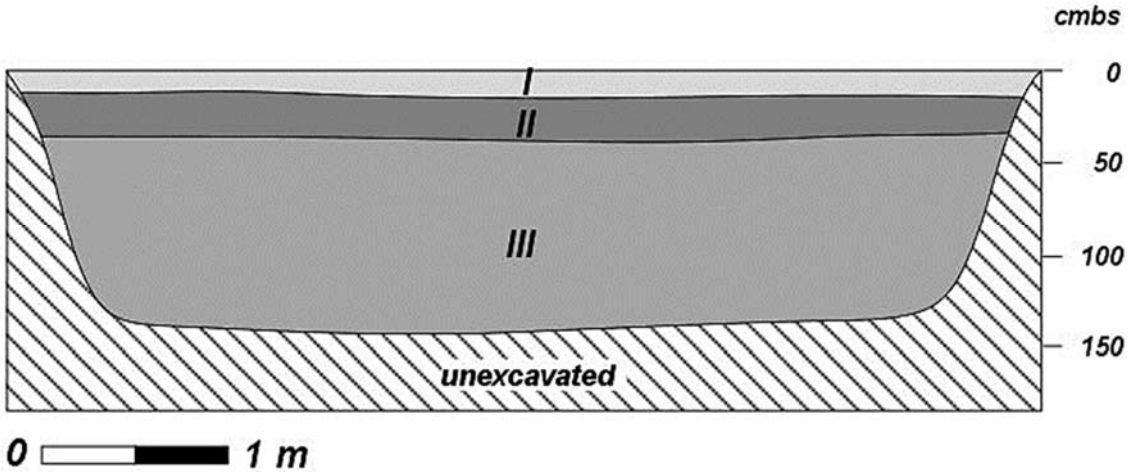


Figure 17. TR 5 north face profile drawing.

Figure 18. TR 5 north face photo.

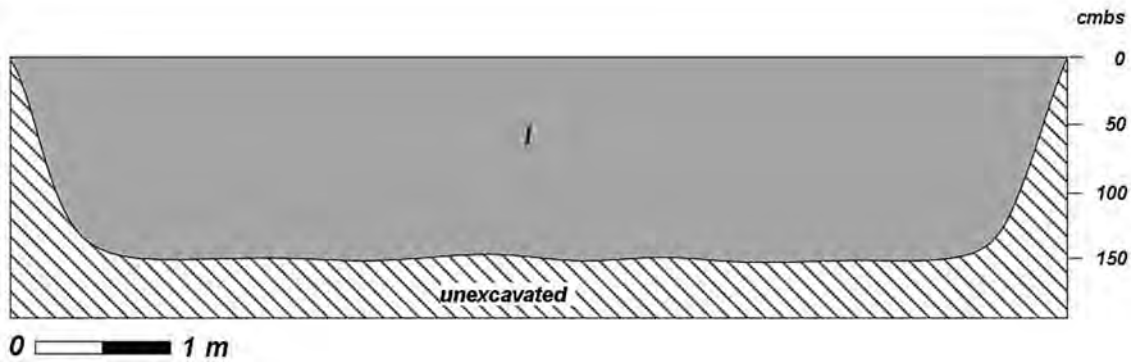


Figure 19. TR 8 north face profile drawing.

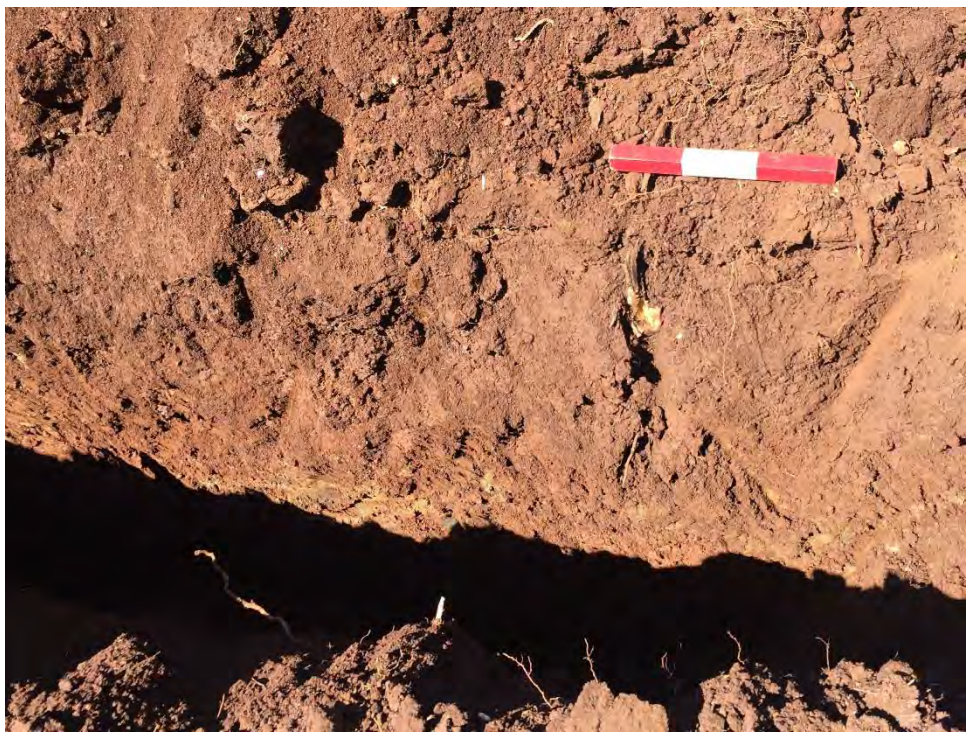


Figure 20. TR 8 north face photo.

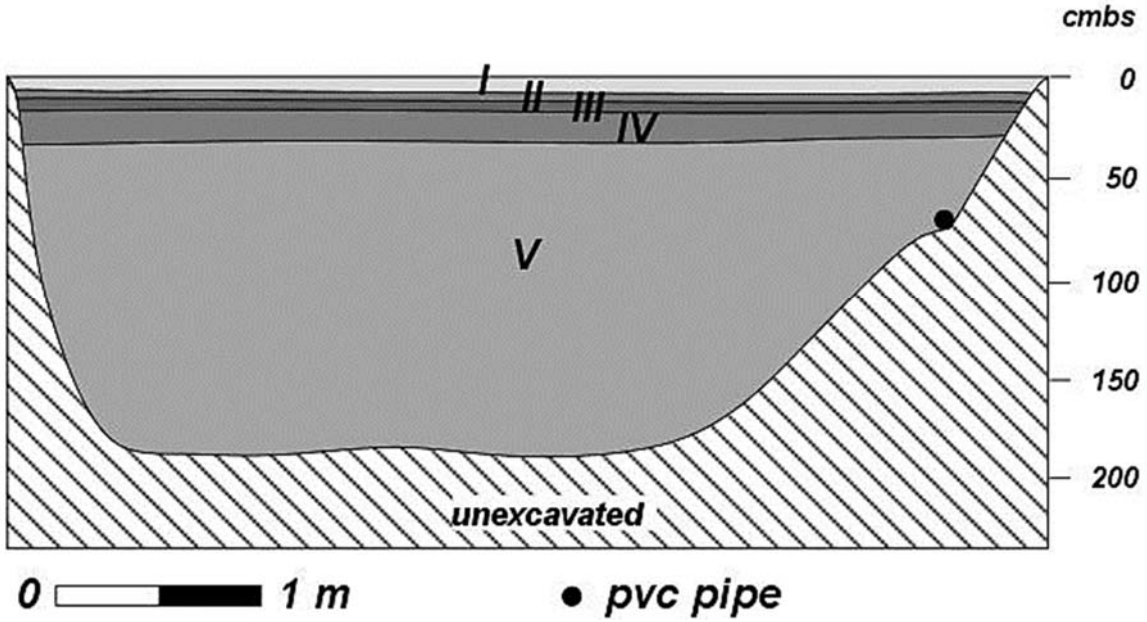


Figure 21. TR 1 east face profile drawing.

Figure 22. TR 1 east face photo, north end of the trench.

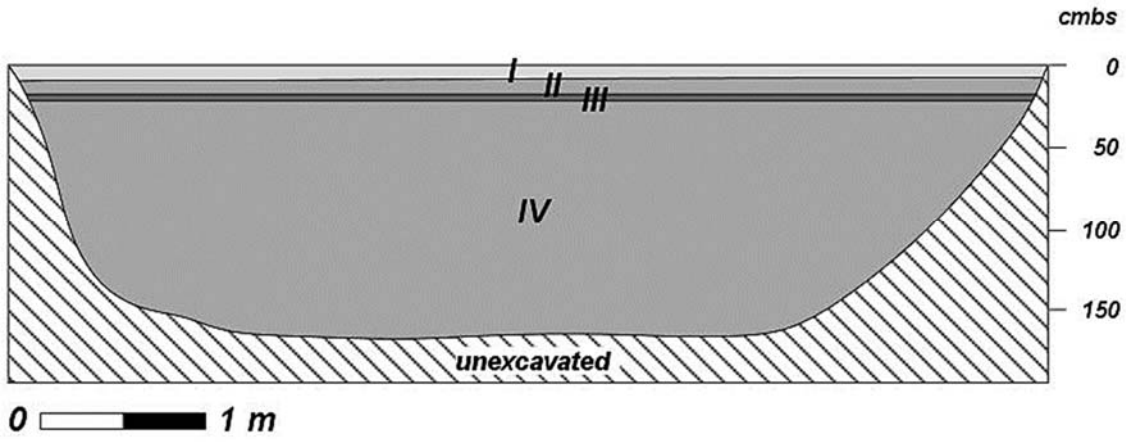


Figure 23. TR 11 west face profile drawing.

Figure 24. TR 11 west face photo.

SUMMARY AND RECOMMENDATIONS

An archaeological inventory survey was conducted for a proposed commercial development in Pūpūkea Ahupuaʻa, Koʻolauloa District, on the island of Oʻahu on TMK: (1) 5-9-011:068, 069, and 070. The archaeological work included pedestrian survey that covered 100% of the 1.1 ha (2.72 ac.) project area, as well as test excavations consisting of 11 trenches. Due to negative findings, the AIS results are presented as an archaeological assessment per HAR §13–275-5(b)(5)(A).

No surface archaeological remains were found during pedestrian survey of the parcels. The entire area has been disturbed by modern activity, such as bulldozing and paving. Likewise, subsurface testing did not yield any evidence of subsurface archaeological features or deposits. Stratigraphy consisted of a colluvial deposit, sometimes with various fill layers or modern pavements above it.

This survey produced no findings and no Jaucas or beach sand was encountered during subsurface testing, therefore archaeological monitoring is not recommended. Whereas human burials have been found previously in the vicinity (Sites 3955, 4150, and 4285); these were located in coastal deposits (Jaucas or beach sand), while only colluvial deposits were observed within the project area. Although no further work is recommended, it is possible that human remains may be discovered during construction activities, even though no such evidence was found during the survey. Should human burial remains be discovered during construction activities, work in the vicinity of the remains should cease immediately and the SHPD should be contacted.

GLOSSARY

ʻāhole	Mature stage of the Hawaiian flagtail fish. The young stage is *ʻāholehole*.
ahupuaʻa	Traditional Hawaiian land division usually extending from the uplands to the sea.
aku	The bonito or skipjack (*Katsuwonus pelamis*), a prized eating fish.
aliʻi	Chief, chiefess, monarch.
heiau	Place of worship and ritual in traditional Hawaiʻi.
ʻili, ʻiliʻāina	Traditional land division, usually a subdivision of an ahupuaʻa.
Kahiki	A far away land, sometimes refers to Tahiti.
kahuna	An expert in any profession, often referring to a priest, sorcerer, or magician.
kala	The surgeonfish or unicorn fish, *Teuthidae*.
kamaʻāina	Native-born.
koʻa	Fishing shrine.
koa haole	The small tree *Leucaena glauca*, historically-introduced to Hawaiʻi.
kukui	The candlenut tree, or *Aleurites moluccana*, the nuts of which were eaten as a relish and used for lamp fuel in traditional times.
kula	Plain, field, open country, pasture, land with no water rights.
kuleana	Right, title, property, portion, responsibility, jurisdiction, authority, interest, claim, ownership.
kuʻula	A stone god used to attract fish, an altar near the sea, or a hut where fishing gear was kept with kuʻula images to invoke their power.
luakini	Large heiau of human sacrifice.
Māhele	The 1848 division of land.
makai	Toward the sea.
manini	The surgeonfish *Acanthurus triostegus*, common in Hawaiian waters.
mauka	Inland, upland, toward the mountain.
mele	Song, chant, or poem.
menehune	Small people of legend who worked at night to build structures such as fishponds, roads, and heiau.
midden	A heap or stratum of refuse normally found on the site of an ancient settlement. In Hawaiʻi, the term generally refers to food remains, whether or not they appear as a heap or stratum.
moku	District, island.
moi	The threadfish *Polydactylus sexfilis*, a highly prized food item.
moʻo	Lizard, dragon, water spirit.
moʻo, moʻoʻāina	Narrow strip of land, smaller than an ʻili.
moʻolelo	A story, myth, history, tradition, legend, or record.

‘ō‘io	Ladyfish, bonefish (*Albula vulpes*).
‘ōlelo no‘eau	Proverb, wise saying, traditional saying.
pōhaku	Rock, stone.
saprolitic rock	Soft, decomposing bedrock.
sugarcane	The Polynesian-introduced *Saccharum officinarum*, or kō, a large grass traditionally used as a sweetener and for black dye.
‘uala	The sweet potato, or *Ipomoea batatas*, a Polynesian introduction.
uhu	An adult parrot fish, one of two genera of the *Scaridae* family known to occur in Hawai‘i.
‘ōpelu	Mackerel scad (*Decapterus pinnulatus and D. maruadsi*).
wai	Water or liquid other than salt water.

REFERENCES

Athens, J.S. and C. Magnusen
1998 *Sunset Beach Park Archaeological Inventory Survey, Oʻahu, Hawaiʻi*. International Archaeological Research Institute, Inc., Honolulu.

Beaglehole, J.C. (ed.)
1967 *The Journals of Captain James Cook, Vol. III, Part One*. Hakluyt Society. Cambridge University Press, Cambridge, United Kingdom.

Beck, J.A., J.D. McIntosh, and P.L. Cleghorn
2004 *Archaeological Assessment for the Proposed North Shore Center at Pūpūkea (TMK 5-9-11:17) Located in Pūpūkea Ahupuaʻa, District of Koʻolauloa, Oahu*. Pacific Legacy, Inc., Kailua, Hawaiʻi.

Berdy, C., M. Elmore, J.R. Moore, and J. Kennedy
2002 *An Archaeological Inventory Survey Report for a Property Located at TMK: 5-9-23:1 & 5-9-24:1 (Por.) and 6-1-02:22 (Por.) in Pupukea and Waimea Ahupuaʻa, Koʻolauloa and Waialua Districts, Island of Oʻahu*. Archaeological Consultants of the Pacific, Inc., Haleʻiwa, Hawaiʻi.

Carson, M.
2000 *Archaeological Survey at Sunset Beach*. Pacific Legacy, Kailua, Hawaiʻi.

Chinen, J.
1961 *The Great Mahele*. University of Hawai`i Press, Honolulu.

Clark, John
1977 *Beaches of Oʻahu*. The University Press of Hawaiʻi, Honolulu.

2005 *Beaches of Oʻahu*. Revised Edition. The University Press of Hawaiʻi, Honolulu.

Colin, B.L. and H.H. Hammatt
2000 *A Letter Report on the Disinterment of an Inadvertent Human Burial Find on the Board of Water Supply Sunset Beach Waterline Project on Kenui Road, Pūpūkea Ahupuaʻa, Koʻolauloa, Oʻahu (TMK 5-9-19:51) (State Site # 50-80-01-5532).* Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

Cordy, D.L., A. Hazlett, and H.H. Hammatt
2008 *Archaeological Monitoring Report for Construction of Parking Lot Improvements at ʻEhukai Beach Park, Pūpūkea Ahupuaʻa, District of Koʻolauloa, Oʻahu TMK: [1]5-9-020:022,023*. Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

Dening, G.
1995 *The Death of William Gooch: A History's Anthropology*. University of Hawaiʻi Press, Honolulu.

Denison, D.O.
1979 *Archaeological Reconnaissance of Property Across from Pupukea Beach Park.* Windward Community College, Kāneʻohe, Hawaiʻi.

Donn, J.M.
1902 *North Coast of Oahu*. Reduced from Reg. Maps in Gov't Survey Office. May 20, 1902. Reg. No. 2146. Scale 1 in. = 1,000 ft.

Dunbar, H.
1989 Puʻu o Mahuka National Register Nomination Form. Division of State Parks, DLNR, Honolulu.

Elmore, M. and J. Kennedy
1999 *An Archaeological Monitoring Report for the Sunset Beach Support Park Located at TMK:5-9-15:10 and 11 Paumalu Ahupuaʻa, Koʻolauloa District, Island of Oahu*. Archaeological Consultants of Hawaii, Inc., Haleiwa, Hawaiʻi.

Estioko-Griffin, A.
1986 *A Brief Historical Overview of the Puʻu o Mahuka Heiau Koolauloa, Oahu.* Report on file at the Hawaiʻi State Historic Preservation Division, Kapolei, Hawaiʻi.

Foote, D., E. Hill, S. Nakamura, and F. Stephens
1972 *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii*. U.S. Department of Agriculture, Soil Conservation Service. Published in cooperation with the University of Hawaii Agricultural Experiment Station, Washington, D.C.

Fornander, A.
1969 *An Account of the Polynesian Race*. Vol. 2, Tuttle and Co., Rutland, Vermont.

Giambelluca, T.W., Q. Chen, A.G. Frazier, J.P. Price, Y.-L. Chen, P.-S. Chu, J.K. Eischeid, and D.M. Delparte
2013 Online Rainfall Atlas of Hawaiʻi. Bull. Amer. Meteor. Soc. 94, 313-316, doi: 10.1175/BAMS-D-11-00228.1.

Griffin, A.
1991 *Assessment of a Burial Inadvertently found at Ehukai Beach, Pupukea, Waialua, Oahu, TMKL 5-9-20:22 & 23*. State Historic Preservation Division.

Handy, E.S., E.G. Handy, and M.K. Pukui
1991 *Native Planters in Old Hawaii: Their Life, Lore, and Environment*. Revised Edition. Bernice P. Bishop Museum Bulletin 23, Bishop Museum Press, Honolulu.

Hammatt, H.H.
2014 *Archaeological Monitoring Report for the Sunset Beach Elementary School Electrical Upgrades Project, Pūpūkea Ahupuaʻa, Koʻolauloa District, Oʻahu TMK: [1] 5-9-005:018*. Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

Haun, A.E. and D. Henry
2001 *Archaeological Inventory Survey Sunset Beach Agricultural Subdivision TMK: 5-9-05:66 Land of Pupukea Koʻolauloa District, Island of Oahu*. Haun & Associates, Keaʻau, Hawaiʻi.

Jones, C.K. and H.H. Hammatt
2004 *Archaeological Monitoring of Kamehameha Highway, from Pūpūkea to Waialeʻe, District of Koʻolauloa, Island of Oʻahu (TMK: 5-8-01, 5-8-03-06, 5-9-01-04, 5-9-07-16).* Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

Ka Leo o Ka Lahui
1893 Ka Moolelo o Hiiakaikapoliopele. March 23, 24. Vol. 2, No. 668, page 4.

Kamakau, S.M.
1992 *Ruling Chiefs of Hawaii, Revised Edition*. The Kamehameha Schools Press, Honolulu.

Kawachi, C.
1988 *Field Inspection of an Inadvertent Burial on Ke-Iki Road in Pupukea, Koʻolauloa, Oʻahu. TMK 5-9-03:29*. State Historic Preservation Division, Honolulu.

Kawachi, C. and M. Smith
1989 *Field Inspection of an Inadvertent Burial on Ke-Iki Road in Pupukea, Koʻolauloa, Oʻahu, TMK 5-9-03:46*. State Historic Preservation Division, Honolulu.

Kennedy, J.
1991 *Inventory Survey and Subsurface Testing Results for Ehukai Beach Park, TMK: 5-9-20:22&23 Located in the Ahupuaʻa of Pupukea, Island of Oahu*. Archaeological Consultants of Hawaii, Inc., Haleiwa, Hawaiʻi.

Kennedy, J. and T. Denham
1992 *Archaeological Monitoring Report for ʻEhukai Beach Park Improvements Located at Pupukea Ahupuaʻa, Koʻolauloa, Island of Oahu. TMK: 5-9-20:22 &23*. Archaeological Consultants of Hawaii, Inc., Haleiwa, Hawaiʻi.

Kuykendall, R.S.
1967 *The Hawaiian Kingdom*. U.H. Press, Honolulu.

Macdonald, G.A., A.T. Abbot, and F.L. Peterson
1983 *Volcanoes in the Sea the Geology of Hawaii*. Second Edition. University of Hawaii Press, Honolulu.

Mayberry, J.D. and A.E. Haun
1988 *Archaeological Reconnaissance Survey and Limited Subsurface Testing Pupukea-Paumalu Development Project Area*. Paul H. Rosendahl, PhD, Inc., Hilo, Hawaiʻi.

McAllister, J.G.
1933 *Archaeology of Oahu*. Bishop Museum Bulletin 104, Honolulu.

McElroy, W.K. and P.L. Lima
2015 *Burial Site Component of an Archaeological Data Recovery and Preservation Plan for SIHP 50-80-01-7678, Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi (TMK: (1) 5-9-020:029)*. Keala Pono Archaeological Consulting, Kāneʻohe, Hawaiʻi.

2016 *Archaeological Monitoring Report for TMK: (1) 5-9-020:029 in Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu, Hawaiʻi*. Keala Pono Archaeological Consulting, Kāneʻohe, Hawaiʻi.

McGerty, L. and R.L. Spear
2011 *An Archaeological Monitoring Report for the Pūpūkea Road Rockfall Mitigation Project, Phase I, Pūpūkea Ahupuaʻa, Koʻolauloa District, Oʻahu Island, Hawaiʻi TMK (1) 5-9-005 and 011*. Scientific Consultant Services, Inc., Honolulu.

Moore, J.R. and J. Kennedy
2006 *An Archaeological Inventory Survey Report for a 14 Acre Parcel Located at TMK: 5-9-23:01 & 5-9-24:01 (Por.) and 6-1-02:22 (Por.) in Pupukea and Waimea Ahupuaʻa. Koʻolauloa and Waialua Districts, Island of Oʻahu*. Archaeological Consultants of Hawaii, Inc., Haleiwa, Hawaiʻi.

Nakuina, M.
2005 *The Wind Gourd of Laʻamaomao*. Kalamakū Press, Honolulu.

Paki, P.
1972 *Legends of Hawaii: Oahu's Yesterday*. Honolulu.

Pantaleo, J.
2000 *Archaeological Assessment for the Sunset Beach Recreation Center (TMK 5-9-07:021)*. Jeffrey Pantaleo Consultants, Honolulu.

PBR Hawaiʻi & Associates
2014 *Camp Pūpūkea Master Draft Environmental Assessment*. Honolulu.

Pukui, M.K., S.H. Elbert, and E.T. Mookini.
1976 *Place Names of Hawaii*. University Press of Hawaii, Honolulu.

Schoeneberger, P.J., D.A. Wysocki, E.C. Benham, and W.D. Broderson (editors)
2002 *Field Book for Describing and Sampling Soils, Version 2.0*. Natural Resources Conservation Service, National Soil Survey Center, Lincoln, Nebraska.

Smith, M. and M. Yent
1991 *Archaeological Investigations at Puu O Mahuka Heiau State Monument (Site 50-80-01-249) and Nearby Sites (50-80-01-2502 and 50-80-001-3951) Pupukea, Koolauloa, Oahu (TMK: 5-9-05:4, 21 and 68)*. Division of State Parks DLNR, Honolulu.

Soehren, L.J.
2010 *A Catalog of Hawaiian Place Names*. Lloyd J. Soehren, Honokaʻa, Hawaiʻi.

Sterling, E. and C. Summers
1978 *Sites of Oʻahu*. Bishop Museum Press, Honolulu

Thien, S.
1979 A Flow Diagram for Teaching Texture-By-Feel Analysis. *Journal of Agronomic Education* 8:54–55.

Tulchin, T. and H.H. Hammatt
2005 *Archaeological Field Inspection and Literature Review for a Proposed Potential Rockfall Mitigation Project along Pūpūkea Road, Pūpūkea Ahupuaʻa, Koʻolauloa District, Island of Oʻahu TMK (1) 5-9-11 por. and 5-9-18 por*. Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

2009 *Archaeological Inventory Survey for the Pūpūkea Road Rockfall Mitigation Project, Pūpūkea Ahupuaʻa, Koʻolauloa District, Oʻahu Island TMK: [1]5-9-018:025-032 por. and 038 por*. Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

Tulchin, T., M. Mann, D.W. Shideler, and H.H. Hammatt
2002 *Archaeological Monitoring Report for ʻEhukai Beach Park Bath House Improvements Work, Pūpūkea Ahupuaʻa, District of Koʻolauloa Island of Oʻahu TMK: 5-9-20-22 & 23*. Cultural Surveys Hawaiʻi, Inc., Kailua, Hawaiʻi.

Wall, W.E.
1904 *Pupukea-Paumalu Homesteads, Koolauloa, Oahu*. Hawaii Territory Survey. HTS Plat 2036. Scale 1 in. = 1,000 ft.

APPENDIX F

TRANSPORTATION IMPACT ANALYSIS REPORT

FEHR PEERS

Pupukea Rural Community Commercial Center

Draft Transportation Impact Analysis Report

Prepared for: G70
July 25, 2017
SD16-0227

DRAFT REPORT

Transportation Impact Analysis Report for the Proposed Pupukea Rural Community Commercial Center in Pupukea, HI

Prepared for:
G70

July 25, 2017

SD16-0227

FEHR PEERS

Table of Contents

1.0 EXECUTIVE SUMMARY 4

2.0 INTRODUCTION 6

2.1 Project Description 6
2.2 Project Study Area 9
2.3 Study Scenarios 9
2.4 Traffic Analysis Methods 10
2.4.1 Signalized Intersections 10
2.4.2 Unsignalized Intersections 10
2.4.3 Significant Impact Criteria 12
2.5 Report Organization 13

3.0 EXISTING CONDITIONS 14

3.1 Existing Transportation Facilities 14
3.1.1 Existing Roadway System 14
3.1.2 Existing Transit Facilities and Services 14
3.1.3 Existing Bicycle Facilities and Activity 17
3.1.4 Existing Pedestrian Facilities and Activity 18
3.2 Existing Intersection Volumes/Lane Configurations 19
3.3 Field Observations 21
3.4 Existing Intersection Levels of Service 22
3.5 Existing Foodland Truck Deliveries 23

4.0 NEAR TERM (2021) BASELINE CONDITIONS 24

4.1 Near Term (2021) Traffic Estimates 24
4.1.1 Areawide or Ambient Traffic Growth 24
4.1.2 Future Transportation Improvements 24
4.2 Near Term (2021) Baseline Levels of Service 26

5.0 PROJECT TRAFFIC ESTIMATES 27

5.1 Project Trip Generation Estimates 27
5.2 Project Trip Distribution and Assignment 28

6.0 NEAR TERM (2021) PLUS PROJECT CONDITIONS 34

6.1 Proposed Transportation Improvements 34

6.2 Near Term (2021) Plus Project Intersection Level of Service 35

6.3 Potential Traffic Impacts 37

7.0 SITE ACCESS AND ON-SITE CIRCULATION 38

7.1 Site Access 38

7.2 On-Site Vehicle Circulation 39

7.3 On-Site pedestrian and bicycle Circulation 39

7.4 Foodland Deliveries Circulation 39

8.0 MULTIMODAL ASSESSMENT 41

8.1 Transit facilities and Services 41

8.2 Bicycle facilities 41

8.3 Pedestrian facilities 42

Appendices

Appendix A: Traffic Count Data

Appendix B: Existing LOS Worksheets

Appendix C: Near Term LOS Worksheets

Appendix D: Pedestrian Crosswalk Warrant

List of Figures

Figure 1 Project Location 7
Figure 2 Proposed Site Plan 8
Figure 3 Transit Facilities 16
Figure 4 Peak Hour Traffic Volumes and Lane Configurations – Existing (2016) Conditions 20
Figure 5 Peak Hour Traffic Volumes and Lane Configurations – Near Term (2021) Baseline Conditions 25
Figure 6 Project Trip Distribution 30
Figure 7 Midday Project Trip Assignment 31
Figure 8 PM Project Trip Assignment 32
Figure 9 Saturday Project Trip Assignment 33
Figure 10 Peak Hour Traffic Volumes and Lane Configurations – Near Term (2021) Plus Project Conditions 36
Figure 11 Peak Hour Traffic Volumes and Lane Configurations – Near Term (2021) Plus Project Conditions 44

List of Tables

Table 1: Signalized Intersection LOS Definitions 11
Table 2: Unsignalized Intersection Level of Service Definitions 11
Table 3: Existing Transit Services 15
Table 4: Existing (2016) Intersection Levels of Service 22
Table 5: Near Term (2021) Baseline Intersection Levels of Service 26
Table 6: Project Trip Generation Estimates 28
Table 7: Near Term (2021) Baseline Intersection Levels of Service 35

1.0 EXECUTIVE SUMMARY

This report presents the results of the transportation impact analysis report (TIAR) for the proposed Pupukea Rural Community Commercial Center in the community of Pupukea on the North Shore of the island of Oahu. The proposed project is a 30,000 square-foot center located on the mauka side of Kamehameha Highway between the existing Foodland store and Pahoe Road. Access to the proposed project would be provided by a new full-access driveway on Kamehameha Highway approximately 210 feet north of Pupukea Road. To minimize the impact of project traffic on highway throughput, the project also includes the installation of a new center two-way left-turn lane to provide a refuge area for traffic turning left into and out of the site. In addition, the two existing Foodland driveways will be closed to reduce the total number of access points on the highway, and internal connections will be made between the project site and Foodland parcels to allow Foodland traffic to use the new project driveway on the highway.

The impacts of the proposed project to the surrounding transportation system were evaluated following guidelines established by the State of Hawaii Department of Transportation – Highways Division (HDOT) and the City & County of Honolulu Department of Planning & Permitting (DPP) Traffic Review Branch (TRB). The operations of two intersections were evaluated during the weekday midday (MD), weekday evening (PM), and Saturday midday (SAT) peak hours for Existing (2017) and Year 2021 conditions without and with the project.

Project-generated trips were estimated using vehicle trip rates published by the Institute of Transportation Engineers (ITE) for specialty retail centers. The proposed project is estimated to generate a total of 1,322 net new daily vehicle trips, 65 net new peak hour trips (29 inbound/36 outbound) during each of the midday and PM peak hours, and 98 Saturday midday peak hour trips (51 inbound/47 outbound). These are the new trips that are estimated to be added to the highway and Pupukea Road with development of the project site as proposed. The *total* number of project trips turning into and out of the site driveways is 1,322 daily trips, 93 midday/PM peak hour trips, and 140 Saturday midday peak hour trips, after including pass-by trips (i.e., those trips into and out of the site made by vehicles that are already on the highway).

The addition of project trips is not expected to significantly impact the signalized Kamehameha Highway/Pupukea Road intersection, and the proposed new driveway intersection is projected to operate acceptably with the project in place. The provision of the two-way left-turn lane provides additional capacity to minimize the potential increase in delay with the project.

The proposed project is also not expected to substantially increase the walking, biking, or transit demand to a level where it could not be accommodated by existing or planned facilities. However, several multimodal improvements are recommended to enhance facilities and safety for these modes.

Implementation of the project will require relocation of the existing northbound bus stop to either north or south of the new project driveway. To provide a controlled crossing of the highway by bus transit patrons, the location between the new driveway and Pupukea Road is recommended because of the proximity of the existing traffic signal. A new path is recommended for the entire length of the mauka side of the highway along the project site and Foodland frontages, as is installation of new crosswalk across the highway at Pahoe Road with rectangular rapid flashing beacons (RRFBs) to increase driver awareness of pedestrians. In addition, high visibility crosswalks are recommended at select locations within the site to guide pedestrians and increase their presence to drivers.

2.0 INTRODUCTION

This transportation impact analysis report (TIAR) presents the results of the study conducted by Fehr & Peers for the proposed Pupukea Rural Community Commercial Center on the island Oahu. The project site is located on the mauka side of Kamehameha Highway (Hwy 83) south of Pahoe Road on the North Shore of Oahu. This TIAR includes a description of the assumptions and methods used to conduct the study, as well as a discussion of the results. This TIAR was conducted in accordance with the guidelines and standards of the affected government agencies, and it addresses the potential impact of the project on all travel modes.

2.1 PROJECT DESCRIPTION

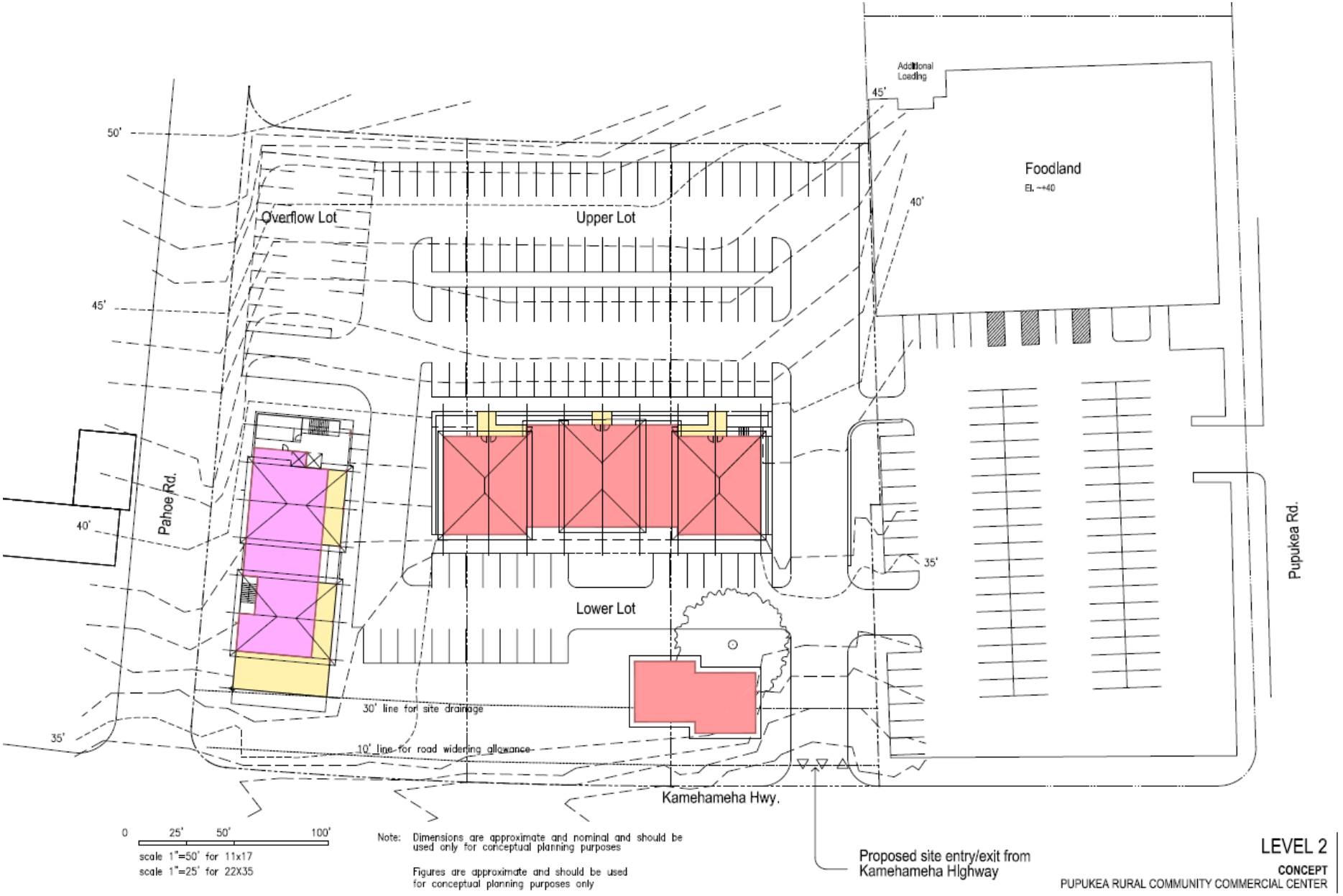
The proposed project is the development of a commercial center on Kamehameha Highway. The existing site currently includes a real estate office, several food trucks, a clothing boutique, and several food trucks, and is bordered by Pahoe Road on the north side, Foodland on the south side, Kamehameha Highway on the makai side, and a single-family residential unit on the mauka side. The proposed project would remove the existing uses and develop a neighborhood retail center with up to 30,000 square feet of gross leasable area. The specific tenants have not been identified but may include a surf shop clothing store, four to six food trucks, office space for non-profit organizations, a full service restaurant, an urgent care facility, and other small food and retail shops.

Access to the proposed project would be provided by a new full-access driveway on Kamehameha Highway approximately 210 feet north of Pupukea Road. To minimize the impact of project traffic on highway throughput, the project also includes the installation of a new center two-way left-turn lane to provide a refuge area for traffic turning left into and out of the site. In addition, the two existing Foodland driveways will be closed to reduce the total number of access points on the highway, and internal connections will be made between the project site and Foodland parcels to allow Foodland traffic to use the new project driveway on the highway.

The location of the project site and immediate study area is shown on **Figure 1**, and the proposed site plan showing the building locations and site layout is illustrated on **Figure 2**.

Figure 1

Project Site and Analyzed Intersections



Source: G70, May 31, 2017

Figure 2

Site Plan

2.2 PROJECT STUDY AREA

Regional access to the proposed project will be provided via Kamehameha Highway, and local access will provided via Pupukea Road (and the existing Foodland Driveway). The transportation analysis evaluated the operations at the two intersections in the vicinity of the proposed project that are listed below and shown on **Figure 1**.

1. Kamehameha Highway / Pupukea Road
2. Kamehameha Highway / Future Project Driveway (only analyzed in Plus Project scenario)

The study analyzed the potential project-related traffic impacts under typical: weekday midday, weekday PM, and Saturday midday peak hour traffic conditions at full build-out in 2021. The peak hour is the highest one-hour total of traffic between 11:00 am and 2:00pm in the midday on a weekday and on a Saturday, and between 3:00 pm and 6:00pm in the late afternoon/evening on a weekday. Similar to most retail centers, a study of AM peak period conditions (i.e. 6 AM to 9 AM) was not conducted because the number of project-generated vehicle trips was expected to be negligible given the potential uses on site.

2.3 STUDY SCENARIOS

The operations of the study intersections were evaluated during the weekday midday and PM peak hours, and midday Saturday peak hour for the following scenarios:

- **Existing Conditions** – The analysis of existing traffic conditions was based on 2016 counts collected for the analyzed peak hours. The existing conditions analysis also includes a description of key area roadways and an assessment of the transit facilities and services near the site.
- **Near Term (2021) Baseline Conditions** – Existing peak-hour volumes increased to account for approved (but not yet occupied) development projects and growth in the area to the year of anticipated project occupancy in 2021. Traffic growth was estimated based on an annual growth factor to account for ambient growth *plus* traffic generated from approved but not yet constructed and pending developments in the study area. This scenario forms the baseline for identifying project impacts.
- **Near Term (2021) Plus Project Conditions** – This traffic scenario provides projected traffic volumes and an assessment of operating conditions under Near Term Baseline Conditions with the addition of project-generated traffic. The near term impacts of the proposed project on future traffic conditions were identified.

2.4 TRAFFIC ANALYSIS METHODS

The analysis of roadway operations performed for this study is based on procedures presented in the *Highway Capacity Manual* (HCM), published by the Transportation Research Board in 2010. The operations of roadway facilities are described with the term level of service (LOS). LOS is a qualitative description of traffic flow based on such factors as speed, travel time, delay, and freedom to maneuver. Six levels are defined from LOS A, with the least congested operating conditions, to LOS F, with the most congested operating conditions. LOS E represents "at-capacity" operations. Operations are designated as LOS F when volumes exceed capacity, resulting in stop-and-go conditions. The methodologies for signalized and unsignalized intersections are described below.

2.4.1 SIGNALIZED INTERSECTIONS

The method described in Chapter 18 of the *Highway Capacity Manual 2010* was used to prepare the LOS calculations for the signalized study intersection of Kamehameha Highway and Pupukea Road. This LOS method analyzes a signalized intersection's operation based on average control delay per vehicle. Control delay alone is used to characterize LOS for the entire intersection or an approach. Control delay includes the initial deceleration delay, queue move-up time, stopped delay, and final acceleration delay. The average control delay for signalized intersections is calculated using Synchro 9.0 analysis software and is correlated to a LOS designation as shown in **Table 1**.

2.4.2 UNSIGNALIZED INTERSECTIONS

The operations of the unsignalized intersection of Kamehameha Highway at Pahoe Road were evaluated using the method contained in Chapter 19: Two-Way Stop-Controlled Intersections of the *HCM 2010*. LOS ratings for stop-sign-controlled intersections are based on the average control delay expressed in seconds per vehicle. At all-way stop-controlled intersections the overall intersection delay and LOS is reported, and the LOS is characterized solely on control delay. At two-way or side-street-controlled (TWSC) intersections, the average control delay is calculated for each minor-street stopped movement and the major-street left turns, not for the intersection as a whole. For approaches composed of a single lane, the control delay is computed as the average of all movements in that lane. For approaches with multiple lanes, the control delay is computed for each movement; the movement with the worst (i.e., longest) delay is presented for TWSC. The average control delay for unsignalized intersections is calculated using Synchro 9.0 analysis software and is correlated to a LOS designation as shown in **Table 2**.

TABLE 1: SIGNALIZED INTERSECTION LOS DEFINITIONS

Level of Service	Description	Delay in Seconds
A	Progression is extremely favorable and most vehicles arrive during the green phase. Most vehicles do not stop at all. Short cycle lengths may also contribute to low delay.	≤ 10.0
B	Progression is good, cycle lengths are short, or both. More vehicles stop than with LOS A, causing higher levels of average delay.	> 10.0 to 20.0
C	Higher congestion may result from fair progression, longer cycle lengths, or both. Individual cycle failures may begin to appear at this level, though many still pass through the intersection without stopping.	> 20.0 to 35.0
D	The influence of congestion becomes more noticeable. Longer delays may result from some combination of unfavorable progression, long cycle lengths, or high V/C ratios. Many vehicles stop, and the proportion of vehicles not stopping declines. Individual cycle failures are noticeable.	> 35.0 to 55.0
E	This level is considered by many agencies to be the limit of acceptable delay. These high delay values generally indicate poor progression, long cycle lengths, and high V/C ratios. Individual cycle failures are frequent occurrences.	> 55.0 to 80.0
F	This level is considered unacceptable with oversaturation, which is when arrival flow rates exceed the capacity of the intersection. This level may also occur at high V/C ratios below 1.0 with many individual cycle failures. Poor progression and long cycle lengths may also be contributing factors to such delay levels.	> 80.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2010.

TABLE 2: UNSIGNALIZED INTERSECTION LEVEL OF SERVICE DEFINITIONS

Level of Service	Description	Average Control Delay Per Vehicle (Seconds)
A	Little or no delay.	≤ 10.0
B	Short traffic delay.	> 10.0 to 15.0
C	Average traffic delays.	> 15.0 to 25.0
D	Long traffic delays.	> 25.0 to 35.0
E	Very long traffic delays.	> 35.0 to 50.0
F	Extreme traffic delays with capacity exceeded.	> 50.0

Source: *Highway Capacity Manual*, Transportation Research Board, 2010.

Notes: [1] For approach-based and intersection-wide assessments, such as that used for AWSC intersections, LOS is defined solely by control delay.

2.4.3 SIGNIFICANT IMPACT CRITERIA

The analysis of Near Term Conditions compares future baseline operations with conditions when the project is fully built out to determine whether or not project implementation is expected to result in a significant impact on the surrounding roadways. Based on previous studies conducted for the City & County of Honolulu Department of Planning and Permitting (DPP) Traffic Review Branch (TRB), the minimum desired operating standard for a signalized intersection is typically LOS D. Additionally, the Hawaii Department of Transportation (HDOT) strives to maintain LOS D intersection operations for State facilities, such as Kamehameha Highway. Both agencies usually define a significant intersection impact when the operation of an intersection or turning movement changes from LOS D or better to LOS E or F. Impacts are also defined to occur when the addition of project traffic exacerbates locations already operating or projected to operate at LOS E or F. When evaluating intersection operations at any location, other factors are considered in the analysis, such as traffic volumes, volume-to-capacity (V/C) ratios (should ideally be less than 1.00), and potential secondary impacts to pedestrian, bicycle, and transit travel.

Each of the identified significant impacts is categorized as either a project-related or cumulative impact. If the addition of project traffic is expected to degrade LOS D or better operations to LOS E or F at a signalized intersection, then the project is considered to have a project-specific impact. An impact is considered a cumulative impact at a signalized intersection if the addition of project trips exacerbates LOS E or F operations.

For unsignalized intersections, the project is determined to have a significant project-specific impact if the addition of project traffic causes an unsignalized intersection to degrade from LOS D or better to LOS E or F <u>and</u> if the peak hour signal warrant is satisfied. An impact is considered a cumulative impact when it adds traffic to a study location that includes a controlled approach that operates at an undesired level (i.e., LOS E or F) <u>and</u> if the peak hour signal warrant is satisfied. The use of the peak hour signal warrant is one indication that an alternate traffic control device may be needed at a study location.

The City & County of Honolulu does not publish impact criteria for pedestrian, bicycle, and transit impacts. However, these impacts are generally evaluated based on whether a proposed project would: 1) conflict with existing or planned pedestrian, bicycle, or transit facilities and services, or 2) create substantive walking, bicycling, or transit use demand without providing adequate and appropriate facilities for non-motorized mobility. The existing amenities for pedestrians, bicycles, and transit users were inventoried to evaluate the quality and scope of facilities/services currently in place. The assessments of planned facilities were conducted using information in planning documents, such as the *Oahu Bike Plan (2012)* and the *North Shore Sustainable Communities Plan (2011)*. For these modes, if the proposed project is expected to conflict with existing or planned improvements to pedestrian and bicycle facilities, or if the project is expected to

generate a substantial demand which could warrant additional transit service, then the project would be determined to have a project-specific impact.

2.5 REPORT ORGANIZATION

This report is divided into eight chapters. The existing transportation system serving the project site and the current operating conditions of the key intersections are described in **Chapter 3** Existing Conditions. **Chapter 4** summarizes the methodologies used to forecast future cumulative project traffic volumes and the resultant forecasts, and presents the analysis for Near Term (2021) Baseline Conditions without the project. **Chapter 5** describes the project trip generation, distribution, and assignment used in the impact analysis. **Chapter 6** presents the analysis of the Near Term (2021) Plus Project Conditions, assesses any traffic impacts at study intersections, and identifies mitigation measures to address any project traffic impacts. **Chapter 7** assesses the project's site access, and **Chapter 8** includes an assessment of the potential future effect of the project on existing and future transit, bicycle, and pedestrian facilities.

3.0 EXISTING CONDITIONS

This chapter describes the existing roadway network and includes a discussion of the bicycle, pedestrian, and transit facilities located in the project study area. This chapter also includes a discussion of the existing intersection LOS results.

3.1 EXISTING TRANSPORTATION FACILITIES

A comprehensive data collection effort was undertaken to identify existing transportation conditions in the vicinity of the proposed project. The assessment of existing conditions relevant to this study includes an inventory of the street system, traffic volumes on these facilities, and operating conditions at key intersections. Existing public transit service and bicycle and pedestrian facilities are also described.

3.1.1 EXISTING ROADWAY SYSTEM

The key roadways providing access to or in the vicinity of the site are described below. **Figure 1** illustrates the proposed project location and the surrounding roadway system.

Kamehameha Highway (Highway 83) is operated and maintained by Hawaii Department of Transportation (HDOT) and is a two-lane highway makai of the project site. Kamehameha Highway extends across Oahu beginning at the Nimitz Highway junction near Daniel K. Inouye International Airport, circles the island, and ultimately terminates at Pali/Kalanianaole Highway intersection in Kaneohe. The posted speed limit is 35 miles per hour (mph) within the study area.

Pupukea Road is a two-lane, nearly three-mile long, mauka-makai roadway providing access to numerous homes and effectively operating as a long cul-de-sac street. Pupukea Road provides access between Kamehameha Highway and the mauka residential neighborhoods, as well as direct access to the existing Foodland grocery store via an existing driveway. The posted speed limit on this street is 25 mph, and the intersection at Kamehameha Highway is controlled by a traffic signal with separate turn lanes.

3.1.2 EXISTING TRANSIT FACILITIES AND SERVICES

TheBus is the main public transportation service on the Island of Oahu, where it served over 69 million riders in the fiscal year of 2015-2016. A fleet of 542 buses transports over 216,000 riders a week via fixed-route, express, and paratransit service. Route 55 and Route 88A are the two regular service bus routes which pass by the project site along Kamehameha Highway. In the westbound direction, Route 55 starts in Ala Moana,

east of Downtown Honolulu, and travels through Kaneohe, and along Kamehameha Highway where it passes immediately adjacent to the project site and continues south to Haleiwa. Complementary eastbound service is also provided in the reverse direction. Route 88A (North Shore Express) traverses the perimeter of the Island starting in Aiea and travels northwest through the project site, and around the northern and eastern perimeter of Oahu where it terminates in downtown Honolulu. The existing transit schedules are summarized in **Table 3**.

TABLE 3: EXISTING TRANSIT SERVICES

Route	From	To	Weekdays			Weekends	
			Operating Hours[1]	Headway (Minutes)[2]		Operating Hours[1]	Headway (Minutes)[2]
				Peak	Midday		
55	Ala Moana (Honolulu)	Haleiwa	4:00 AM to 12:30 AM	30	30	4:30 AM to 12:20 AM	45 to 60
88A	Aiea or Wahiawa	Ala Moana Center or Downtown	3:51 AM to 6:47AM and 4:25 PM to 8:15 PM	40	-	No weekend service	

The two bus stops adjacent to the project site are located as follows: the northbound stop is located immediately north of the outbound Foodland driveway, and the southbound stop is located directly across the highway. The southbound stop includes a turnout lane, which allows southbound vehicles to pass the bus while it is stopped to load or unload passengers. Northbound vehicles must stop behind a bus while vehicles on the highway because it does encroach into the travel lane while stopped for passenger loading/unloading. **Figure 3** depicts the existing transit routes and bus stops near the project site.

Figure 3

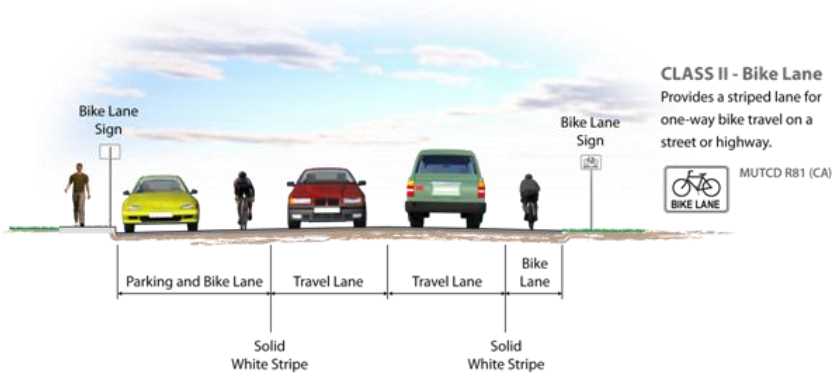
Existing Transit Facilities

3.1.3 EXISTING BICYCLE FACILITIES AND ACTIVITY

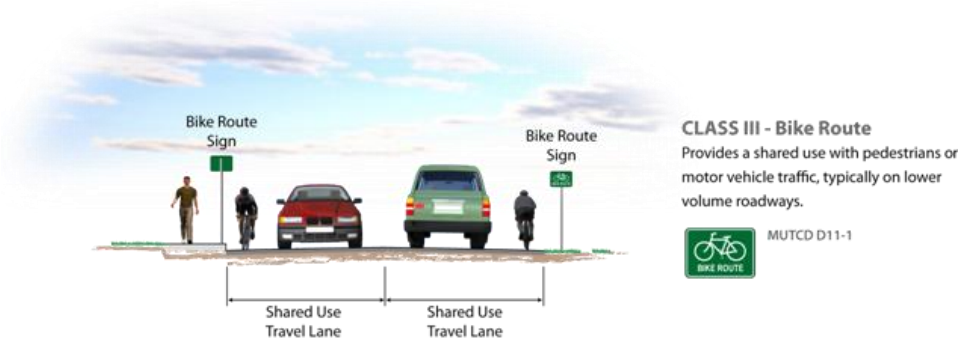
Bicycle facilities generally consist of three types, which are outlined below:

- *Bike or Shared Use Paths* provide a completely separate right-of-way and is designated for the exclusive use of bicycles and pedestrians with vehicle and pedestrian cross-flow minimized. Generally, the recommended pavement width for a two-directional shared use path is ten (10) feet.

- *Bike Lanes* provide a restricted right-of-way and are designated for the use of bicycles with a striped lane on a street or highway. Bicycle lanes are generally five (5) feet wide. Adjacent vehicle parking and vehicle/pedestrian cross-flow are permitted.



- *Bike Route or Signed Shared Roadways* provide for a right-of-way designated by signs or shared lane pavement markings, or "sharrows," for shared use with pedestrians or motor vehicles.



No separate bicycle paths or lanes are provided within the immediate vicinity of the project site. However, southbound bicyclists can use the parking lane located on the mauka side of the highway located north of the Sunset Beach Fire Station. This lane serves as a defacto extension of the Ke Ala Pupukea Bike Path that ends just north of Puula Road, and it allows cyclists to travel separately from vehicles on the highway. Northbound cyclists along this section of highway technically have to share the roadway, although some northbound cyclists were observed traveling the opposite direction of traffic in the parking lane during the field review. In addition, cyclists can use the parking lot and path through Pupukea Beach Park south of Pupukea Road to travel parallel to the highway until the path terminates at the south end of Three Tables Beach south of Kapuhi Street.

Based on peak period counts conducted during at the same time as traffic counts, the number of cyclists at the Pupukea Road/Kamehameha Highway intersection ranged from two to 14 during the weekday midday and PM peak hours, respectively, while the Saturday midday count was 12 cyclists.

3.1.4 EXISTING PEDESTRIAN FACILITIES AND ACTIVITY

Pedestrian facilities consist of sidewalks, crosswalks, and pedestrian signals at signalized intersections. No existing pedestrian sidewalks are provided on Kamehameha Highway, in the immediate vicinity of the project site. Crosswalks are provided across three of the four legs of the signalized intersection of Kamehameha Highway and Pupukea Road, with no crosswalk provided across the south leg of the highway. The intent of this is presumably to minimize conflicts between pedestrians and westbound vehicles turning left from Pupukea Road onto southbound Kamehameha Highway. However, the lack of a fourth crosswalk will inadvertently encourage pedestrians, who would normally be on the southwest and southeast corners of the intersection, to cross the highway at other locations to get to and from the beach park instead of traversing the three other signalized crossings.

Pedestrian counts during the peak periods showed that the highest volumes occurred during the Saturday midday peak hour with 48 people crossing at the Pupukea Road/Kamehameha Highway intersection. Counts were lower on the weekday with nine (9) and 12 pedestrians crossing at this location during the weekday midday and PM peak hours, respectively. The existing pedestrian LOS for pedestrians crossing Kamehameha Highway is LOS F during the midday and PM peak hours.

Though parking is currently provided on site, some travelers to the site park on the highway despite the "No Parking" signs, and cross between the Pahoe Road and Pupukea Road intersections to visit the existing uses. While pedestrians only have to cross two travel lanes and vehicle speeds are moderate along this section, this pattern is not desirable from a safety perspective. While formal counts were not conducted at

the Pahoe Road intersection or along the segment south of this street, the number of pedestrians crossing the highway during the Saturday peak hour was estimated to be in excess of 60.

3.2 EXISTING INTERSECTION VOLUMES/LANE CONFIGURATIONS

The operations of the two existing study intersections were evaluated during weekday peak periods (11:00 AM – 2:00 PM and 3:00 PM – 6:00 PM) and Saturday peak period (11:00 AM – 2:00 PM) conditions. Traffic counts were collected during the weekday midday and PM peak periods at the study intersections in November 2016 during the Haleiwa Surf Competition and when local schools were in session. The weekday midday peak hour of traffic for the study area generally occurred between the hours of 1:00 PM to 2:00 PM. During the weekday evening, the PM peak hour of traffic generally occurred between the hours of 4:00 PM to 5:00 PM. The Saturday peak period generally occurred between 12:00 PM to 1:00 PM.

Existing lane configurations and signal controls were obtained through field observations. **Figure 4** presents the existing Midday, PM peak-hour, and Saturday turning movement volumes, corresponding lane configurations, and traffic control devices. Raw traffic count data sheets are provided in **Appendix A**.

Legend

1 (1) [1] = MID (PM) [SAT]

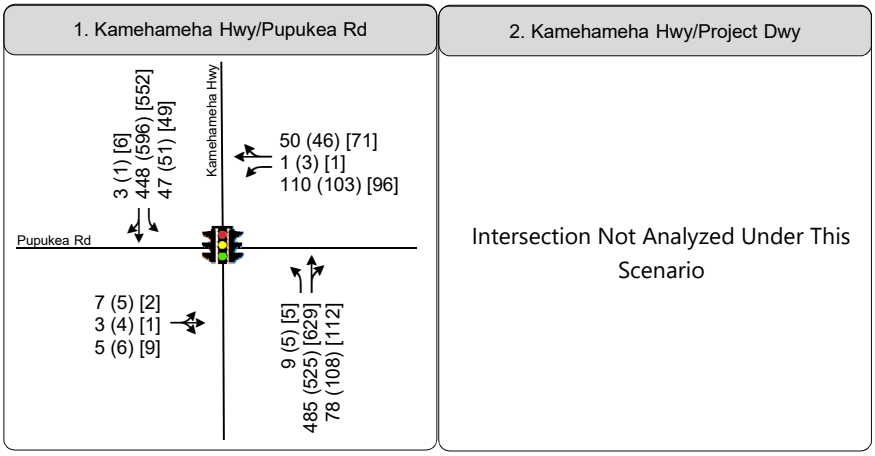


Figure 4

Peak Hour Traffic Volumes & Lane Configurations
Existing Conditions

3.3 FIELD OBSERVATIONS

Field observations were conducted to identify existing traffic operational deficiencies and to confirm the accuracy of calculated LOS. The purpose of this effort was to (1) to identify any existing traffic problems that may not be directly related to intersection level of service and (2) to identify any locations where the LOS calculation does not accurately reflect level of service in the field. Field observations were conducted on a Friday and Saturday in mid-November 2016, as well as on a week midday in August 2016. During the time of the November observations, the Haleiwa Surf Competition occurred, so those observations reflect the higher traffic volumes that can occur on select days during winter months with surf competitions and larger surf.

Vehicle queues, pedestrian activity, and parking on Kamehameha Highway were observed from south of Pupukea Road to north of Pahoe Road, as well as on Pupukea Road from Kamehameha Highway to the Foodland driveway. During all peak hours, slow moving northbound queues were observed on Kamehameha Highway south of Pupukea Road. This queue extended approximately 900 feet south of Pupukea Road; however, the queue would still be served within one signal cycle at Pupukea Road, and the actual vehicle delay experienced by drivers stopping was not excessive.

Pedestrian activity was observed on Kamehameha Highway where pedestrians would cross the highway at several locations including at Pahoe Road to travel between the beach and shoulder parking areas and existing uses on the site. This pedestrian activity, combined with vehicles parallel parking on the makai side of the highway, periodically resulted in some temporary slowing of vehicle travel along the project's frontage. It is important to note that during the highest-peak times of the peak hour (i.e. surf competitions high surf), vehicle queues on Kamehameha Highway in Pupukea have been observed to extend past the roadway curve on Kamehameha Highway (near Saints Peter and Paul Mission) and vehicle's experience an increase in delay by a couple of minutes along the highway. This occurred a few times within the peak hours; however, during the majority of the peak hour, traffic flowed freely on Kamehameha Highway and minimal vehicle delay was experienced along the corridor.

The traffic on Pupukea Road was generally free-flowing during all peak hours. Minor makai-bound vehicle queues (i.e., fewer than five cars) were observed at the signalized Kamehameha Highway, but these queues were served within one signal cycle.

3.4 EXISTING INTERSECTION LEVELS OF SERVICE

Peak hour intersection capacity analysis was performed for the study intersections using the methodology described above and the recently collected traffic count data. **Table 4** below shows the results of the intersection operations analysis for Existing Conditions, and the detailed LOS Worksheet can be found in **Appendix B**.

TABLE 4: EXISTING (2016) INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control	Peak Hour	Delay (sec/veh)[1]	LOS[1]
1. Kamehameha Hwy/Pupukea Rd	Signal	MID	7.3	A[2]
		PM	6.9	A[2]
		SAT	8.4	A[2]

Source: Fehr & Peers, 2017

Notes:

[1] Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized and all-way stop-controlled intersections. The vehicular delay for the worst movement is reported for side-street stop-controlled intersections.
2 During select peak times during the year, drivers do experience temporary delays approaching and traveling through this intersection. However, the overall operations during typical conditions meet or exceed the State of Hawaii DOT and City & County of Honolulu's minimum desirable operating level of LOS D.

Table 4 shows the Kamehameha Highway/Pupukea Road intersection currently operates at the minimum desirable operating level of LOS D during the Midday, PM, and Saturday peak hours. As noted under field observations, drivers do experience temporary delays at this intersection during some periods of the peak summer and surf seasons. However, the typical operations at this location during the study time periods include limited delays and meet or exceed the desirable operating level of LOS D.

3.5 EXISTING FOODLAND TRUCK DELIVERIES

Foodland truck deliverers are provided access to the mauka side of the building from a driveway off Pupukea Road. There are approximately 40 to 60 daily deliveries occurring six (6) days of the week (i.e. Monday thru Saturday). The trucks include large vendor trucks and small two-axle trucks. The busiest delivery days are Monday, Wednesday, and Friday, with the peak delivery period occuring between 10 AM to 12 PM. Due to the length of some of the delivery trucks, it requires multiple maneuvers to reverse in or out of the driveway, which results in intermittent delays for Pupukea residents from the truck blocking traffic in both directions on Pupukea Road.

4.0 NEAR TERM (2021) BASELINE CONDITIONS

To evaluate the potential impacts of traffic generated by the proposed project on the surrounding street system, it was necessary to first develop estimates of future traffic conditions in the area without the project. Future traffic conditions without the project reflect traffic increases due to regional growth and development, as well as traffic increases generated by other specific developments near the project site. This scenarios referred to as baseline or "no project" conditions. The forecasted future traffic volumes were then used as a baseline to identify impacts on the roadway system from the project. Development of this future traffic scenario is described in this chapter.

4.1 NEAR TERM (2021) TRAFFIC ESTIMATES

The following section summarizes the growth assumptions used to estimate the amount of traffic that would be adding to existing intersection volumes to develop volume estimates for Near Term (2021) Conditions.

4.1.1 AREAWIDE OR AMBIENT TRAFFIC GROWTH

A growth factor was individually applied to the traffic of each intersections approach to account for future regional growth. Initially, historic HDOT traffic counts of the roadway system in the study area from 2013, 2014, 2015, and 2016 were compared to identify the amount of growth for this area in the near term. However, the review of these volumes did not reveal a clear trend in the roadway system's growth as some of the annual fluctuations in volumes were negative from one year to the next , positive during subsequent years, then negative again up to the latest year, 2016. Accordingly, a one percent (1%) annual growth factor was applied to the existing intersection traffic volumes collected in mid-November 2016 to assume some level of regional growth and to provide a more conservative analysis. This growth rate is considered and reasonable given the built out nature of the Pupukea neighborhood and the limited planned development in the greater North Shore area. This growth rate was compounded over the five-year timeframe (2016 to 2021) when full development of the proposed project is anticipated.

4.1.2 FUTURE TRANSPORTATION IMPROVEMENTS

No transportation infrastructure improvements are planned in the immediate study area. Therefore, the intersection lane configurations and traffic control devices are expected to remain the same as under Existing Conditions.

Figure 5 shows the peak hour traffic volumes for the Near Term (2021) Baseline Conditions.

Legend

1 (1) [1] = MID (PM) [SAT]

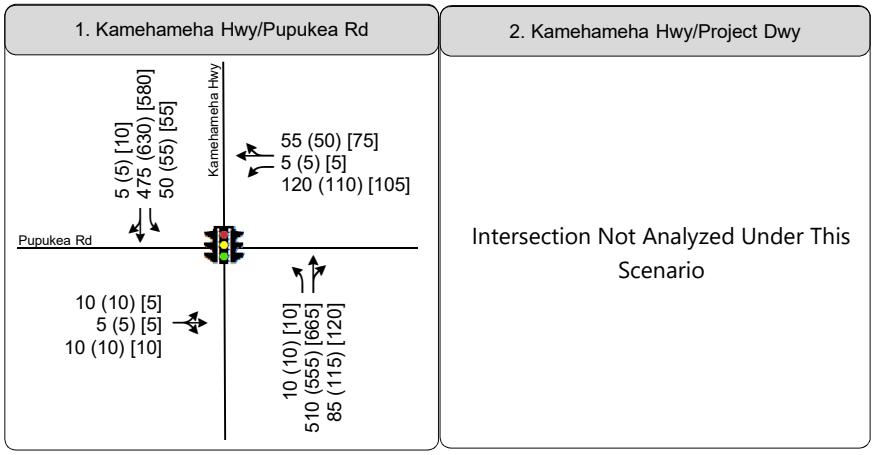


Figure 5

Peak Hour Traffic Volumes & Lane Configurations
Near Term (Year 2021) Baseline

4.2 NEAR TERM (2021) BASELINE LEVELS OF SERVICE

Levels of service calculations were conducted to evaluate the operating levels of the study intersections under Near Term (2021) Baseline Conditions based on the anticipated growth in traffic. The results of the LOS analysis are presented in **Table 5.** The corresponding LOS calculation sheets are included in **Appendix C.**

TABLE 5: NEAR TERM (2021) BASELINE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control[1]	Peak Hour	Delay (sec/veh)[1]	LOS[2]
1. Kamehameha Hwy/Pupukea Rd	Signal	MID	8.1	A
		PM	7.6	A
		SAT	9.2	A

Source: Fehr & Peers, 2017

Notes:

[1] Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized and all-way stop-controlled intersections. The vehicular delay for the worst movement is reported for side-street stop-controlled intersections.

The analysis results indicate that the Kamehameha Highway/Pupukea Road intersection is forecasted to operate at desirable levels (i.e. LOS D or better) under Near Term (2021) Baseline Conditions. The changes in operations from Existing Conditions are the result of the addition of ambient traffic growth.

5.0 PROJECT TRAFFIC ESTIMATES

This section describes the anticipated number of vehicle trips and directionality of those trips that would result from implementation of the proposed project. Future traffic added to the roadway system by the project is estimated using a three-step process: (1) project trip generation, (2) trip distribution, and (3) trip assignment. The first step estimates the amount of project-generated traffic that would be added to the roadway network. The second step estimates the direction of travel to and from the project site. The new trips are assigned to specific street segments and intersection turning movements during the third step. This process is described in more details in the following sections.

5.1 PROJECT TRIP GENERATION ESTIMATES

Vehicle trip rates presented in *Trip Generation 9th Edition* (Institute of Transportation Engineers, 2012) were used to estimate the number of trips to and from the proposed project site. "Specialty Retail Center" rates were used to develop the project's trip generation. This land use type was determined to be applicable to the type of tenants and character of the proposed project. Since specialty retail does not provide rates for weekday midday or Saturday rates, the weekday PM peak hour rates were used for the weekday midday time period, and the Saturday rates were developed by applying the "Shopping Center's" PM to Saturday peak hour ratio to the Specialty Retail Center PM peak hour rate.

A pass-by reduction of 30 percent was also applied to the gross vehicle trip estimate. Pass-by trips will be made by those vehicles already passing by the site on Kamehameha Highway, where those vehicles will simply turn into and out of the site during the course of a trip that is already being made. In this case, these trips are not new trips generated by the site or new to the roadway network, but still comprise a portion of site-generated traffic at the project driveway. To provide a conservative estimate of project-generated traffic, the trips generated by the existing uses (i.e. food trucks, real estate office, and clothing store) were not credited or removed from the project trip estimate. The final trip generation estimate for the proposed project are shown in **Table 6.**

As shown in **Table 6**, the project is estimated to generate a total of 926 net new daily vehicle trips, 65 net new peak hour trips (29 inbound/36 outbound) during each of the midday and PM peak hours, and 98 Saturday midday peak hour trips (51 inbound/47 outbound). These are the new trips that are estimated to be added to the highway and Pupukea Road with development of the project site as proposed. The *total* number of project trips turning into and out of the site driveways is 1,322 daily trips, 93 midday/PM peak hour trips, and 140 Saturday midday peak hour trips.

TABLE 6: PROJECT TRIP GENERATION ESTIMATES

Land Use	Quantity	Units[1]	Daily[2]	MIDDAY/PM Peak Hour			Saturday Peak Hour[3]		
				In	Out	Total	In	Out	Total
Specialty Retail	30	ksf	1,322	41	52	93	73	67	140
Retail Pass-By (30%)			*-396*	*-12*	*-16*	*-28*	*-22*	*-20*	*-42*
NET NEW VEHICLE TRIPS			**926**	**29**	**36**	**65**	**51**	**47**	**98**

Source: Fehr & Peers, 2017
Notes:
[1] ksf = 1,000 square feet
[2] Based on best fit equation rates from *ITE Trip Generation (*9th Edition)
Daily: T = 81.02(x) – 150.75
MID/PM: T = 2.4(x) + 21.48
[3] Based on Shopping Center's PM to SAT ratio, which is 1.5. Applied this ratio to the PM specialty retail trips to yield Saturday estimates.

5.2 PROJECT TRIP DISTRIBUTION AND ASSIGNMENT

The distribution of traffic generated by the project onto the roadway system was based on the locations of complimentary uses and existing traffic volumes including those at the Foodland driveways. Based on these factors, the vehicle trip distribution of the project-generated traffic is estimated to be:

- 50% to/from the North on Kamehameha Highway
- 35% to/from the South on Kamehameha Highway
- 15% to/from the East on Pupukea Road

Figure 6 illustrates the project trip distribution pattern described above.

As described in the *Project Description* section (2.1), access to the proposed project would be provided at one consolidated full-access driveway with the project and Foodland on Kamehameha Highway, approximately 210 feet north of Pupukea Road. The two existing Foodland driveways would be closed to reduce the total number of access points on the highway, and internal connections will be made between the project site and Foodland parcels to allow Foodland traffic to use the new project driveway on the highway or the existing Pupukea Road driveway. It is assumed that with the driveway consolidation, some of the Foodland trips (specifically the trips that originated/destined from south Kamehameha Highway) that

originally entered/exited the site from Kamehameha Highway would shift to the Pupukea Road driveway. This travel pattern is reasonable to assume for Foodland trips since the Pupukea Road driveway would serve less vehicle volume than the new Kamehameha Highway driveway and it would provide vehicles trying to access Kamehameha Highway a controlled movement at the Pupukea Road signal, instead of waiting for gaps in traffic on the Highway from the side-street-stop-controlled project driveway.

Using the estimated trip generation and the distribution patterns discussed, the traffic generated by the proposed project was assigned to the study intersections and the individual turning movements. **Figure 7, 8, and 9** shows the assignment of trips generated by the project for Midday, PM peak hour, and Saturday conditions, respectively.

Figure 6

Trip Distribution

Legend

Project Trip Assignment + **Existing Foodland Trip Reassignment** = **Project w/ Net New Trips**

**Pupukea Rd/Foodland Dwy is not a study intersection

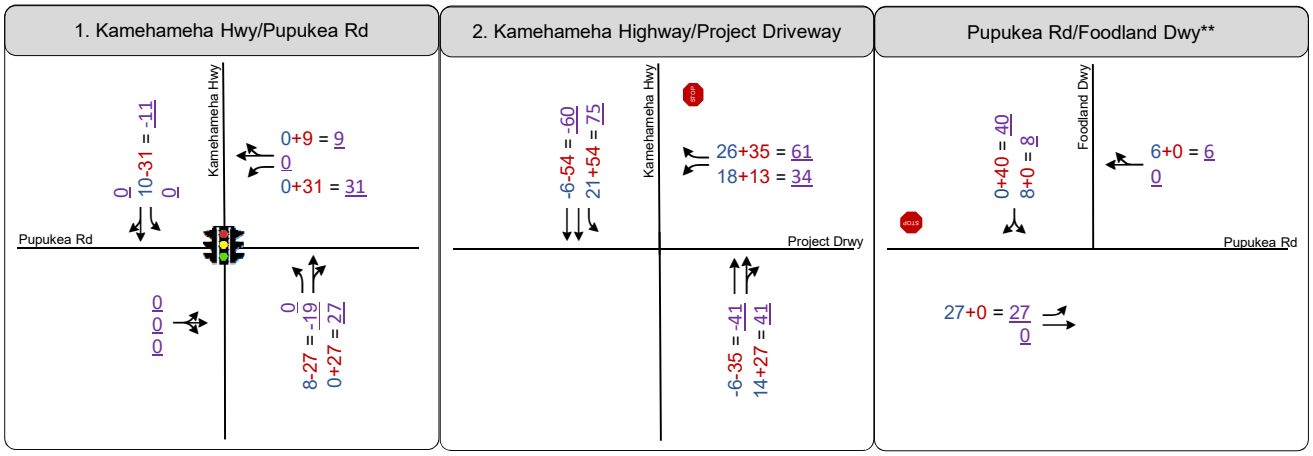


Figure 7

Peak Hour Traffic Volumes & Lane Configurations
Weekday Midday Project Trip Assignment

Legend

Project Trip Assignment + Existing Foodland Trip Reassignment = Project w/ Net New Trips

**Pupukea Rd/Foodland Dwy is not a study intersection

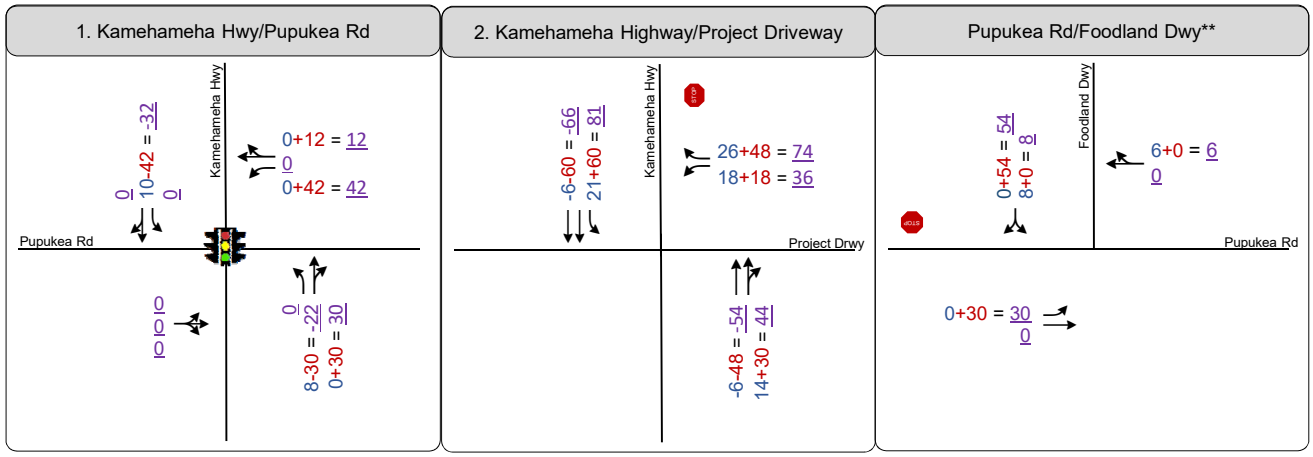


Figure 8

Peak Hour Traffic Volumes & Lane Configurations
Weekday PM Project Trip Assignment

Legend

Project Trip Assignment + **Existing Foodland Trip Reassignment** = **Project w/ Net New Trips**

**Pupukea Rd/Foodland Dwy is not a study intersection

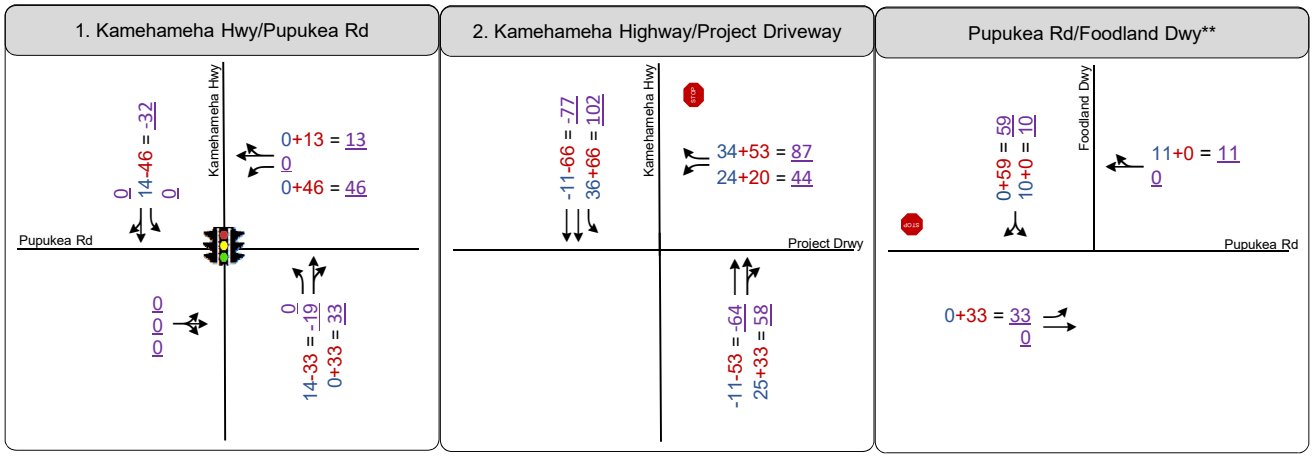


Figure 9

Peak Hour Traffic Volumes & Lane Configurations
Saturday Project Trip Assignment

6.0 NEAR TERM (2021) PLUS PROJECT CONDITIONS

This section summarizes and presents an analysis of the potential impacts on the roadway system due to projected increases in traffic, including traffic generated by the project in 2021. The Near Term (2021) roadway network is the same network assumed under the baseline scenario. The analysis compares the project levels of service at each study intersection under future baseline conditions against the "Plus Project" scenario to determine potential Near Term impacts.

6.1 PROPOSED TRANSPORTATION IMPROVEMENTS

As noted under Section 2.1: Project Description, the project will construct a new two-way driveway on Kamehameha Highway approximately 215 feet north of Pupukea Road. With construction and opening of the new site driveway, the project will close the two existing driveways serving the Foodland parcel located immediately south of and adjacent to the site. This will reduce the number of existing "conflict points" on the highway from two to one and will focus site traffic and a portion of Foodland traffic at this new, single location. To allow Foodland patrons to use the new driveway, the project will create two new internal drive aisle connections.

With reconfiguration of the driveways and access, Foodland-generated traffic volumes at the Kamehameha Highway driveway would change slightly. Specifically, most of the vehicles traveling to and from the south would shift to the Pupukea Road intersection. However, some vehicles would use the site new driveway including those driven by visitors that see the building from the roadway and decide to patronize the store.

As part of the project, the section of Kamehameha Highway between Pupukea Road and Pahoe Road will be widened and re-striped to add a center two-way left-turn lane. This lane will be approximately 270 feet long and will lead into the southbound left-turn lane at Pupukea Road. With this new lane and added capacity, vehicles turning left into or out of the new project driveway will have an area to wait for a gap in traffic allowing them to cross or merge into traffic (depending on their direction of travel). This will also help to enhance safety by moving some of these existing movements out of the southbound left-turn pocket at Pupukea Road, which should not be used for merging maneuvers for southbound traffic. It should be noted that widening the pavement section would reduce the roadway shoulder widths to regulated standards and would discourage on-street parking.

6.2 NEAR TERM (2021) PLUS PROJECT INTERSECTION LEVEL OF SERVICE

With implementation of the proposed project, the two study locations under this scenario included both the Pupukea Road and the project driveway intersections on Kamehameha Highway.

To forecast the peak hour operating conditions at each study intersection, the project trip assignment and Foodland trip re-assignment was superimposed on Near Term (2021) Baseline traffic volumes to yield Near Term (2021) Plus Project volumes. **Figure 10** presents the anticipated Near Term (2021) Plus Project Midday, PM, and Saturday peak hour volumes. The volumes on **Figure 10** were used to analyze operations using the aforementioned LOS methodology. The results of the LOS analysis for the study intersections are presented in **Table 7**, and detailed LOS results for intersection movements and corresponding LOS calculation sheets are included in **Appendix C**.

TABLE 7: NEAR TERM (2021) BASELINE INTERSECTION LEVELS OF SERVICE

Intersection	Traffic Control[1]	Peak Hour	Near Term Baseline		Near Term Plus Project		Delay Change
			Delay (sec/veh)[1]	LOS[2]	Delay (sec/veh)[1]	LOS[2]	
1. Kamehameha Hwy/Pupukea Rd	Signal	MID	8.1	A	9.6	A	1.5
		PM	7.6	A	9.2	A	1.6
		SAT	9.2	A	10.9	B	1.7
2. Kamehameha Hwy/Project Dwy/Foodland Dwy	Side Street Stop Control	MID	Driveway Does Not Exist Under This Scenario		24.1	C	24.1
		PM			23.5	C	23.5
		SAT			30.1	D	30.1

Source: Fehr & Peers, 2017.
Notes:
[1] Whole intersection weighted average stopped delay expressed in seconds per vehicle for signalized and all-way stop-controlled intersections. The vehicular delay for the worst movement is reported for side-street stop-controlled intersections.
[2] LOS calculations performed using the *Highway Capacity Manual (HCM) 2010* method. LOS for side street stop-controlled (SSSC) intersections is worst-case movement.

The results presented in **Table 7** indicate that under Near Term (2021) Plus Project conditions, all study intersections are anticipated to operate acceptably at LOS D or better under both peak hours.

Legend

1 (1) [1] = MID (PM) [SAT]

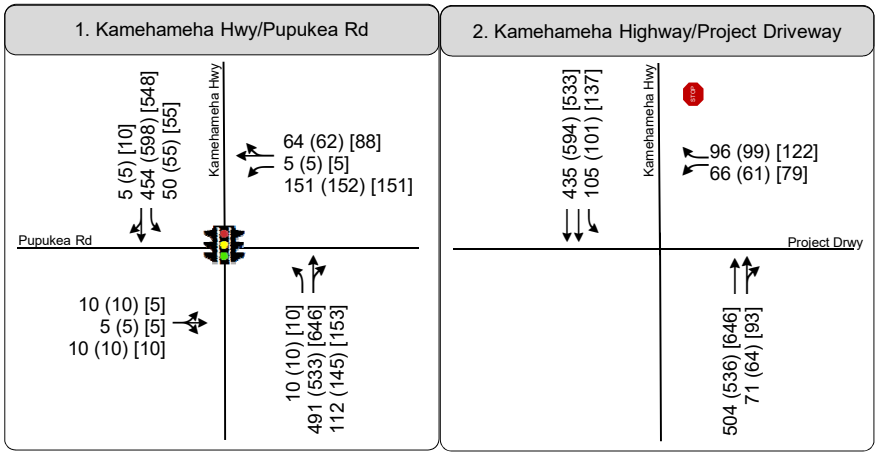


Figure 10

Peak Hour Traffic Volumes & Lane Configurations
Near Term (Year 2021) Plus Project

6.3 POTENTIAL TRAFFIC IMPACTS

Based upon HDOT and TRB significance criteria and the results of the operations analysis, the proposed project is not expected to result in a significant traffic impact to the surrounding roadway network. While the proposed project will add traffic to the highway and to Pupukea Road, the existing and new roadway capacity will allow the addition of vehicle trips to these roadways without substantially increasing travel times and delays for existing users on Kamehameha Highway. The provision of additional capacity on the highway will help to move existing (Foodland) and future turning vehicles out of the through lanes and expedite throughput in the area under typical traffic conditions. The existing traffic signal will help to provide gaps in traffic on the highway for vehicles turning into and out of the new site driveway and will continue to provide a controlled location of Pupukea Road neighborhood traffic.

During the peak surf and summer seasons, the intermittent congestion is expected to continue to occur regardless of project implementation. The additional turning capacity on the highway will help to minimize congestion and delays in the area. See Chapter 7 for a discussion of recommended pedestrian enhancements to enhance safety for people walking across the highway.

7.0 SITE ACCESS AND ON-SITE CIRCULATION

This chapter includes a review of the site access and on-site circulation for vehicles, bicyclists and pedestrians. An evaluation of off-site active and transit travel modes is presented in Chapter 8.

7.1 SITE ACCESS

Primary vehicle access to the site will be provided by the new driveway on Kamehameha Highway. The new site driveway on the highway is planned to include one inbound lane and two outbound lanes (i.e., one left-turn and one right-turn). Secondary access to the site will be available via the existing Foodland driveway on Pupukea Road, but a minimal amount of project traffic is expected to use the Foodland driveway and the two access connections between the adjacent parcels.

One potential site access issue was identified as part of this review. An on-site drive aisle parallel to the highway frontage is proposed to be located approximately 70 feet from the edge of the highway. Opposite the on-site drive aisle, a connection to the Foodland parking lot is also proposed. This intersection is assumed to be controlled by stop signs on the drive aisles and the main driveway approaches would not be controlled.

While this configuration is expected to generally operate acceptably at all times, it possible that an inbound vehicle in the driveway trying to turn left into the first on-site drive aisle could be temporarily delayed by: 1) temporary outbound vehicle queues extending past the drive aisle, or 2) waiting for a vehicle to exit a parking space near the driveway/drive aisle intersection. The potential concern is that this blockage could cause an inbound queue in the driveway and impede turns from the highway.

To eliminate the potential for this occurrence, the project proposes to install "No Left Turn" signage for inbound vehicles in the driveway at the first on-site drive aisle. Signs will be prominent and installed on both sides of the driveway to clearly delineate the prohibited movement to drivers.

Overall, the number of driveway and access connections will provide adequate capacity to serve project traffic, and no modifications to site access issues other than the "No Left Turn" signage are recommended.

7.2 ON-SITE VEHICLE CIRCULATION

The site plan includes two-way parking and drive aisles with no "dead-end" aisles, and the shorter aisle lengths are anticipated to reduce on-site vehicle speeds. All of the parking spaces can be readily accessed and are not expected to cause vehicle circulation problems. As such, no recommendations to on-site vehicle circulation are recommended.

7.3 ON-SITE PEDESTRIAN AND BICYCLE CIRCULATION

The site plan shows four distinct building areas including the Foodland store on the adjacent parcel. To highlight the presence of pedestrians and to guide people walking from building to building, high visibility crosswalks are recommended at several locations across the site. The location of these crosswalks and other off-site pedestrian enhancements are show on **Figure 11** in Chapter 8.

People on bicycles are also expected to access the project site from the adjacent neighborhoods, as well as riders on the highway and the paths located north and south of the site. While no separate paths need to be incorporated to the site, secure bike parking should be provided. At a minimum, this would include bike racks at several key locations to encourage the use of non-automobile travel. The final locations for bike racks will be determined by the project team in consultation with DPP staff.

7.4 FOODLAND DELIVERIES CIRCULATION

The Foodland deliveries would still occur on the mauka side of the building with the proposed project. As described in the *Existing Conditions* chapter (3), the truck deliveries currently cause intermittent vehicle delays on Pupukea Road due to trucks reversing in and out of the driveway.

Average daily traffic volumes were conducted on Pupukea Road in November 2016 for a period of 48-hours. The highest peak travel period occurred during the typical commute AM peak hour (7 AM – 8 AM) when residents from Pupukea traveled to work. The traffic on Pupukea Road generally remained high in the morning (before noon), and during the PM peak period (4 PM to 6 PM) when residents returned home from work.

Traffic on Pupukea Road is generally lower in the early afternoon (12 PM – 3 PM) compared to the AM and PM peak periods. Consequently, Foodland truck deliveries should be scheduled during the off-peak times in the early afternoon such that delays to vehicles traveling on Pupukea Road is minimized. Ideally, truck

deliveries would occur during the early morning (before the AM peak period) and late evening (after the PM peak period) when the traffic volumes on Pupukea Road are the lowest; however, that time period is usually outside of the truck delivery operations.

8.0 MULTIMODAL ASSESSMENT

The potential impact of the proposed project on the off-site pedestrian, bicycle and transit facilities and services is addressed in this chapter.

8.1 TRANSIT FACILITIES AND SERVICES

The existing northbound bus stop adjacent to the site will need to be relocated with construction of the new site driveway. One possible new location is the shoulder immediately north of Pupukea Road where the Foodland driveways will be closed. The benefits of this location include the proximity of the existing traffic signal that provides a controlled crossing of the highway and its consistency with the installation of far side intersection stops for bus operations. An alternate location is the shoulder length between the new site driveway and Pahoe Road. The advantage of this other location are that it is provides more space between the adjacent street and driveway, and that the downstream right-turn volume at Pahoe Road is expected to be substantially less than the downstream volume into the new driveway (which would be affected by buses stopping closer to Pupukea Road). Also, the area along the project site will be graded and will likely better accommodate a new shelter and waiting area for transit patrons.

While both locations would function well from a bus operations and patron access perspective, the location adjacent to Pupukea Road is generally preferred primarily because of its location next to the existing signal. For residents and visitors crossing the highway to get to the beach, this controlled crossing will provide adequate gaps in traffic and will clearly delineate rights-of-way for all users. It is possible that the existing curbs along the highway adjacent to Foodland will need to be modified to provide a turnout similar to those depending on the requirements of the City & County of Honolulu (DTS) Public Transit Division. A turnout would be beneficial so as to not impede northbound traffic during passenger loading/unloading activities. PTD staff will make the final determination on the ideal location for the relocated stop and for the need for a turnout.

8.2 BICYCLE FACILITIES

Bike Plan Hawaii (2003), a State master plan for bikeways, is intended to serve as one basis for future bikeway planning and development decisions on the North Shore. In addition, the Oahu Bike Plan (2012) provides guidance on desired bike facilities across the island of Oahu.

Within the project study area, Bike Plan Hawaii indicates Implementation of the proposed project is not expected to conflict with any existing or planned bicycle facility. Bicyclists will be able to access the site via the new site driveway or from the Ke Ala Pupukea Bike Path or adjacent pedestrian sidewalks along Kamehameha Highway leading to the site.

Ideally, the existing Ke Ala Pupukea Bike Path would be extended past or behind the Sunset Beach Fire Station and link with the parking area to the south to provide a more continuous off-street bike facility. Extension of the Ke Ala Pupukea Beach Path is included in the DOT Bike Plan, although Project 55 (Waimea Bay to Haleiwa Beach Park) does not appear to include this segment and is considered a long-term (priority III) project.

8.3 PEDESTRIAN FACILITIES

The project site is located on Kamehameha Highway on the North Shore of Oahu where the highway is bounded by unimproved shoulders and separate pedestrian facilities are not consistently provided along the length of the highway. For this project, a new pedestrian or shared-use path should be constructed along the entire length of the mauka side of the highway between Pupukea Road and Pahoe Road. This will provide visitors and local residents a separate facility to walk along this side of the highway to more readily access the new project uses, the Foodland store and the bus stop. In keeping with the rural nature of the North Shore, a separated, meandering, all-weather path (vs an attached concrete sidewalk) is recommended to designate a walking area and reduce the potential for crossing the highway between intersections (see sample in adjacent photo). The path should include a high visibility crosswalk across the new project site driveway.

With implementation of the project, the new uses are expected to attract some pedestrian traffic from the makai side of the freeway. To enhance safety at the Pahoe Road/Kamehameha highway intersection, DOT should consider approval of traffic control devices to provide gaps in traffic for pedestrian crossings without installing a typical traffic signal that may exacerbate delays for vehicle traffic. Additional parking for the Shark's Cove area is provided immediately adjacent to the Pahoe Road intersection and encouraging walking from this area would reduce the need for the project and Foodland patrons from having to get in their vehicles to access these uses.

Our XWalk+ tool was applied to aid in the identification of potential pedestrian improvements for this location, Fehr & Peers' XWalk+ tool was developed to guide the selection of candidate crosswalk treatments, and has a solid foundation in published research from the National Cooperative Highway Research Program (NCHRP) and Federal Highway Administration (FHWA), and it has been peer-reviewed by the ITE Pedestrian/Bicycle Council. Using simple inputs from a field survey, such as number of lanes, posted speed, and average daily traffic volumes, XWalk+ allows the user to identify candidate crosswalk treatments for mid-block and uncontrolled locations, and to understand the pros and cons of each treatment.

The results of this tool (as shown in **Appendix D**) identified overhead beacons or in-pavement lighting as the candidate improvements for this location based on the data inputs. The hourly pedestrian volume was varied from 40 to 80 persons and the results were the same: the pedestrian LOS would be F based on Year 2021 traffic volumes with the project, and other treatments for consideration included rectangular rapid flashing beacons (RRFBs). While the pedestrian LOS would remain the same as Existing Conditions, LOS F, due to the high peak hour traffic volumes on the two-lane highway; the pedestrian safety would be enhanced due to the increase in pedestrian visibility and driver awareness.

Given DOT's more recent use of RRFBs in multiple other locations on Oahu, this improvement paired with a high visibility crosswalk would enhance pedestrian safety and increase the awareness of the crossing to approaching drivers. The project sponsor would be responsible for the design and installation of the RRFBs and crosswalk upon review and approval of DOT Highways Division staff.

Ultimately, implementation of these multi-modal recommendations are dependent on the appropriate State and County agency. **Figure 11** shows the recommended multimodal enhancements on and off the project site.

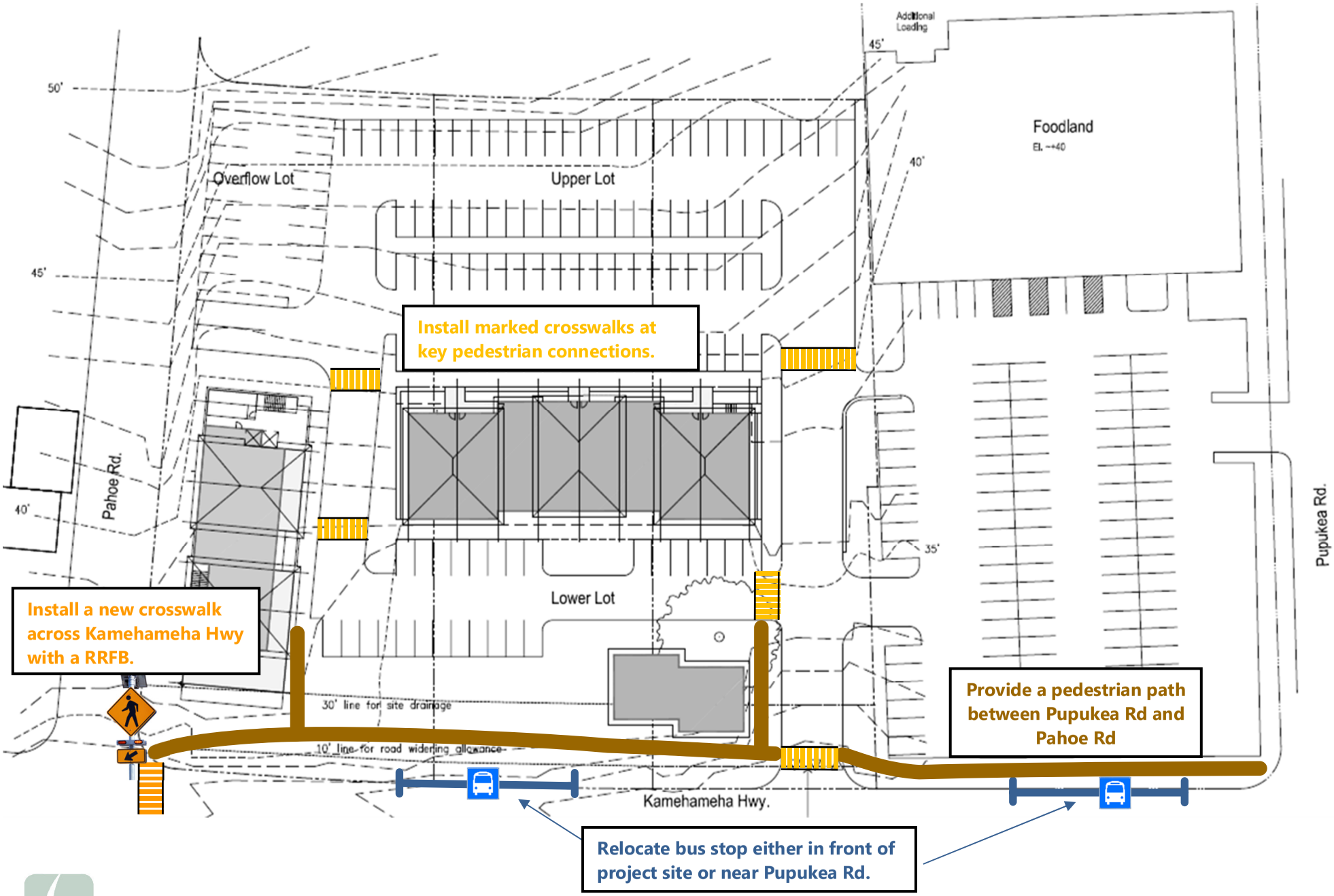


Figure 11

Recommended On and Off Site Multimodal Enhancements

APPENDIX A: TRAFFIC COUNT DATA

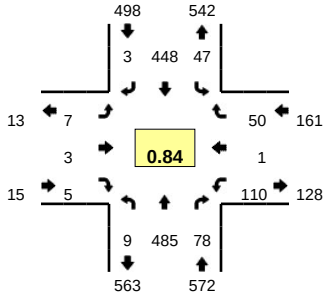
Type of peak hour being reported: Intersection Peak

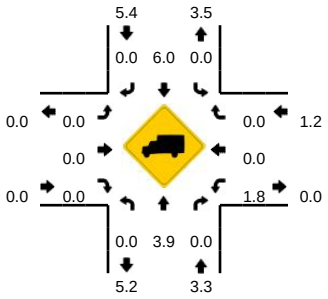
Method for determining peak hour: Total Entering Volume

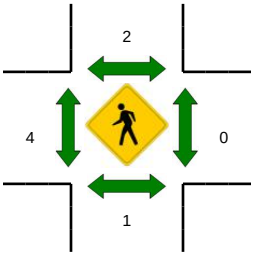
LOCATION: Kamehameha Hwy -- Pupukea Rd
CITY/STATE: Haleiwa, HI

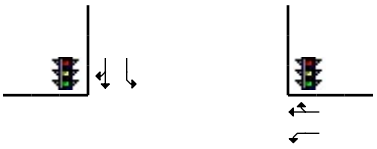
QC JOB #: 13956401
DATE: Thu, Nov 17 2016

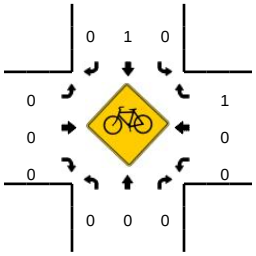
Peak-Hour: 12:50 PM -- 1:50 PM
Peak 15-Min: 1:35 PM -- 1:50 PM

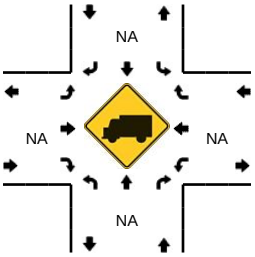


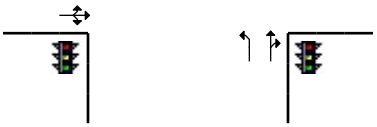


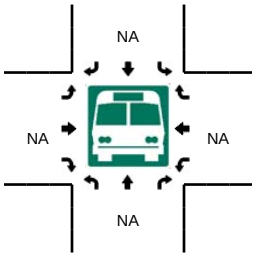












5-Min Count Period Beginning At	Kamehameha Hwy (Northbound)				Kamehameha Hwy (Southbound)				Pupukea Rd (Eastbound)				Pupukea Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	1	41	6	0	3	26	1	0	0	0	0	0	8	0	7	0	93	1127
12:05 PM	0	36	7	0	1	51	0	0	0	0	0	0	10	1	6	0	112	1153
12:10 PM	0	36	8	0	5	39	1	0	1	0	0	0	9	0	4	0	103	1135
12:15 PM	0	35	9	0	3	37	0	0	0	0	0	0	7	0	1	0	92	1152
12:20 PM	0	34	8	0	3	53	0	0	0	0	0	0	11	0	2	0	111	1153
12:25 PM	0	32	7	0	3	23	1	0	0	0	0	0	9	1	6	0	82	1163
12:30 PM	0	47	9	0	3	41	0	0	1	0	0	0	6	0	4	0	111	1165
12:35 PM	3	27	5	0	4	43	0	0	2	0	0	0	9	0	2	0	95	1163
12:40 PM	0	57	3	0	1	28	0	0	1	0	0	0	4	0	3	0	97	1182
12:45 PM	2	34	9	0	4	32	0	0	0	0	1	0	7	0	4	0	93	1158
12:50 PM	1	41	2	0	6	38	1	0	0	1	1	0	17	0	1	0	109	1171
12:55 PM	0	46	6	0	4	37	0	0	0	0	1	0	10	0	2	0	106	1204
1:00 PM	1	39	8	0	4	27	1	0	0	0	1	0	8	0	4	0	93	1204
1:05 PM	1	40	5	0	3	34	0	0	1	0	0	0	9	0	2	0	95	1187
1:10 PM	1	41	8	0	5	43	0	0	0	0	1	0	10	0	3	0	112	1196
1:15 PM	1	34	7	0	7	26	0	0	2	0	0	0	8	0	7	0	92	1196
1:20 PM	0	42	10	0	0	27	0	0	1	0	0	0	6	0	1	0	87	1172
1:25 PM	1	43	6	0	2	28	1	0	0	1	0	0	7	0	5	0	94	1184
1:30 PM	0	34	7	0	4	25	0	0	0	0	0	0	10	1	5	0	86	1159
1:35 PM	1	37	10	0	2	53	0	0	1	0	0	0	9	0	7	0	120	1184
1:40 PM	1	48	2	0	7	50	0	0	2	1	1	0	7	0	8	0	127	1214
1:45 PM	1	40	7	0	3	60	0	0	0	0	0	0	9	0	5	0	125	1246
1:50 PM	0	40	7	0	3	28	1	0	0	0	1	0	9	0	7	0	96	1233
1:55 PM	1	33	10	0	0	27	0	0	0	0	1	0	2	1	7	0	82	1209

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	12	500	76	0	48	652	0	0	12	4	4	0	100	0	80	0	1488
Heavy Trucks	0	8	0		0	52	0		0	0	0		0	0	0		60
Pedestrians		4				4				8				0			16
Bicycles	0	0	0		0	0	0		0	0	0		0	0	0		0
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2016 3:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

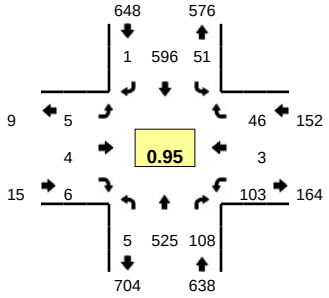
Type of peak hour being reported: Intersection Peak

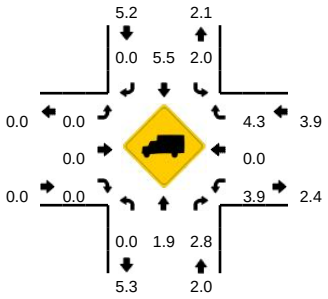
Method for determining peak hour: Total Entering Volume

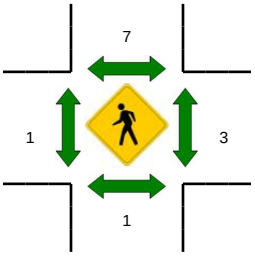
LOCATION: Kamehameha Hwy -- Pupukea Rd
CITY/STATE: Haleiwa, HI

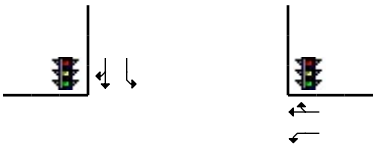
QC JOB #: 13956402
DATE: Thu, Nov 17 2016

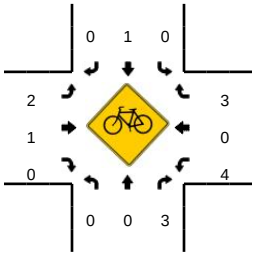
Peak-Hour: 3:00 PM -- 4:00 PM
Peak 15-Min: 3:00 PM -- 3:15 PM

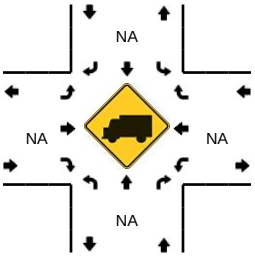


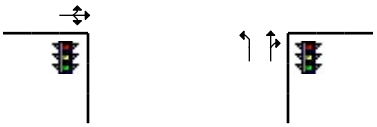


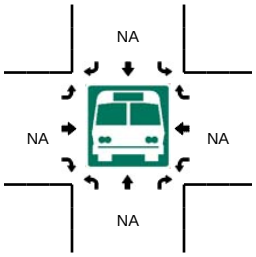












5-Min Count Period Beginning At	Kamehameha Hwy (Northbound)				Kamehameha Hwy (Southbound)				Pupukea Rd (Eastbound)				Pupukea Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
3:00 PM	0	51	7	0	3	61	1	0	1	0	1	0	10	0	5	0	140	
3:05 PM	2	49	6	0	8	58	0	0	1	0	0	0	7	0	4	0	135	
3:10 PM	0	33	6	0	6	48	0	0	1	0	1	0	8	0	3	0	106	
3:15 PM	1	49	9	0	6	54	0	0	0	0	0	0	8	0	3	0	130	
3:20 PM	0	42	4	0	5	46	0	0	0	2	0	0	9	0	7	0	115	
3:25 PM	0	40	11	0	2	42	0	0	0	0	1	0	9	0	1	0	106	
3:30 PM	0	47	8	0	3	52	0	0	0	0	2	0	8	0	6	0	126	
3:35 PM	1	42	10	0	5	36	0	0	2	1	0	0	11	0	4	0	112	
3:40 PM	0	42	11	0	3	51	0	0	0	0	0	0	7	0	3	0	117	
3:45 PM	0	36	16	0	3	61	0	0	0	0	1	0	10	1	2	0	130	
3:50 PM	1	43	15	0	5	41	0	0	0	0	0	0	7	1	4	0	117	
3:55 PM	0	51	5	0	2	46	0	0	0	1	0	0	8	1	4	1	119	1453
4:00 PM	0	44	11	0	5	50	1	0	1	0	0	0	4	0	6	0	122	1435
4:05 PM	0	34	13	0	6	36	0	0	0	0	1	0	13	0	9	0	112	1412
4:10 PM	1	45	11	0	6	33	0	0	0	0	0	0	8	0	10	0	114	1420
4:15 PM	0	47	13	0	2	47	0	0	0	0	0	0	7	1	8	0	125	1415
4:20 PM	0	41	15	0	4	42	0	0	1	0	0	0	11	0	3	0	117	1417
4:25 PM	0	52	6	0	6	45	0	0	0	0	0	0	6	0	4	0	119	1430
4:30 PM	0	34	10	0	7	39	0	0	0	0	0	0	5	1	11	0	107	1411
4:35 PM	0	46	10	0	5	54	0	0	0	0	0	0	13	0	3	0	131	1430
4:40 PM	1	42	13	0	1	44	0	0	0	1	0	0	12	0	4	0	118	1431
4:45 PM	2	37	16	0	12	38	0	0	0	0	0	0	6	1	7	0	119	1420
4:50 PM	0	44	16	0	5	30	0	0	1	0	0	0	9	0	2	0	107	1410
4:55 PM	1	39	18	0	8	32	0	0	1	0	0	0	12	0	2	0	113	1404

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	8	532	76	0	68	668	4	0	12	0	8	0	100	0	48	0	1524
Heavy Trucks	0	8	4		4	36	0		0	0	0		4	0	8		64
Pedestrians		0				12				4				4			20
Bicycles	0	0	2		0	0	0		0	0	0		0	0	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 12/1/2016 3:36 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

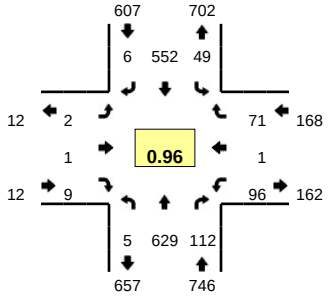
Type of peak hour being reported: Intersection Peak

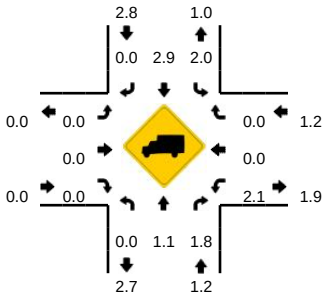
Method for determining peak hour: Total Entering Volume

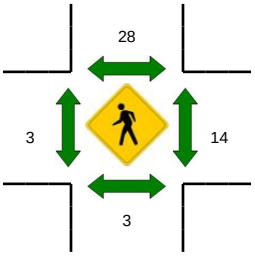
LOCATION: Kamehameha Hwy -- Pupukea Rd
CITY/STATE: Haleiwa, HI

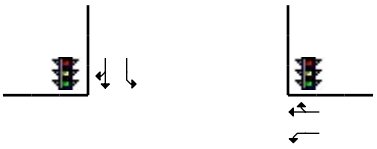
QC JOB #: 13956403
DATE: Sat, Jan 07 2017

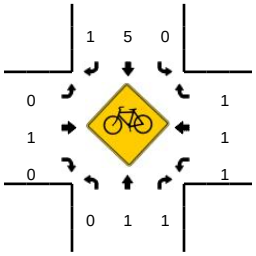
Peak-Hour: 12:30 PM -- 1:30 PM
Peak 15-Min: 12:30 PM -- 12:45 PM

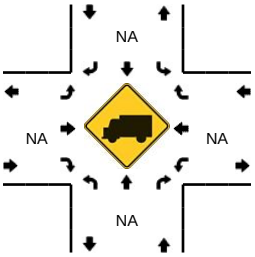


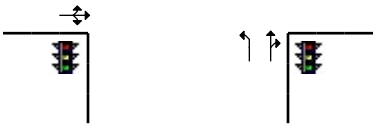


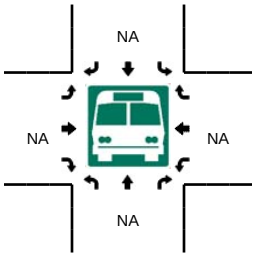












5-Min Count Period Beginning At	Kamehameha Hwy (Northbound)				Kamehameha Hwy (Southbound)				Pupukea Rd (Eastbound)				Pupukea Rd (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
12:00 PM	1	55	7	0	4	42	0	0	0	0	1	0	11	0	8	0	129	1438
12:05 PM	2	50	3	0	4	39	0	0	0	0	0	0	6	1	3	0	108	1428
12:10 PM	0	55	11	0	5	44	0	0	0	0	0	0	9	0	7	0	131	1440
12:15 PM	0	54	9	0	2	52	0	0	0	0	0	0	8	0	3	0	128	1442
12:20 PM	2	46	12	0	4	37	0	0	1	0	0	0	6	0	7	0	115	1445
12:25 PM	2	47	9	0	2	41	0	0	0	0	1	0	11	0	4	0	117	1437
12:30 PM	1	51	8	0	4	58	2	0	0	0	0	0	8	0	10	0	142	1478
12:35 PM	0	59	10	0	4	53	1	0	0	0	0	0	3	0	2	0	132	1477
12:40 PM	0	54	10	0	4	45	0	0	1	0	0	0	7	0	5	0	126	1468
12:45 PM	1	52	6	0	3	39	0	0	0	0	0	0	8	0	7	0	116	1482
12:50 PM	0	57	8	0	5	40	0	0	0	0	1	0	10	0	6	0	127	1498
12:55 PM	1	49	11	0	8	42	2	0	0	0	1	0	2	0	6	0	122	1493
1:00 PM	1	47	5	0	4	37	1	0	0	0	0	0	11	0	8	0	114	1478
1:05 PM	1	51	15	0	2	55	0	0	0	0	0	0	10	0	6	0	140	1510
1:10 PM	0	51	11	0	5	42	0	0	0	1	2	0	10	0	6	0	128	1507
1:15 PM	0	53	7	0	2	50	0	0	0	0	1	0	9	0	3	0	125	1504
1:20 PM	0	57	11	0	4	43	0	0	1	0	3	0	8	1	6	0	134	1523
1:25 PM	0	48	10	0	4	48	0	0	0	0	1	0	10	0	6	0	127	1533
1:30 PM	0	47	11	0	3	52	0	0	0	0	0	0	9	0	5	0	127	1518
1:35 PM	0	41	10	0	7	44	1	0	0	0	0	0	3	0	5	0	111	1497
1:40 PM	1	50	7	0	5	54	1	0	0	0	0	0	9	1	3	0	131	1502
1:45 PM	0	52	11	0	8	59	1	0	0	0	0	0	8	1	3	0	143	1529
1:50 PM	0	35	4	0	6	54	1	0	0	0	0	0	12	0	2	0	114	1516
1:55 PM	0	38	6	0	3	40	0	0	1	0	1	0	18	0	3	0	110	1504

Peak 15-Min Flowrates	Northbound				Southbound				Eastbound				Westbound				Total
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	
All Vehicles	4	656	112	0	48	624	12	0	4	0	0	0	72	0	68	0	1600
Heavy Trucks	0	8	0		0	20	0		0	0	0		0	0	0		28
Pedestrians		0				28				0				20			48
Bicycles	0	0	1		0	0	0		0	0	0		0	1	0		2
Railroad																	
Stopped Buses																	

Comments:

Report generated on 2/1/2017 4:46 PM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net) 1-877-580-2212

LOCATION: Kamehameha Highway north of Pahoe Rd
SPECIFIC LOCATION: Kamehameha Highway north of Pahoe Rd
CITY/STATE: Haleiwa, HI

QC JOB #: 13956407
DIRECTION: NB
DATE: Nov 17 2016 - Nov 19 2016

Start Time	Mon	Tue	Wed	Thu 17-Nov-16	Fri 18-Nov-16	Average Weekday Hourly Traffic	Sat 19-Nov-16	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				31	35	33	69		45	
1:00 AM				15	23	19	41		26	
2:00 AM				9	9	9	32		17	
3:00 AM				19	24	22	20		21	
4:00 AM				48	37	43	37		41	
5:00 AM				122	122	122	76		107	
6:00 AM				255	256	256	194		235	
7:00 AM				488	461	475	323		424	
8:00 AM				414	354	384	376		381	
9:00 AM				379	414	397	421		405	
10:00 AM				445	432	439	504		460	
11:00 AM				**489**	**537**	**513**	**618**		**548**	
12:00 PM				525	591	558	621		579	
1:00 PM				575	598	587	659		611	
2:00 PM				551	619	585	675		615	
3:00 PM				**609**	648	629	627		628	
4:00 PM				609	**707**	**658**	593		**636**	
5:00 PM				564	671	618	495		577	
6:00 PM				425	473	449	377		425	
7:00 PM				329	340	335	265		311	
8:00 PM				249	296	273	188		244	
9:00 PM				172	220	196	185		192	
10:00 PM				114	170	142	566		283	
11:00 PM				62	83	73	**891**		345	
Day Total				7498	8120	7815	8853		8156	
% Weekday Average				95.9%	103.9%					
% Week Average				91.9%	99.6%	95.8%	108.5%			
AM Peak Volume				11:00 AM 489	11:00 AM 537	11:00 AM 513	11:00 AM 618		11:00 AM 548	
PM Peak Volume				3:00 PM 609	4:00 PM 707	4:00 PM 658	11:00 PM 891		4:00 PM 636	

Comments:

LOCATION: Kamehameha Highway north of Pahoe Rd
SPECIFIC LOCATION: Kamehameha Highway north of Pahoe Rd
CITY/STATE: Haleiwa, HI

QC JOB #: 13956407
DIRECTION: NB/SB
DATE: Nov 17 2016 - Nov 19 2016

Start Time	Mon	Tue	Wed	Thu 17-Nov-16	Fri 18-Nov-16	Average Weekday Hourly Traffic	Sat 19-Nov-16	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				51	63	57	122		79	
1:00 AM				31	38	35	73		47	
2:00 AM				19	19	19	83		40	
3:00 AM				45	45	45	42		44	
4:00 AM				102	92	97	71		88	
5:00 AM				280	299	290	150		243	
6:00 AM				468	524	496	348		447	
7:00 AM				929	956	943	633		839	
8:00 AM				877	853	865	816		849	
9:00 AM				812	881	847	924		872	
10:00 AM				926	895	911	1044		955	
11:00 AM				**972**	**1035**	**1004**	**1161**		**1056**	
12:00 PM				1051	1130	1091	1175		1119	
1:00 PM				1047	1108	1078	1227		1127	
2:00 PM				1251	1245	1248	1232		1243	
3:00 PM				**1268**	**1293**	**1281**	**1272**		**1278**	
4:00 PM				1186	1269	1228	1215		1223	
5:00 PM				1067	1205	1136	1047		1106	
6:00 PM				961	1069	1015	806		945	
7:00 PM				581	625	603	488		565	
8:00 PM				431	495	463	310		412	
9:00 PM				313	383	348	502		399	
10:00 PM				197	279	238	902		459	
11:00 PM				133	169	151	1016		439	
Day Total				14998	15970	15489	16659		15874	
% Weekday Average				96.8%	103.1%					
% Week Average				94.5%	100.6%	97.6%	104.9%			
AM Peak Volume				11:00 AM 972	11:00 AM 1035	11:00 AM 1004	11:00 AM 1161		11:00 AM 1056	
PM Peak Volume				3:00 PM 1268	3:00 PM 1293	3:00 PM 1281	3:00 PM 1272		3:00 PM 1278	

Comments:

LOCATION: Kamehameha Highway north of Pahoe Rd
SPECIFIC LOCATION: Kamehameha Highway north of Pahoe Rd
CITY/STATE: Haleiwa, HI

QC JOB #: 13956407
DIRECTION: SB
DATE: Nov 17 2016 - Nov 19 2016

Start Time	Mon	Tue	Wed	Thu 17-Nov-16	Fri 18-Nov-16	Average Weekday Hourly Traffic	Sat 19-Nov-16	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				20	28	24	53		34	
1:00 AM				16	15	16	32		21	
2:00 AM				10	10	10	51		24	
3:00 AM				26	21	24	22		23	
4:00 AM				54	55	55	34		48	
5:00 AM				158	177	168	74		136	
6:00 AM				213	268	241	154		212	
7:00 AM				441	495	468	310		415	
8:00 AM				463	**499**	481	440		467	
9:00 AM				433	467	450	503		468	
10:00 AM				481	463	472	540		495	
11:00 AM				**483**	498	**491**	**543**		**508**	
12:00 PM				526	539	533	554		540	
1:00 PM				472	510	491	568		517	
2:00 PM				**700**	626	**663**	557		628	
3:00 PM				659	**645**	652	**645**		**650**	
4:00 PM				577	562	570	622		587	
5:00 PM				503	534	519	552		530	
6:00 PM				536	596	566	429		520	
7:00 PM				252	285	269	223		253	
8:00 PM				182	199	191	122		168	
9:00 PM				141	163	152	317		207	
10:00 PM				83	109	96	336		176	
11:00 PM				71	86	79	125		94	
Day Total				7500	7850	7681	7806		7721	
% Weekday Average				97.6%	102.2%					
% Week Average				97.1%	101.7%	99.5%	101.1%			
AM Peak Volume				11:00 AM 483	8:00 AM 499	11:00 AM 491	11:00 AM 543		11:00 AM 508	
PM Peak Volume				2:00 PM 700	3:00 PM 645	2:00 PM 663	3:00 PM 645		3:00 PM 650	

Comments:

LOCATION: Pupukea Road east of Kam Hwy
SPECIFIC LOCATION: Pupukea Road east of Kam Hwy
CITY/STATE: Haleiwa, HI

QC JOB #: 13956408
DIRECTION: EB
DATE: Nov 17 2016 - Nov 19 2016

Start Time	Mon	Tue	Wed	Thu 17-Nov-16	Fri 18-Nov-16	Average Weekday Hourly Traffic	Sat 19-Nov-16	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				14	17	16	21		17	
1:00 AM				6	8	7	14		9	
2:00 AM				1	5	3	15		7	
3:00 AM				8	1	5	9		6	
4:00 AM				5	5	5	6		5	
5:00 AM				8	11	10	4		8	
6:00 AM				27	23	25	22		24	
7:00 AM				99	113	106	62		91	
8:00 AM				122	**136**	129	99		119	
9:00 AM				107	105	106	104		105	
10:00 AM				135	107	121	**125**		122	
11:00 AM				**164**	134	**149**	108		**135**	
12:00 PM				134	155	145	142		144	
1:00 PM				134	152	143	143		143	
2:00 PM				154	204	179	157		172	
3:00 PM				176	177	177	166		173	
4:00 PM				233	184	209	157		191	
5:00 PM				**236**	220	228	**179**		**212**	
6:00 PM				233	**227**	**230**	147		202	
7:00 PM				141	159	150	93		131	
8:00 PM				112	104	108	82		99	
9:00 PM				96	113	105	67		92	
10:00 PM				50	59	55	75		61	
11:00 PM				32	44	38	45		40	
Day Total				2427	2463	2449	2042		2308	
% Weekday Average				99.1%	100.6%					
% Week Average				105.2%	106.7%	106.1%	88.5%			
AM Peak Volume				11:00 AM 164	8:00 AM 136	11:00 AM 149	10:00 AM 125		11:00 AM 135	
PM Peak Volume				5:00 PM 236	6:00 PM 227	6:00 PM 230	5:00 PM 179		5:00 PM 212	

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Pupukea Road east of Kam Hwy
SPECIFIC LOCATION: Pupukea Road east of Kam Hwy
CITY/STATE: Haleiwa, HI

QC JOB #: 13956408
DIRECTION: EB/WB
DATE: Nov 17 2016 - Nov 19 2016

Start Time	Mon	Tue	Wed	Thu 17-Nov-16	Fri 18-Nov-16	Average Weekday Hourly Traffic	Sat 19-Nov-16	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				18	24	21	36		26	
1:00 AM				8	13	11	24		15	
2:00 AM				6	8	7	22		12	
3:00 AM				11	6	9	12		10	
4:00 AM				32	32	32	17		27	
5:00 AM				92	112	102	35		80	
6:00 AM				163	174	169	95		144	
7:00 AM				**372**	**396**	**384**	200		**323**	
8:00 AM				312	311	312	268		297	
9:00 AM				295	294	295	285		291	
10:00 AM				313	285	299	**300**		299	
11:00 AM				308	284	296	282		291	
12:00 PM				280	298	289	263		280	
1:00 PM				289	315	302	263		289	
2:00 PM				273	342	308	275		297	
3:00 PM				332	326	329	299		319	
4:00 PM				**404**	**355**	**380**	306		**355**	
5:00 PM				391	347	369	**309**		349	
6:00 PM				366	348	357	267		327	
7:00 PM				210	231	221	156		199	
8:00 PM				152	153	153	132		146	
9:00 PM				119	164	142	110		131	
10:00 PM				61	89	75	112		87	
11:00 PM				46	57	52	55		53	
Day Total				4853	4964	4914	4123		4647	
% Weekday Average				98.8%	101.0%					
% Week Average				104.4%	106.8%	105.7%	88.7%			
AM Peak Volume				7:00 AM 372	7:00 AM 396	7:00 AM 384	10:00 AM 300		7:00 AM 323	
PM Peak Volume				4:00 PM 404	4:00 PM 355	4:00 PM 380	5:00 PM 309		4:00 PM 355	

Comments:

Quality Counts
TRANSPORTATION DATA COLLECTION

LOCATION: Pupukea Road east of Kam Hwy
SPECIFIC LOCATION: Pupukea Road east of Kam Hwy
CITY/STATE: Haleiwa, HI

QC JOB #: 13956408
DIRECTION: WB
DATE: Nov 17 2016 - Nov 19 2016

Start Time	Mon	Tue	Wed	Thu 17-Nov-16	Fri 18-Nov-16	Average Weekday Hourly Traffic	Sat 19-Nov-16	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				4	7	6	15		9	
1:00 AM				2	5	4	10		6	
2:00 AM				5	3	4	7		5	
3:00 AM				3	5	4	3		4	
4:00 AM				27	27	27	11		22	
5:00 AM				84	101	93	31		72	
6:00 AM				136	151	144	73		120	
7:00 AM				**273**	**283**	**278**	138		**231**	
8:00 AM				190	175	183	169		178	
9:00 AM				188	189	189	**181**		186	
10:00 AM				178	178	178	175		177	
11:00 AM				144	150	147	174		156	
12:00 PM				146	143	145	121		137	
1:00 PM				155	163	159	120		146	
2:00 PM				119	138	129	118		125	
3:00 PM				156	149	153	133		146	
4:00 PM				**171**	**171**	**171**	**149**		**164**	
5:00 PM				155	127	141	130		137	
6:00 PM				133	121	127	120		125	
7:00 PM				69	72	71	63		68	
8:00 PM				40	49	45	50		46	
9:00 PM				23	51	37	43		39	
10:00 PM				11	30	21	37		26	
11:00 PM				14	13	14	10		12	
Day Total				2426	2501	2470	2081		2337	
% Weekday Average				98.2%	101.3%					
% Week Average				103.8%	107.0%	105.7%	89.0%			
AM Peak Volume				7:00 AM 273	7:00 AM 283	7:00 AM 278	9:00 AM 181		7:00 AM 231	
PM Peak Volume				4:00 PM 171	4:00 PM 171	4:00 PM 171	4:00 PM 149		4:00 PM 164	

Comments:

LOCATION: Kamehameha Highway south of Pupukea Rd
SPECIFIC LOCATION: Kamehameha Highway south of Pupukea Rd
CITY/STATE: Haleiwa, HI

QC JOB #: 13956409
DIRECTION: NB
DATE: Nov 17 2016 - Nov 19 2016

Start Time	Mon	Tue	Wed	Thu 17-Nov-16	Fri 18-Nov-16	Average Weekday Hourly Traffic	Sat 19-Nov-16	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				39	45	42	75		53	
1:00 AM				19	26	23	39		28	
2:00 AM				11	15	13	35		20	
3:00 AM				21	24	23	28		24	
4:00 AM				53	42	48	44		46	
5:00 AM				136	132	134	81		116	
6:00 AM				243	238	241	189		223	
7:00 AM				374	350	362	301		342	
8:00 AM				382	331	357	343		352	
9:00 AM				368	403	386	413		395	
10:00 AM				493	464	479	497		485	
11:00 AM				**522**	**588**	**555**	**604**		**571**	
12:00 PM				557	614	586	633		601	
1:00 PM				580	654	617	658		631	
2:00 PM				579	652	616	692		641	
3:00 PM				638	698	668	664		667	
4:00 PM				**669**	**752**	**711**	599		**673**	
5:00 PM				609	703	656	515		609	
6:00 PM				463	500	482	367		443	
7:00 PM				348	354	351	242		315	
8:00 PM				237	285	261	197		240	
9:00 PM				209	232	221	197		213	
10:00 PM				131	173	152	611		305	
11:00 PM				66	100	83	**920**		362	
Day Total				7747	8375	8067	8944		8355	
% Weekday Average				96.0%	103.8%					
% Week Average				92.7%	100.2%	96.6%	107.0%			
AM Peak Volume				11:00 AM 522	11:00 AM 588	11:00 AM 555	11:00 AM 604		11:00 AM 571	
PM Peak Volume				4:00 PM 669	4:00 PM 752	4:00 PM 711	11:00 PM 920		4:00 PM 673	

Comments:

LOCATION: Kamehameha Highway south of Pupukea Rd
SPECIFIC LOCATION: Kamehameha Highway south of Pupukea Rd
CITY/STATE: Haleiwa, HI

QC JOB #: 13956409
DIRECTION: NB/SB
DATE: Nov 17 2016 - Nov 19 2016

Start Time	Mon	Tue	Wed	Thu 17-Nov-16	Fri 18-Nov-16	Average Weekday Hourly Traffic	Sat 19-Nov-16	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				59	77	68	123		86	
1:00 AM				37	40	39	68		48	
2:00 AM				24	26	25	83		44	
3:00 AM				45	51	48	50		49	
4:00 AM				140	123	132	84		116	
5:00 AM				365	384	375	172		307	
6:00 AM				545	598	572	376		506	
7:00 AM				858	894	876	632		795	
8:00 AM				881	884	883	818		861	
9:00 AM				883	954	919	988		942	
10:00 AM				**1052**	1019	1036	1082		1051	
11:00 AM				1039	**1108**	**1074**	**1186**		**1111**	
12:00 PM				1107	1160	1134	1196		1154	
1:00 PM				1113	1211	1162	1220		1181	
2:00 PM				1253	1274	1264	1282		1270	
3:00 PM				**1310**	1314	**1312**	**1314**		**1313**	
4:00 PM				1253	**1328**	1291	1258		1280	
5:00 PM				1079	1182	1131	1043		1101	
6:00 PM				931	1023	977	776		910	
7:00 PM				566	580	573	453		533	
8:00 PM				382	462	422	317		387	
9:00 PM				328	385	357	509		407	
10:00 PM				202	261	232	934		466	
11:00 PM				127	176	152	1037		447	
Day Total				15579	16514	16054	17001		16365	
% Weekday Average				97.0%	102.9%					
% Week Average				95.2%	100.9%	98.1%	103.9%			
AM Peak Volume				10:00 AM 1052	11:00 AM 1108	11:00 AM 1074	11:00 AM 1186		11:00 AM 1111	
PM Peak Volume				3:00 PM 1310	4:00 PM 1328	3:00 PM 1312	3:00 PM 1314		3:00 PM 1313	

Comments:

LOCATION: Kamehameha Highway south of Pupukea Rd
SPECIFIC LOCATION: Kamehameha Highway south of Pupukea Rd
CITY/STATE: Haleiwa, HI

QC JOB #: 13956409
DIRECTION: SB
DATE: Nov 17 2016 - Nov 19 2016

Start Time	Mon	Tue	Wed	Thu 17-Nov-16	Fri 18-Nov-16	Average Weekday Hourly Traffic	Sat 19-Nov-16	Sun	Average Week Hourly Traffic	Average Week Profile
12:00 AM				20	32	26	48		33	
1:00 AM				18	14	16	29		20	
2:00 AM				13	11	12	48		24	
3:00 AM				24	27	26	22		24	
4:00 AM				87	81	84	40		69	
5:00 AM				229	252	241	91		191	
6:00 AM				302	360	331	187		283	
7:00 AM				484	544	514	331		453	
8:00 AM				499	553	526	475		509	
9:00 AM				515	551	533	575		547	
10:00 AM				**559**	**555**	**557**	**585**		**566**	
11:00 AM				517	520	519	582		540	
12:00 PM				550	546	548	563		553	
1:00 PM				533	557	545	562		551	
2:00 PM				**674**	**622**	**648**	590		629	
3:00 PM				672	616	644	650		**646**	
4:00 PM				584	576	580	**659**		606	
5:00 PM				470	479	475	528		492	
6:00 PM				468	523	496	409		467	
7:00 PM				218	226	222	211		218	
8:00 PM				145	177	161	120		147	
9:00 PM				119	153	136	312		195	
10:00 PM				71	88	80	323		161	
11:00 PM				61	76	69	117		85	
Day Total				7832	8139	7989	8057		8009	
% Weekday Average				98.0%	101.9%					
% Week Average				97.8%	101.6%	99.8%	100.6%			
AM Peak Volume				10:00 AM 559	10:00 AM 555	10:00 AM 557	10:00 AM 585		10:00 AM 566	
PM Peak Volume				2:00 PM 674	2:00 PM 622	2:00 PM 648	4:00 PM 659		3:00 PM 646	

Comments:

APPENDIX B: EXISTING LOS WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	7	3	5	110	1	50	9	485	78	47	448	3
Future Volume (veh/h)	7	3	5	110	1	50	9	485	78	47	448	3
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1832	1900	1863	1793	1900
Adj Flow Rate, veh/h	8	4	1	131	1	18	11	577	72	56	533	3
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	4	2	6	6
Cap, veh/h	188	81	15	287	10	188	650	1178	147	568	1314	7
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.74	0.74	0.74	0.74	0.74	0.74
Sat Flow, veh/h	793	648	120	1395	83	1500	865	1597	199	779	1781	10
Grp Volume(v), veh/h	13	0	0	131	0	19	11	0	649	56	0	536
Grp Sat Flow(s),veh/h/ln	1561	0	0	1395	0	1584	865	0	1796	779	0	1791
Q Serve(g_s), s	0.0	0.0	0.0	5.4	0.0	0.7	0.3	0.0	9.8	2.1	0.0	7.4
Cycle Q Clear(g_c), s	0.4	0.0	0.0	5.8	0.0	0.7	7.7	0.0	9.8	11.9	0.0	7.4
Prop In Lane	0.62		0.08	1.00		0.95	1.00		0.11	1.00		0.01
Lane Grp Cap(c), veh/h	284	0	0	287	0	199	650	0	1325	568	0	1321
V/C Ratio(X)	0.05	0.00	0.00	0.46	0.00	0.10	0.02	0.00	0.49	0.10	0.00	0.41
Avail Cap(c_a), veh/h	612	0	0	589	0	542	650	0	1325	568	0	1321
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.3	0.0	0.0	27.6	0.0	25.4	4.7	0.0	3.5	6.0	0.0	3.2
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.1	0.0	0.2	0.0	0.0	1.3	0.3	0.0	0.9
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.4	0.0	0.3	0.1	0.0	5.2	0.5	0.0	3.9
LnGrp Delay(d),s/veh	25.4	0.0	0.0	28.8	0.0	25.7	4.7	0.0	4.8	6.3	0.0	4.2
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		13			150			660			592	
Approach Delay, s/veh		25.4			28.4			4.8			4.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		53.0		12.8		53.0		12.8
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		48.5		22.5		48.5		22.5
Max Q Clear Time (g_c+I1), s		11.8		2.4		13.9		7.8
Green Ext Time (p_c), s		10.6		0.5		10.4		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	7.3
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (vph)	5	4	6	103	3	46	5	525	108	51	596	1
Future Volume (vph)	5	4	6	103	3	46	5	525	108	51	596	1
Ideal Flow (vphpl)	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900	1900
Total Lost time (s)		4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Lane Util. Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frpb, ped/bikes		0.99		1.00	0.97		1.00	1.00		1.00	1.00	
Flpb, ped/bikes		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Frt		0.95		1.00	0.86		1.00	0.97		1.00	1.00	
Flt Protected		0.98		0.95	1.00		0.95	1.00		0.95	1.00	
Satd. Flow (prot)		1708		1732	1522		1768	1804		1766	1792	
Flt Permitted		0.92		0.75	1.00		0.38	1.00		0.36	1.00	
Satd. Flow (perm)		1594		1363	1522		710	1804		669	1792	
Peak-hour factor, PHF	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Adj. Flow (vph)	5	4	6	108	3	48	5	553	114	54	627	1
RTOR Reduction (vph)	0	5	0	0	41	0	0	6	0	0	0	0
Lane Group Flow (vph)	0	10	0	108	10	0	5	661	0	54	628	0
Confl. Peds. (#/hr)	7		1	1		7	1		3	3		1
Confl. Bikes (#/hr)			1									1
Heavy Vehicles (%)	2%	2%	2%	4%	2%	4%	2%	2%	3%	2%	6%	2%
Turn Type	Perm	NA		Perm	NA		Perm	NA		Perm	NA	
Protected Phases		4			8			2			6	
Permitted Phases	4			8			2			6		
Actuated Green, G (s)		10.2		10.2	10.2		54.5	54.5		54.5	54.5	
Effective Green, g (s)		10.2		10.2	10.2		54.5	54.5		54.5	54.5	
Actuated g/C Ratio		0.14		0.14	0.14		0.74	0.74		0.74	0.74	
Clearance Time (s)		4.5		4.5	4.5		4.5	4.5		4.5	4.5	
Vehicle Extension (s)		3.0		3.0	3.0		3.0	3.0		3.0	3.0	
Lane Grp Cap (vph)		220		188	210		525	1334		494	1325	
v/s Ratio Prot					0.01			c0.37			0.35	
v/s Ratio Perm		0.01		c0.08			0.01			0.08		
v/c Ratio		0.04		0.57	0.05		0.01	0.50		0.11	0.47	
Uniform Delay, d1		27.5		29.7	27.5		2.5	3.9		2.7	3.9	
Progression Factor		1.00		1.00	1.00		1.00	1.00		1.00	1.00	
Incremental Delay, d2		0.1		4.2	0.1		0.0	1.3		0.4	1.2	
Delay (s)		27.6		33.9	27.6		2.6	5.3		3.2	5.1	
Level of Service		C		C	C		A	A		A	A	
Approach Delay (s)		27.6			31.9			5.2			4.9	
Approach LOS		C			C			A			A	

Intersection Summary			
HCM 2000 Control Delay	8.1	HCM 2000 Level of Service	A
HCM 2000 Volume to Capacity ratio	0.51		
Actuated Cycle Length (s)	73.7	Sum of lost time (s)	9.0
Intersection Capacity Utilization	62.8%	ICU Level of Service	B
Analysis Period (min)	15		
c Critical Lane Group			

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	2	1	9	96	1	71	5	629	112	49	552	6
Future Volume (veh/h)	2	1	9	96	1	71	5	629	112	49	552	6
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.92		1.00	0.92		0.90	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1845	1900
Adj Flow Rate, veh/h	2	1	0	100	1	22	5	655	96	51	575	5
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	3	3
Cap, veh/h	235	101	0	325	11	234	570	1107	162	449	1278	11
Arrive On Green	0.17	0.17	0.00	0.17	0.17	0.17	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	870	593	0	1295	62	1373	829	1582	232	708	1826	16
Grp Volume(v), veh/h	3	0	0	100	0	23	5	0	751	51	0	580
Grp Sat Flow(s),veh/h/ln	1463	0	0	1295	0	1436	829	0	1813	708	0	1841
Q Serve(g_s), s	0.0	0.0	0.0	4.7	0.0	0.9	0.2	0.0	14.7	2.8	0.0	9.6
Cycle Q Clear(g_c), s	0.1	0.0	0.0	4.8	0.0	0.9	9.7	0.0	14.7	17.5	0.0	9.6
Prop In Lane	0.67		0.00	1.00		0.96	1.00		0.13	1.00		0.01
Lane Grp Cap(c), veh/h	336	0	0	325	0	244	570	0	1269	449	0	1289
V/C Ratio(X)	0.01	0.00	0.00	0.31	0.00	0.09	0.01	0.00	0.59	0.11	0.00	0.45
Avail Cap(c_a), veh/h	556	0	0	525	0	466	570	0	1269	449	0	1289
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	0.0	25.8	0.0	24.2	6.7	0.0	5.3	9.8	0.0	4.6
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.5	0.0	0.2	0.0	0.0	2.0	0.5	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.0	0.0	0.0	1.8	0.0	0.4	0.0	0.0	7.8	0.6	0.0	5.1
LnGrp Delay(d),s/veh	23.9	0.0	0.0	26.4	0.0	24.4	6.7	0.0	7.4	10.3	0.0	5.7
LnGrp LOS	C			C		C	A		A	B		A
Approach Vol, veh/h		3			123			756			631	
Approach Delay, s/veh		23.9			26.0			7.4			6.1	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		53.0		16.3		53.0		16.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		48.5		22.5		48.5		22.5
Max Q Clear Time (g_c+I1), s		16.7		2.1		19.5		6.8
Green Ext Time (p_c), s		12.0		0.4		11.6		0.4

Intersection Summary	
HCM 2010 Ctrl Delay	8.4
HCM 2010 LOS	A

APPENDIX C: NEAR TERM LOS WORKSHEETS

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	10	120	5	55	10	510	85	50	475	5
Future Volume (veh/h)	10	5	10	120	5	55	10	510	85	50	475	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1832	1900	1863	1793	1900
Adj Flow Rate, veh/h	12	6	7	143	6	23	12	607	80	60	565	5
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	4	2	6	6
Cap, veh/h	157	78	60	302	46	176	612	1155	152	529	1292	11
Arrive On Green	0.14	0.14	0.14	0.14	0.14	0.14	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	564	571	441	1386	336	1288	838	1585	209	752	1774	16
Grp Volume(v), veh/h	25	0	0	143	0	29	12	0	687	60	0	570
Grp Sat Flow(s),veh/h/ln	1576	0	0	1386	0	1624	838	0	1794	752	0	1790
Q Serve(g_s), s	0.0	0.0	0.0	5.5	0.0	1.0	0.4	0.0	11.2	2.5	0.0	8.5
Cycle Q Clear(g_c), s	0.8	0.0	0.0	6.4	0.0	1.0	8.8	0.0	11.2	13.8	0.0	8.5
Prop In Lane	0.48		0.28	1.00		0.79	1.00		0.12	1.00		0.01
Lane Grp Cap(c), veh/h	295	0	0	302	0	222	612	0	1307	529	0	1304
V/C Ratio(X)	0.08	0.00	0.00	0.47	0.00	0.13	0.02	0.00	0.53	0.11	0.00	0.44
Avail Cap(c_a), veh/h	601	0	0	581	0	549	612	0	1307	529	0	1304
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	0.0	27.5	0.0	25.3	5.4	0.0	4.0	7.0	0.0	3.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.2	0.0	0.3	0.1	0.0	1.5	0.4	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	2.6	0.0	0.5	0.1	0.0	5.9	0.6	0.0	4.5
LnGrp Delay(d),s/veh	25.3	0.0	0.0	28.6	0.0	25.5	5.4	0.0	5.5	7.4	0.0	4.7
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		25			172			699			630	
Approach Delay, s/veh		25.3			28.1			5.5			4.9	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		53.0		13.6		53.0		13.6
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		48.5		22.5		48.5		22.5
Max Q Clear Time (g_c+I1), s		13.2		2.8		15.8		8.4
Green Ext Time (p_c), s		11.5		0.7		11.2		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	8.1
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	10	110	5	50	10	555	115	55	630	5
Future Volume (veh/h)	10	5	10	110	5	50	10	555	115	55	630	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.95	0.97		0.97	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1827	1830	1900	1863	1860	1900	1863	1793	1900
Adj Flow Rate, veh/h	11	5	5	116	5	19	11	584	96	58	663	5
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	2	2	2	2	2	2	6	6
Cap, veh/h	165	73	48	289	43	165	547	1140	187	541	1300	10
Arrive On Green	0.13	0.13	0.13	0.13	0.13	0.13	0.73	0.73	0.73	0.73	0.73	0.73
Sat Flow, veh/h	622	550	366	1338	327	1244	765	1558	256	757	1777	13
Grp Volume(v), veh/h	21	0	0	116	0	24	11	0	680	58	0	668
Grp Sat Flow(s),veh/h/ln	1539	0	0	1338	0	1571	765	0	1814	757	0	1790
Q Serve(g_s), s	0.0	0.0	0.0	4.6	0.0	0.9	0.4	0.0	10.7	2.4	0.0	10.6
Cycle Q Clear(g_c), s	0.7	0.0	0.0	5.3	0.0	0.9	11.0	0.0	10.7	13.0	0.0	10.6
Prop In Lane	0.52		0.24	1.00		0.79	1.00		0.14	1.00		0.01
Lane Grp Cap(c), veh/h	286	0	0	289	0	208	547	0	1327	541	0	1310
V/C Ratio(X)	0.07	0.00	0.00	0.40	0.00	0.12	0.02	0.00	0.51	0.11	0.00	0.51
Avail Cap(c_a), veh/h	594	0	0	567	0	533	547	0	1327	541	0	1310
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	25.2	0.0	0.0	27.2	0.0	25.3	6.2	0.0	3.8	6.6	0.0	3.8
Incr Delay (d2), s/veh	0.1	0.0	0.0	0.9	0.0	0.2	0.1	0.0	1.4	0.4	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	2.1	0.0	0.4	0.1	0.0	5.6	0.5	0.0	5.5
LnGrp Delay(d),s/veh	25.4	0.0	0.0	28.0	0.0	25.6	6.2	0.0	5.2	7.0	0.0	5.2
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		21			140			691			726	
Approach Delay, s/veh		25.4			27.6			5.2			5.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		53.0		13.3		53.0		13.3
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		48.5		22.5		48.5		22.5
Max Q Clear Time (g_c+I1), s		13.0		2.7		15.0		7.3
Green Ext Time (p_c), s		12.7		0.5		12.5		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	7.6
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	10	105	5	75	10	665	120	55	580	10
Future Volume (veh/h)	5	5	10	105	5	75	10	665	120	55	580	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.93		0.90	0.92		0.90	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1845	1900
Adj Flow Rate, veh/h	5	5	1	109	5	26	10	693	104	57	604	9
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	3	3
Cap, veh/h	172	152	25	332	42	218	540	1096	164	413	1260	19
Arrive On Green	0.18	0.18	0.18	0.18	0.18	0.18	0.70	0.70	0.70	0.70	0.70	0.70
Sat Flow, veh/h	553	868	142	1295	239	1242	804	1576	236	679	1812	27
Grp Volume(v), veh/h	11	0	0	109	0	31	10	0	797	57	0	613
Grp Sat Flow(s),veh/h/ln	1563	0	0	1295	0	1481	804	0	1812	679	0	1839
Q Serve(g_s), s	0.0	0.0	0.0	4.8	0.0	1.2	0.4	0.0	16.7	3.5	0.0	10.6
Cycle Q Clear(g_c), s	0.4	0.0	0.0	5.2	0.0	1.2	11.0	0.0	16.7	20.1	0.0	10.6
Prop In Lane	0.45		0.09	1.00		0.84	1.00		0.13	1.00		0.01
Lane Grp Cap(c), veh/h	349	0	0	332	0	260	540	0	1260	413	0	1279
V/C Ratio(X)	0.03	0.00	0.00	0.33	0.00	0.12	0.02	0.00	0.63	0.14	0.00	0.48
Avail Cap(c_a), veh/h	571	0	0	523	0	478	540	0	1260	413	0	1279
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.9	0.0	0.0	25.8	0.0	24.2	7.4	0.0	5.8	11.2	0.0	4.8
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.6	0.0	0.2	0.1	0.0	2.4	0.7	0.0	1.3
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	1.9	0.0	0.5	0.1	0.0	9.0	0.7	0.0	5.7
LnGrp Delay(d),s/veh	23.9	0.0	0.0	26.4	0.0	24.4	7.4	0.0	8.2	11.9	0.0	6.1
LnGrp LOS	C			C		C	A		A	B		A
Approach Vol, veh/h		11			140			807			670	
Approach Delay, s/veh		23.9			25.9			8.2			6.6	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		53.0		16.7		53.0		16.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		48.5		22.5		48.5		22.5
Max Q Clear Time (g_c+I1), s		18.7		2.4		22.1		7.2
Green Ext Time (p_c), s		12.9		0.5		12.2		0.5

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	10	151	5	64	10	491	112	50	454	5
Future Volume (veh/h)	10	5	10	151	5	64	10	491	112	50	454	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.99		0.99	0.99		0.99	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1833	1900	1863	1793	1900
Adj Flow Rate, veh/h	12	6	7	180	6	34	12	585	112	60	540	5
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84	0.84
Percent Heavy Veh, %	2	2	2	2	2	2	2	4	4	2	6	6
Cap, veh/h	174	87	71	336	39	224	600	1056	202	490	1252	12
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	589	535	437	1387	242	1369	857	1496	286	745	1773	16
Grp Volume(v), veh/h	25	0	0	180	0	40	12	0	697	60	0	545
Grp Sat Flow(s),veh/h/ln	1561	0	0	1387	0	1611	857	0	1782	745	0	1790
Q Serve(g_s), s	0.0	0.0	0.0	7.5	0.0	1.5	0.4	0.0	13.0	2.9	0.0	8.9
Cycle Q Clear(g_c), s	0.8	0.0	0.0	8.3	0.0	1.5	9.3	0.0	13.0	15.9	0.0	8.9
Prop In Lane	0.48		0.28	1.00		0.85	1.00		0.16	1.00		0.01
Lane Grp Cap(c), veh/h	332	0	0	336	0	263	600	0	1258	490	0	1263
V/C Ratio(X)	0.08	0.00	0.00	0.54	0.00	0.15	0.02	0.00	0.55	0.12	0.00	0.43
Avail Cap(c_a), veh/h	581	0	0	563	0	528	600	0	1258	490	0	1263
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	0.0	27.4	0.0	24.7	6.2	0.0	4.9	8.7	0.0	4.3
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.3	0.0	0.3	0.1	0.0	1.8	0.5	0.0	1.1
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.4	0.0	0.0	3.4	0.0	0.7	0.1	0.0	6.8	0.7	0.0	4.6
LnGrp Delay(d),s/veh	24.5	0.0	0.0	28.8	0.0	24.9	6.3	0.0	6.6	9.2	0.0	5.4
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		25			220			709			605	
Approach Delay, s/veh		24.5			28.1			6.6			5.7	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		53.0		15.7		53.0		15.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		48.5		22.5		48.5		22.5
Max Q Clear Time (g_c+I1), s		15.0		2.8		17.9		10.3
Green Ext Time (p_c), s		11.2		0.8		10.9		0.7

Intersection Summary	
HCM 2010 Ctrl Delay	9.6
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	3.8

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	66	96	504	71	105	435
Future Vol, veh/h	66	96	504	71	105	435
Conflicting Peds, #/hr	0	70	0	15	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	84	84	84	84	84	84
Heavy Vehicles, %	2	2	4	2	2	6
Mvmt Flow	79	114	600	85	125	518

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1425	727	0	0	700	0
Stage 1	657	-	-	-	-	-
Stage 2	768	-	-	-	-	-
Critical Hdwy	7.12	6.22	-	-	4.12	-
Critical Hdwy Stg 1	6.12	-	-	-	-	-
Critical Hdwy Stg 2	6.12	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	113	424	-	-	897	-
Stage 1	454	-	-	-	-	-
Stage 2	394	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	99	390	-	-	837	-
Mov Cap-2 Maneuver	220	-	-	-	-	-
Stage 1	454	-	-	-	-	-
Stage 2	335	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	23	0	2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	220	390	837	-
HCM Lane V/C Ratio	-	-	0.357	0.293	0.149	-
HCM Control Delay (s)	-	-	30.2	18	10.1	-
HCM Lane LOS	-	-	D	C	B	-
HCM 95th %tile Q(veh)	-	-	1.5	1.2	0.5	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	10	5	10	152	5	62	10	533	145	55	598	5
Future Volume (veh/h)	10	5	10	152	5	62	10	533	145	55	598	5
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.98		0.96	0.98		0.98	1.00		1.00	1.00		0.98
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1827	1829	1900	1863	1859	1900	1863	1793	1900
Adj Flow Rate, veh/h	11	5	5	160	5	31	11	561	128	58	629	5
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95	0.95
Percent Heavy Veh, %	2	2	2	4	2	2	2	2	2	2	6	6
Cap, veh/h	186	83	59	327	35	218	535	1034	236	498	1254	10
Arrive On Green	0.16	0.16	0.16	0.16	0.16	0.16	0.71	0.71	0.71	0.71	0.71	0.71
Sat Flow, veh/h	651	511	363	1344	216	1342	790	1465	334	751	1776	14
Grp Volume(v), veh/h	21	0	0	160	0	36	11	0	689	58	0	634
Grp Sat Flow(s),veh/h/ln	1526	0	0	1344	0	1558	790	0	1799	751	0	1790
Q Serve(g_s), s	0.0	0.0	0.0	6.9	0.0	1.4	0.4	0.0	12.5	2.7	0.0	11.1
Cycle Q Clear(g_c), s	0.7	0.0	0.0	7.6	0.0	1.4	11.5	0.0	12.5	15.3	0.0	11.1
Prop In Lane	0.52		0.24	1.00		0.86	1.00		0.19	1.00		0.01
Lane Grp Cap(c), veh/h	328	0	0	327	0	254	535	0	1271	498	0	1264
V/C Ratio(X)	0.06	0.00	0.00	0.49	0.00	0.14	0.02	0.00	0.54	0.12	0.00	0.50
Avail Cap(c_a), veh/h	572	0	0	549	0	510	535	0	1271	498	0	1264
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	24.4	0.0	0.0	27.2	0.0	24.6	7.2	0.0	4.8	8.4	0.0	4.6
Incr Delay (d2), s/veh	0.1	0.0	0.0	1.1	0.0	0.3	0.1	0.0	1.7	0.5	0.0	1.4
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.3	0.0	0.0	3.0	0.0	0.6	0.1	0.0	6.7	0.6	0.0	5.8
LnGrp Delay(d),s/veh	24.4	0.0	0.0	28.3	0.0	24.9	7.3	0.0	6.5	8.9	0.0	6.0
LnGrp LOS	C			C		C	A		A	A		A
Approach Vol, veh/h		21			196			700			692	
Approach Delay, s/veh		24.4			27.7			6.5			6.3	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		53.0		15.7		53.0		15.7
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		48.5		22.5		48.5		22.5
Max Q Clear Time (g_c+I1), s		14.5		2.7		17.3		9.6
Green Ext Time (p_c), s		12.3		0.8		11.9		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	9.2
HCM 2010 LOS	A

Intersection	
Int Delay, s/veh	2.7

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	61	99	536	64	101	594
Future Vol, veh/h	61	99	536	64	101	594
Conflicting Peds, #/hr	0	35	0	7	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	95	95	95	95	95	95
Heavy Vehicles, %	2	2	2	2	2	6
Mvmt Flow	64	104	564	67	106	625

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1443	640	0	0	639	0
Stage 1	605	-	-	-	-	-
Stage 2	838	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	146	475	-	-	945	-
Stage 1	545	-	-	-	-	-
Stage 2	424	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	128	456	-	-	914	-
Mov Cap-2 Maneuver	258	-	-	-	-	-
Stage 1	541	-	-	-	-	-
Stage 2	375	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	18.4	0	1.4
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	258	456	914	-
HCM Lane V/C Ratio	-	-	0.249	0.229	0.116	-
HCM Control Delay (s)	-	-	23.5	15.2	9.5	-
HCM Lane LOS	-	-	C	C	A	-
HCM 95th %tile Q(veh)	-	-	1	0.9	0.4	-

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Volume (veh/h)	5	5	10	151	5	88	10	646	153	55	548	10
Future Volume (veh/h)	5	5	10	151	5	88	10	646	153	55	548	10
Number	7	4	14	3	8	18	5	2	12	1	6	16
Initial Q (Qb), veh	0	0	0	0	0	0	0	0	0	0	0	0
Ped-Bike Adj(A_pbT)	0.94		0.91	0.93		0.91	1.00		0.97	1.00		0.97
Parking Bus, Adj	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Adj Sat Flow, veh/h/ln	1900	1863	1900	1863	1863	1900	1863	1863	1900	1863	1845	1900
Adj Flow Rate, veh/h	5	5	1	157	5	40	10	673	138	57	571	9
Adj No. of Lanes	0	1	0	1	1	0	1	1	0	1	1	0
Peak Hour Factor	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96	0.96
Percent Heavy Veh, %	2	2	2	2	2	2	2	2	2	2	3	3
Cap, veh/h	185	166	28	359	32	257	540	1011	207	378	1227	19
Arrive On Green	0.20	0.20	0.20	0.20	0.20	0.20	0.68	0.68	0.68	0.68	0.68	0.68
Sat Flow, veh/h	568	846	141	1306	164	1312	829	1492	306	670	1810	29
Grp Volume(v), veh/h	11	0	0	157	0	45	10	0	811	57	0	580
Grp Sat Flow(s),veh/h/ln	1556	0	0	1306	0	1476	829	0	1797	670	0	1839
Q Serve(g_s), s	0.0	0.0	0.0	7.4	0.0	1.8	0.4	0.0	18.9	3.9	0.0	10.6
Cycle Q Clear(g_c), s	0.4	0.0	0.0	7.8	0.0	1.8	11.0	0.0	18.9	22.8	0.0	10.6
Prop In Lane	0.45		0.09	1.00		0.89	1.00		0.17	1.00		0.02
Lane Grp Cap(c), veh/h	379	0	0	359	0	290	540	0	1219	378	0	1247
V/C Ratio(X)	0.03	0.00	0.00	0.44	0.00	0.16	0.02	0.00	0.67	0.15	0.00	0.47
Avail Cap(c_a), veh/h	556	0	0	513	0	464	540	0	1219	378	0	1247
HCM Platoon Ratio	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00	1.00
Upstream Filter(I)	1.00	0.00	0.00	1.00	0.00	1.00	1.00	0.00	1.00	1.00	0.00	1.00
Uniform Delay (d), s/veh	23.3	0.0	0.0	26.2	0.0	23.8	8.0	0.0	6.8	13.5	0.0	5.4
Incr Delay (d2), s/veh	0.0	0.0	0.0	0.8	0.0	0.2	0.1	0.0	2.9	0.8	0.0	1.2
Initial Q Delay(d3),s/veh	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0	0.0
%ile BackOfQ(50%),veh/ln	0.2	0.0	0.0	2.9	0.0	0.8	0.1	0.0	10.2	0.8	0.0	5.7
LnGrp Delay(d),s/veh	23.3	0.0	0.0	27.0	0.0	24.1	8.1	0.0	9.6	14.3	0.0	6.7
LnGrp LOS	C			C		C	A		A	B		A
Approach Vol, veh/h		11			202			821			637	
Approach Delay, s/veh		23.3			26.4			9.6			7.4	
Approach LOS		C			C			A			A	

Timer	1	2	3	4	5	6	7	8
Assigned Phs		2		4		6		8
Phs Duration (G+Y+Rc), s		53.0		18.5		53.0		18.5
Change Period (Y+Rc), s		4.5		4.5		4.5		4.5
Max Green Setting (Gmax), s		48.5		22.5		48.5		22.5
Max Q Clear Time (g_c+I1), s		20.9		2.4		24.8		9.8
Green Ext Time (p_c), s		12.4		0.8		11.5		0.6

Intersection Summary	
HCM 2010 Ctrl Delay	10.9
HCM 2010 LOS	B

Intersection	
Int Delay, s/veh	4

Movement	WBL	WBR	NBT	NBR	SBL	SBT
Lane Configurations						
Traffic Vol, veh/h	79	122	646	93	137	533
Future Vol, veh/h	79	122	646	93	137	533
Conflicting Peds, #/hr	0	70	0	15	0	0
Sign Control	Stop	Stop	Free	Free	Free	Free
RT Channelized	-	None	-	None	-	None
Storage Length	0	0	-	-	300	-
Veh in Median Storage, #	0	-	0	-	-	0
Grade, %	0	-	0	-	-	0
Peak Hour Factor	96	96	96	96	96	96
Heavy Vehicles, %	2	2	2	2	2	3
Mvmt Flow	82	127	673	97	143	555

Major/Minor	Minor1		Major1		Major2	
Conflicting Flow All	1577	806	0	0	785	0
Stage 1	736	-	-	-	-	-
Stage 2	841	-	-	-	-	-
Critical Hdwy	6.42	6.22	-	-	4.12	-
Critical Hdwy Stg 1	5.42	-	-	-	-	-
Critical Hdwy Stg 2	5.42	-	-	-	-	-
Follow-up Hdwy	3.518	3.318	-	-	2.218	-
Pot Cap-1 Maneuver	121	382	-	-	834	-
Stage 1	474	-	-	-	-	-
Stage 2	423	-	-	-	-	-
Platoon blocked, %			-	-		-
Mov Cap-1 Maneuver	97	351	-	-	778	-
Mov Cap-2 Maneuver	224	-	-	-	-	-
Stage 1	467	-	-	-	-	-
Stage 2	345	-	-	-	-	-

Approach	WB	NB	SB
HCM Control Delay, s	24.6	0	2.2
HCM LOS	C		

Minor Lane/Major Mvmt	NBT	NBR	WBLn1	WBLn2	SBL	SBT
Capacity (veh/h)	-	-	224	351	778	-
HCM Lane V/C Ratio	-	-	0.367	0.362	0.183	-
HCM Control Delay (s)	-	-	30.1	21	10.7	-
HCM Lane LOS	-	-	D	C	B	-
HCM 95th %tile Q(veh)	-	-	1.6	1.6	0.7	-

APPENDIX D: PEDESTRIAN CROSSWALK WARRANT

XWalk+ Crosswalk Treatment Indentification Tool

FEHR PEERS

Input instructions (refer to Field Visit Checklist for data collection guidelines):

1. Enter the name of the intersection above the Inputs Table
2. An input value is required for every category except Fields 4, 5, 10, and 11 (which are required only if a median refuge island is present), and Field 26
3. Refer to the Documentation tab for more detailed descriptions of inputs and calculations.
4. There are available defaults for Fields 6, 7, 8, and 13, as listed in the "description" section
5. Select inputs for Fields 14-25 from the drop-down menus
6. Refer to the User's Guide for pedestrian crossing treatment descriptions and additional guidelines

Intersection: Kam Hwy/Pahoe Rd

required input
optional/default input (update if location-specific data is available)
required only when a median refuge island is present

INPUTS

FIELD	CATEGORY	INPUT	UNITS	DESCRIPTION/ NOTES
1	Speed Limit	35	mph	Posted or statutory speed limit or the 85th percentile speed on the major street
2	Peak Hour Pedestrian Volume	80	ped/h	Number of pedestirans crossing the major roadway in a peak hour
3	Major Road Peak Hour Volume (Total)	1438	veh/h	Total number of vehicles and bicylists on both approaches during the peak hour
4	Major Road Peak Hour Volume Direction 1	0	veh/h	Include only if a painted or raised median is present (min of 6 feet wide)
5	Major Road Peak Hour Volume Direction 2	0	veh/h	Include only if a painted or raised median is present (min of 6 feet wide)
6	Average Pedestrian Walking Speed	3.5	ft/s	Average pedestrian walking speed, default speet = 3.5 feet/second
7	15th Percentile Crossing Speed	3	ft/s	Speed for the slowest 15% of pedestrians; default speed = 3 feet/second
8	Pedestrian start-up time and end clearance time	3	s	The *Highway Capacity Manual* suggests 3 seconds
9	Pedestrian Crossing Distance (curb to curb)	30	ft	Distance between the near and far curbs
10	First Half Crossing Distance	15	ft	Distance between the near curb and a painted or raised median refuge island
11	Second Half Crossing Distance	15	ft	Distance between a painted or raised median refuge island and the far curb
12	Number of Lanes (total both directions)	2	Lanes	Number of lanes on major roadway
13	Expected Motorist Compliance	Moderate		Typical motorist compliance, default = Low
14	Is frequent at-grade transit present?	Yes		Does frequent surface transit run along major or minor road at the intersection?
15	Are bicycle lanes present?	No		
16	Is there heavy bicycle traffic?	No		
17	Is there a clear major and minor road?	Yes		Is there a clear differentiation in the traffic volume between the two roads?
18	Is this a midblock location or off-set intersection?	No		
19	Is there heavy truck traffic?	No		
20	Does existing infrastructure limit potential treatments?	No		Are there storm drains, poles, or other permanent structures at any corner of the intersection?
21	Is there on-street parking at the location?	No		
22	Is the location in a downtown area?	No		
23	Is it located within the built-up area of an isolated community?	Yes		Does the community have a population of less than 10,000?
24	Is a median refuge island present?	No		Does the refuge island have a width of at least 6 feet to accommodate pedestrian queues?
25	Is there sufficient width to accommodate a median?	No		At least 4 feet (with lane widths reduced to 10 or 11 feet)
26	Actual Total Pedestrian Delay		s	Optional (if calcuated at the site)

OUTPUTS

Signalized Crossing or Unsignalized Crossing?	**Unsignalized Crossing**
Pedestrian LOS	**F**
Candidate Pedestrian Treatment Identified	**Overhead Flashing Beacon or In-Pavement Flashers**
Candidate for Median Refuge Island?	**NO**
Candidate for Road Diet?	**NO**
Other Treatments for Consideration**	**RRFB**
Paired Treatments for Consideration**	**Curb Extensions, Bus Bulb, Reduced Curb Radii, Staggered Pedestrian Refuge, High Visibility Crosswalk Markings, Advance Yield Lines, Advance signage**

TREATMENT IDENTIFICATION MATRIX FOR UNCONTROLLED LOCATIONS

PEDESTRIAN LEVEL OF SERVICE	EXPECTED MOTORIST COMPLIANCE		
	LOW (or Speed > 35 MPH)	MODERATE	HIGH
LOS A-D (average delay up to 30 seconds)	**LEVEL 3** 2 Lane Road: In-Pavement Flashers, Overhead Flashing Beacons Multi-Lane Road: RRFB Plus LEVELS 1 and 2	**LEVEL 2** Curb Extentions, Bus Bulb, Reduced Curb Radii, Staggered Pedestrian Refuge Plus LEVEL 1	**LEVEL 1** High Visibility Crosswalk Markings, Advanced Yield Lines, Advance Signage
LOS E-F (average delay greater than 30 seconds)	**LEVEL 4** HAWK*, RRFB, or Direct Pedestrians to Nearest Safe Crossing Plus LEVELS 1, 2, and 3	**LEVEL 3** 2 Lane Road: In-Pavement Flashers, Overhead Flashing Beacons Multi-Lane Road: RRFB Plus LEVELS 1 and 2	**LEVEL 2** Curb Extentions, Bus Bulb, Reduced Curb Radii, Staggered Pedestrian Refuge Plus LEVEL 1

* Treatment has provisional approval under the CaMUTCD
* * Note that not all treatments are appropriate for multi-lane roads; refer to suitability notes in treatment fact sheets. Check local codes for each treatment.
** Note that curb extensions should not be used in instances where bicycle lanes are present and no on-street parking is available.

DRAFT TREATMENT IDENTIFICATION TOOL, FEHR & PEERS, VERSION 2.1 (February 23, 2012)

NOTE: This worksheet should be used in conjunction with the User's Guide and Treatment Descriptions. This worksheet provides general recommendations; in all cases, engineering judgment and site review should be used in selecting a specific treatment for installation. This worksheet does not apply to school crossings.

APPENDIX G

NOISE STUDY FOR PROPOSED
PŪPŪKEA RURAL COMMUNITY COMMERCIAL CENTER,
PŪPŪKEA, OAHU

Y. Ebisu & Associates
Acoustical and Electronic Engineers

1126 12th Ave., Room 305
Honolulu, Hawaii 96816
Ph. (808) 735-1634 – Fax (808) 732-0409
e-mail: ebisuyassoc@aol.com

YEA Job #54.045
July 26, 2017

G70
925 Bethel Street, Fifth Floor
Honolulu, HI 96813

Attention: Mr. Jeffrey H. Overton, ACIP, LEED-AP

Subject: Noise Study for Hanapohaku Commercial Center; Pupukea, Oahu

Dear Mr. Overton:

We have completed our traffic noise measurements at the subject project site and have reviewed the project's draft Traffic Impact Analysis Report (Reference 1). This letter report presents the results of our evaluations of the potential noise impacts associated with the subject project, and provides possible noise mitigation measures as appropriate.

Figure 1 is a project location map which indicates the three traffic noise measurement locations used on July 7, 2017 (Friday) and on July 8, 2017 (Saturday). Table 1 summarizes the results of the traffic noise measurements at Locations A1, A2, and B, and provides a comparison of the measured noise levels and the predicted noise levels using the U.S. Federal Highway Administration Traffic Noise Model (FHWA TNM), Version 2.5 (Reference 2). As indicated in Table 1, measured traffic noise levels compared favorably with predicted noise levels using the FHWA TNM. For this reason, the FHWA TNM was used to model both existing and future traffic noise levels along Kamehameha Hiighway and Pupukea Road.

Table 2 presents the Base Year and future traffic volumes on Kamehameha HIghway and Pupukea Road obtained from Reference 1. Using these traffic volumes, traffic noise levels at 50, 75, and 100 feet from the centerlines of Kamehameha Highway and Pupukea Road were calculated using the FHWA TNM as shown in Tables 3 and 4 for the Base Year and Future Year (Build Alternative), respectively. In the tables, the Equivalent (or Average) Hourly Sound Level [Leq(h)] noise descriptor was used to calculate the Base Year and CY 2021 traffic noise levels as required by Reference 3. By Reference 3, the applicable noise mitigation thresholds for traffic noise are 66 Leq(h) and 71 Leq(h) for residential and commercial receptors,

respectively.

As shown in Table 5, the applicable distances to the 66 Leq(h) noise contour for unobstructed line-of sight conditions ranged from 36 to 44 feet from the centerline of Kamehameha HIghway during the Base Year to a range from 36 to 45 feet from the centerline of Kamehameha Highway during 2021 under the Build Alternative. Along Pupukea Road in the vicinity of Kamehameha Highway, the Base Year 66 Leq(h) noise contour did not extend beyond 19 feet from the centerline of Pupukea Road. Also shown in Table 5, the applicable distances to the 71 Leq(h) noise contour for unobstructed line-of sight conditions ranged from 20 to 24 feet from the centerline of Kamehameha Highway during the Base Year and will range from 20 to 25 feet from the centerline of Kamehameha Highway during 2021 under the Build Alternative. Based on the results shown in Table 5, the 66 Leq(h) noise mitigation threshold was exceeded during the Base Year at one residence located on the mauka side of Kamehameha Highway and within 950 feet south of the Pupukea Road intersection. By 2021, with or without the project, the total number of residences exposed to traffic noise levels at or above the 66 Leq(h) will increase from one to three residences. No commercial establishments were or are anticipated to be located within the existing 71 Leq(h) traffic noise contours.

By 2021, without the project, traffic noise levels are predicted to increase by 0.2 to 0.3 Leq(h) along Kamehameha Highway and by 0.3 to 0.4 Leq(h) along Pupukea Road. These increases will not be perceptible, and are well within the accuracy limits of the noise level predictions. By 2021, with the Project, a maximum additional increase in traffic noise levels along Kamehameha Highway of 0.2 Leq(h) is predicted to occur due to project traffic. These predictions are shown in Table 6, for both Non-Project and Project traffic noise contributions. Along Pupukea Road, larger increases of 0.3 to 0.4 Leq(h) are anticipated from Non-Project traffic, and even larger increases of 0.9 to 1.1 Leq(h) are anticipated from Project traffic. By 2021 with or without the project, the total number of existing residences along Kamehameha Highway within the 66 Leq(h) will increase from one to three. No existing residences along Pupukea Road should be within the 66 Leq(h) traffic noise contour by 2021, with or without the Project.

Traffic noise mitigation measures should not be required for this project. However, to minimize risks of potential noise complaints from delivery truck noise, such as from back-up alarms, deliveries to the commercial establishments during the nighttime or early morning hours should be avoided if possible.

Adherence to the State Department of Health (DOH) property line noise limits of 60 dBA and 50 dBA from fixed machinery (such as air conditioning, kitchen fans and ecolocy units, and refrigeration equipment) during the daytime and nighttime periods,

respectively, will be required by Reference 4. Adherence to these limits by inclusion of acoustical design features of the buildings on the project site should minimize risks of adverse noise impacts at nearby residences from these fixed machinery. During Project construction activities, adherence to the State DOH permit procedures and curfew periods should also minimize risks of adverse noise impacts at nearby residences. Excessive noise from construction equipment are normally permitted during weekdays from 7:00 am to 6:00 pm (excluding holidays), and from 9:00 am to 6:00 pm on Saturdays.

Other potential noise impacts at existing residences across Pahoe Road are possible due to noise from the planned restaurant at the north end of the project site. The amount of sound emanating from the restaurant would typically be highest when amplified voice and/or music venues occur at the restaurant, and particularly if closure and air conditioning are not included within the construction features of the restaurant building. If amplified voice or music venues are not expected to occur at the restaurant (say, similar to a Zippy's restaurant), risks of potential noise impacts from future operations at the restaurant should be low. If amplified voice or music venues may occur at the restaurant, and if a liquor license is obtained by the operator of the restaurant, the local Liquor Commission could enforce any noise exceedances under its rules, which are similar to the daytime and nighttime noise limits of the State DOH. If no liquor license is obtained by the operator of the restaurant, both the DOH and Liquor Commission noise limits would not be applicable to the noise exceedances from amplified voice or music at the restaurant. For this reason, closure and air conditioning of the sections of the restaurant where interior noise levels above 80 dBA are possible is the recommended noise mitigation measure for the restaurant. The construction of the exterior envelope of the restaurant should also be acoustically designed to reduce exterior noise levels to 45 dBA or less at the closest noise sensitive residence.

Noise levels may increase at the neighboring residence across the northeast corner of the project site due to activities in the project's the parking lot. The noise from parking lots adjacent to residences can cause complaints, particularly if the noise is associated with boisterous activities in the parking lot, and particularly if it occurs during the late night or early morning hours. If the boisterous activities in the parking lot are associated with operation of the establishment with a liquor license, the Liquor Commission may be able use its regulatory powers to control the boisterous activities. The responsible tenant or manager of the Commercial Center will probably be required to implement administrative controls to resolve any noise complaint. To reduce the risks of potential noise impacts from boisterous activities in the parking lot, the use of a solid (without see-through openings or cracks) wall along the project property line adjacent to residence(s) is recommended.

Let me know if you have any questions regarding this report, or if you need any additional information.

Sincerely,

Yoichi Ebisu, P.E.

encl.

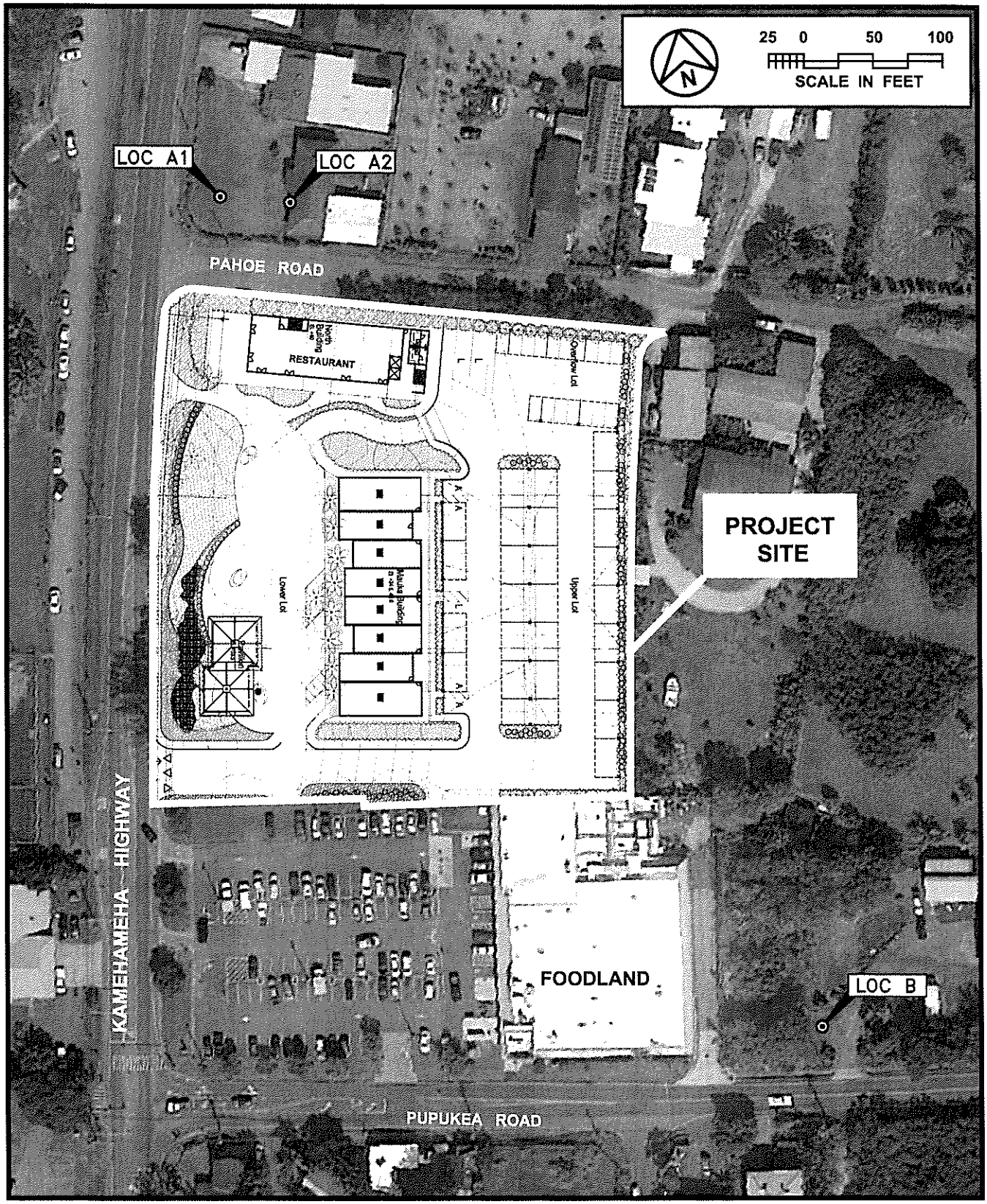
References.

1. Fehr & Peers; Draft Transportation Impact Analysis Report, Hanapohaku Commercial Center; June 23, 2017.

2. "FHWA Highway Traffic Noise Model User's Guide;" FHWA-PD-96-009, Federal Highway Administration; Washington, D.C.; January 1998 and Version 2.5 Upgrade (April 14, 2004).

3. "Highway Noise Policy and Abatement Guidelines;" State of Hawaii, Department of Transportation, Highways Division and U.S. Department of Transportation, Federal Highway Administration; April 18, 2016.

4. "Title 11, Administrative Rules, Chapter 46, Community Noise Control;" Hawaii State Department of Health; September 23, 1996.



PROJECT LOCATION MAP AND NOISE MEASUREMENT LOCATIONS

FIGURE 1

TABLE 1
TRAFFIC NOISE MEASUREMENT RESULTS

	LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	------- Hourly Traffic Volume ------- AUTO	M.TRUCK	H.TRUCK	Measured Leq (dB)	Predicted Leq (dB)
A1	50 FT from Centerline of Kamehameha Highway (7/7/17)	1130 TO 1230	20	1,001	36	45	62.2	63.1
A2	100 FT from Centerline of Kamehameha Highway (7/7/17)	1130 TO 1230	20	1,001 92.5%	36 3.3%	45 4.2%	58.1	58.2
A1	50 FT from Centerline of Kamehameha Highway (7/7/17)	1600 TO 1700	27	1,166	16	26	62.8	63.0
A2	100 FT from Centerline of Kamehameha Highway (7/7/17)	1600 TO 1700	27	1,166	16	26	57.9	57.5
A1	50 FT from Centerline of Kamehameha Highway (7/8/17)	1130 TO 1230	30	1,178	26	29	64.4	64.2
A2	100 FT from Centerline of Kamehameha Highway (7/8/17) Saturday	1130 TO 1230	30	1,178	26	29	58.5	58.6

TABLE 1 (CONTINUED)
TRAFFIC NOISE MEASUREMENT RESULTS

	LOCATION	Time of Day (HRS)	Ave. Speed (MPH)	Hourly Traffic Volume AUTO	M.TRUCK	H.TRUCK	Measured Leq (dB)	Predicted Leq (dB)
B	50 FT from Centerline of Pupukea Road (7/7/17)	1330 TO 1430	30	282	8	8	58.3	58.1
B	50 FT from Centerline of Pupukea Road (7/8/17) Saturday	1330 TO 1430	33	260	5	2	57.2	57.2

TABLE 2

SUMMARY OF CY 2016 AND FUTURE YEAR (CY 2021) TRAFFIC VOLUMES

ROADWAY LANES	********** CY 2016 **********			***** CY 2021 (NO BUILD) ******			******** CY 2021 (BUILD) ********		
	MID VPH	PM VPH	SAT VPH	MID VPH	PM VPH	SAT VPH	MID VPH	PM VPH	SAT VPH
Kamehameha Hwy. North of Project Driveway (NB)	542	576	702	575	615	745	600	635	768
Kamehameha Hwy. North of Project Driveway (SB)	498	648	607	530	690	645	540	695	670
Two-Way	1,040	1,224	1,309	1,105	1,305	1,390	1,140	1,330	1,438
Kamehameha Hwy. Between Pupukea Rd. and Project Drwy. (NB)	542	576	702	575	615	745	570	603	739
Kamehameha Hwy. Between Pupukea Rd. and Project Drwy. (SB)	498	648	607	530	690	645	505	657	613
Two-Way	1,040	1,224	1,309	1,105	1,305	1,390	1,075	1,259	1,352
Kamehameha Hwy. South of Pupukea Rd. (NB)	572	638	746	605	680	795	613	688	809
Kamehameha Hwy. South of Pupukea Rd. (SB)	563	705	657	605	750	695	615	760	709
Two-Way	1,135	1,343	1,403	1,210	1,430	1,490	1,228	1,448	1,518
Pupukea Rd. East of Kamehameha Hwy. (EB)	128	163	162	140	175	180	167	205	213
Pupukea Rd. East of Kamehameha Hwy. (WB)	161	152	168	180	165	185	220	219	244
Two-Way	289	315	330	320	340	365	387	424	457

TABLE 3

EXISTING (CY 2016) TRAFFIC VOLUMES AND NOISE LEVELS ALONG VARIOUS ROADWAYS IN PROJECT ENVIRONS (PM AND SAT PEAK HOUR)

LOCATION	SPEED (MPH)	TOTAL VPH	********* VOLUMES (VPH) ********** AUTOS	M TRUCKS	H TRUCKS	50' Leq	75' Leq	100' Leq
WEEKDAY PM PEAK HOUR:								
Kamehameha Hwy. North of Project Driveway	27	1,224	1,181	16	27	63.1	59.6	57.4
Kamehameha Hwy. Between Pupukea Rd. and Project Drwy.	27	1,224	1,181	16	27	63.1	59.6	57.4
Kamehameha Hwy. South of Pupukea Rd.	27	1,343	1,296	17	30	63.5	60.0	57.8
Pupukea Rd. East of Kamehameha Hwy.	30	315	303	5	7	57.9	54.5	52.7
SAT PEAK HOUR:								
Kamehameha Hwy. North of Project Driveway	30	1,309	1,251	27	31	64.5	61.0	58.7
Kamehameha Hwy. Between Pupukea Rd. and Project Drwy.	30	1,309	1,251	27	31	64.5	61.0	58.7
Kamehameha Hwy. South of Pupukea Rd.	30	1,403	1,340	29	34	64.8	61.3	59.0
Pupukea Rd. East of Kamehameha Hwy.	30	330	316	6	8	58.2	54.9	53.1

TABLE 4

FUTURE (CY 2021) TRAFFIC VOLUMES AND NOISE LEVELS ALONG VARIOUS ROADWAYS IN PROJECT ENVIRONS (PM AND SAT PEAK HOUR, BUILD)

LOCATION	SPEED (MPH)	TOTAL VPH	********* VOLUMES (VPH) ********** AUTOS	M TRUCKS	H TRUCKS	50' Leq	75' Leq	100' Leq
WEEKDAY PM PEAK HOUR:								
Kamehameha Hwy. North of Project Driveway	27	1,330	1,284	17	29	63.4	60.0	57.7
Kamehameha Hwy. Between Pupukea Rd. and Project Drwy.	27	1,259	1,215	16	28	63.2	59.8	57.5
Kamehameha Hwy. South of Pupukea Rd.	27	1,448	1,397	19	32	63.8	60.4	58.1
Pupukea Rd. East of Kamehameha Hwy.	30	424	407	7	10	59.2	55.9	54.1
SAT PEAK HOUR:								
Kamehameha Hwy. North of Project Driveway	30	1,438	1,373	30	35	64.9	61.4	59.1
Kamehameha Hwy. Between Pupukea Rd. and Project Drwy.	30	1,352	1,292	28	32	64.6	61.1	58.8
Kamehameha Hwy. South of Pupukea Rd.	30	1,518	1,450	32	36	65.1	61.6	59.3
Pupukea Rd. East of Kamehameha Hwy.	30	457	438	8	11	59.6	56.3	54.5

TABLE 5

YEAR 2016 AND 2021 DISTANCES TO 66 AND 71 LEQ CONTOURS (WEEKDAY PM AND SATURDAY PEAK HOUR, BUILD)

STREET SECTION	66 Leq SETBACK (FT)		71 Leq SETBACK (FT)	
	CY 2016	CY 2021	CY 2016	CY 2021
WEEKDAY PM PEAK HOUR:				
Kamehameha Hwy. North of Project Driveway	36	37	20	20
Kamehameha Hwy. Between Pupukea Rd. and Project Drwy.	36	36	20	20
Kamehameha Hwy. South of Pupukea Rd.	37	38	21	21
Pupukea Rd. East of Kamehameha Hwy.	19	22	10	12
SAT PEAK HOUR:				
Kamehameha Hwy. North of Project Driveway	42	44	24	25
Kamehameha Hwy. Between Pupukea Rd. and Project Drwy.	42	43	24	24
Kamehameha Hwy. South of Pupukea Rd.	44	45	24	25
Pupukea Rd. East of Kamehameha Hwy.	19	23	10	12

Notes:

(1) All setback distances are from the roadways' centerlines.
(2) See Tables 3 and 4 for traffic volume, speed, and mix assumptions.
(3) Setback distances are for unobstructed line-of-sight conditions.
(4) "Loose Soil" ground cover conditions assumed along all roadways.

TABLE 6

CALCULATIONS OF PROJECT AND NON-PROJECT TRAFFIC NOISE CONTRIBUTIONS (CY 2021) (WEEKDAY PM AND SATURDAY PEAK HOUR)

STREET SECTION	NOISE LEVEL INCREASE DUE TO: NON-PROJECT TRAFFIC	PROJECT TRAFFIC
WEEKDAY PM PEAK HOUR:		
Kamehameha Hwy. North of Project Driveway	0.30	0.00
Kamehameha Hwy. Between Pupukea Rd. and Project Drwy	0.30	-0.20
Kamehameha Hwy. South of Pupukea Rd.	0.20	0.10
Pupukea Rd. East of Kamehameha Hwy.	0.40	0.90
SAT PEAK HOUR:		
Kamehameha Hwy. North of Project Driveway	0.20	0.20
Kamehameha Hwy. Between Pupukea Rd. and Project Drwy	0.20	-0.10
Kamehameha Hwy. South of Pupukea Rd.	0.20	0.10
Pupukea Rd. East of Kamehameha Hwy.	0.30	1.10

APPENDIX H

PRELIMINARY ENGINEERING REPORT

Pūpūkea Rural Community Commercial Center

Pūpūkea, Haleʻiwa, Oahu
Tax Map Key: (1) 5-9-011:068, 069, 070

Preliminary Engineering Report

Prepared for:
Hanapohaku, LLC
59-716 Kamehameha Highway
Haleʻiwa, Hawaiʻi 96712

Prepared by:
Group 70 International, Inc.
dba G70
925 Bethel Street, 5th Floor
Honolulu, Hawaiʻi 96813

August 2017
Version 3
Project #216041-01

TABLE OF CONTENTS

TABLE OF CONTENTS i
LIST OF TABLES iii
LIST OF FIGURES iii
LIST OF APPENDICIES iii
1 Introduction 1
1.1 Project Background and Description 1
1.2 Purpose 1
1.3 Site Location 1
2 Roads and Access 1
2.1 Existing Conditions 1
2.1.1 Existing Vehicular Access 1
2.1.2 Existing Pedestrian Access 2
2.1.3 Existing Parking 2
2.2 Proposed Roads, Access and Parking 2
3 Water Infrastructure 2
3.1 Existing Conditions 2
3.1.1 Existing Water System 2
3.1.2 Existing Pressure and Flow Data 3
3.2 Proposed Water 3
3.2.1 Projected Water Demand 3
3.2.2 Proposed Water System 4
3.2.3 Proposed Fire Protection 4
4 Wastewater Infrastructure 4
4.1 Existing Wastewater Infrastructure 4
4.2 Proposed Wastewater Infrastructure 4
4.2.1 Design Parameters 4
4.2.2 Wastewater Flow Projection 5
4.3 Wastewater Pre-Treatment 6
4.3.1 Grease Interceptors 7

4.3.2 Pre-Loader (Septic Tank) 7
4.4 Wastewater Treatment 7
4.4.1 Single Basin Reactor – Cyclic Biological Treatment (CBT) 8
4.5 Wastewater Effluent Disposal 9
4.5.1 Absorption Bed 9
5 Drainage Infrastructure 9
5.1 Existing Conditions 9
5.1.1 Existing Soil Conditions 9
5.1.2 Existing Topography and Drainage Patterns 10
5.1.3 Existing Flood Hazards 11
5.2 Proposed Conditions 11
5.2.1 Proposed Grading and Erosion Control 11
5.2.2 Proposed Drainage Patterns 11
5.2.3 Proposed Low Impact Development Improvements 12
5.2.4 Offsite Drainage Improvements 12
6 Electrical and Telecommunications 13
6.1 Existing Services 13
6.2 Proposed Services 13

LIST OF TABLES

Table 1: Fire Flow and Pressure Data
Table 2: BWS Water Demands by Zoning
Table 3: Estimated Wastewater Flow
Table 4: Soil Properties
Table 5: Existing Conditions Hydrology
Table 6: Proposed Conditions Hydrology
Table 7: Solid Waste Generation

LIST OF FIGURES

Figure 1: Preliminary Site Plan
Figure 2: Vicinity Map
Figure 3: Location Map
Figure 4: Existing Conditions
Figure 5: DOH UIC Line and BWS Pass/No-Pass Line
Figure 6: Concept Site & Utility Plan
Figure 7: Soils Map
Figure 8: Flood Zones Map
Figure 9: Concept Grading & Drainage Plan

LIST OF APPENDICIES

Appendix A – BWS Letter
Appendix B – Wastewater Treatment and Disposal Alternatives – Fact Sheets, March 2008.
Appendix C – CBT Design Parameters

1 Introduction

1.1 Project Background and Description

There are three (3) parcels that make up the project site (TMK 5-9-011: 068, 069 & 070) and are all owned by Hanapohaku, LLC. Current tenant uses include a real estate office, a former dentist office, a surf shop, a boutique retail store, and five (5) outdoor food trucks.

The proposed Pūpūkea Rural Community Commercial Center Project (herein referred to as the "Project") is a planned commercial redevelopment consisting of two (2) 2-story commercial buildings and a 1-story pavilion building with ancillary support facilities (e.g. parking and loading spaces, walkways, and open recreational area). The total building area is approximately 27,000 square feet (SF). **See Figure 1: Preliminary Site Plan.**

1.2 Purpose

The purpose of this Preliminary Engineering Report is to assess the existing and proposed civil infrastructure at the property. This report will evaluate the adequacy of the existing roadway, water, sewer and drainage conditions to accommodate the proposed rural community commercial development.

1.3 Site Location

The project site is located in the Pūpūkea ahupua'a of the island of O'ahu. It is confined by Pahoe Road to the north, makai by Kamehameha Highway, mauka by a residential property, and Foodland to the South. The parcels are currently zoned Neighborhood Business District (B-1) and is within the Urban State Land Use District. The parcel is within the Special Management Area (SMA) and has a Special Use Permit (Minor) for current activities (2017/SMA-21). The proposed project will require a Special Use Permit (Major). **See Figure 2: Vicinity Map and Figure 3: Location Map.**

2 Roads and Access

2.1 Existing Conditions

2.1.1 Existing Vehicular Access

Primary access to the property is provided via Kamehameha Highway, located along the western edge of the property. The portion of Kamehameha Highway adjacent to the property consists of a 50-foot right-of-way and a posted speed limit of 35 miles per hour (mph). The right-of-way is owned and maintained by the State of Hawaii and contains two delineated vehicular travel lanes without sidewalks. Left-turn lanes are provided on Kamehameha Highway at its intersection with Pūpūkea Road.

Although parcel 070 has rights to access Pahoe Road, there is no permitted vehicular access along Pahoe Road by recorded agreement of the land owners fronting the roadway. **See Figure 4: Existing Conditions.**

2.1.2 Existing Pedestrian Access

There are no existing sidewalks or designated walkways along Kamehameha Highway fronting the property. There are pedestrian crosswalks at the intersection of Kamehameha Highway and Pūpūkea Road at the southwestern corner of the rural community commercial center including Foodland, near the vicinity of the property.

2.1.3 Existing Parking

Delineated parking stalls are provided onsite. While no street parking is allowed along Kamehameha Highway or Pahoe Road, vehicles are regularly observed parking along the portions of Kamehameha Highway opposite the project site.

2.2 Proposed Roads, Access and Parking

Vehicular access to the site will continue to be from Kamehameha Highway. A joint development agreement with Foodland identifies the desire to include ingress and egress between properties to achieve the mutual benefits of an integrated neighborhood shopping center without obstructing walls or fences between properties. Foodland's existing ingress/egress driveways off of Kamehameha Highway will be removed and consolidated into a single driveway. The existing ingress/egress from Pūpūkea Road to the Foodland Parking lot will be maintained.

Based on Fehr & Peers' Transportation Impact Analysis Report (TIAR), vehicular and pedestrian traffic is expected to increase. However, the addition of project trips is not expected to significantly impact the Kamehameha Highway/Pūpūkea Road intersection. Improvements will be provided along the Kamehameha Highway to accommodate vehicular and pedestrian access to the site. Kamehameha Highway will be restriped with a shared center-turn lane for vehicles entering the property from the North and exiting the property to the South.

Onsite parking will meet Land Use Ordinance requirements and consist of a total of 126 stalls located along the front of the mauka building and at the back of the property.

3 Water Infrastructure

3.1 Existing Conditions

3.1.1 Existing Water System

Potable water in the general area is provided by the Honolulu Board of Water Supply (BWS). Per record drawings there is an existing 16-inch water main along Kamehameha Highway and another existing 8-inch water line along Pahoe Road. The existing 16-inch water main on Kamehameha

Highway currently only provides water service to parcel 068 via an existing water lateral and 1-inch water meter. The existing meter, number 02403605, is still in use per BWS information.

3.1.2 Existing Pressure and Flow Data

There are a total of four (4) fire hydrants located along Pahoe Road, Kamehameha Highway, and Pūpūkea Road. BWS has provided information for two (2) existing BWS fire hydrants (C-00036 & C-02048), which are located along Kamehameha Highway and on Pahoe Road. Although BWS has suspended fire flow tests on fire hydrants as a water conservation measure, BWS provided the following calculated flow data for both fire hydrants:

Table 1: Fire Flow and Pressure Data

Location	Kamehameha Hwy	Pahoe Road
Fire Hydrant No.	C-00036	C-02048
Static Pressure	82 psi	72 psi
Residual Pressure	56 psi	43 psi
Flow	1,000 gpm	1,000 gpm

The residual pressure represents the theoretical pressure at the point of calculation based on BWS hydraulic model at the specified flow rate. The static pressure is not indicative of the actual pressure in the field.

3.2 Proposed Water

3.2.1 Projected Water Demand

Based on high level planning guidelines for commercial zoning, the BWS's Water System Standards (2002) indicates an average daily demand consumption of 3,000 gallons per acre for commercial developments. BWS recommends a factor of 1.5 be applied to the average daily demand to obtain the maximum daily demand. The breakdown of water demand for full development of the proposed zoning can be seen in Table 2 below.

Table 2: BWS Water Demands by Zoning

Zoning	Acres	Daily Demand (gallons/acre)	Average Daily Demand (gallons)	Maximum Daily Demand (gallons)
Commercial	2.72	3,000	8,160	12,240

The current layout of the proposed development limits the Maximum Daily Demand below what will be allotted for new developments in this area. The site will be fully developed. However, there is no concern for water availability.

A submittal was made to BWS Project Review Section in June 2017 to verify water availability and a letter was received, dated July 21, 2017, confirming the system could accommodate the changes that the project entails. The letter is attached for reference in Appendix A.

3.2.2 Proposed Water System

The proposed development will probably install one (1) water meter per building, if allowed by BWS' meter requirements, to provide domestic water service to the development. The meter size and placement will be determined during design and will be dependent on the actual tenant mix and design.

3.2.3 Proposed Fire Protection

Per BWS, the fire flow requirement for commercial developments is 2,000 gpm for two (2) hours. BWS stated that offsite fire protection is adequate to accommodate the proposed development. As such, onsite fire protection improvements are not needed. In addition, all the buildings are anticipated to have a fire sprinkler system, and all buildings will have adequate vehicular access. Therefore, the development will have adequate fire protection for access and fire flow. The requirements will be coordinated during design.

4 Wastewater Infrastructure

4.1 Existing Wastewater Infrastructure

Except for a development in Waialua, there is no municipal wastewater collection system on the North Shore. The City and County of Honolulu (City) does not have plans to construct a new regional system for the North Shore area within the proposed development schedule. An on-site wastewater treatment system suitable for the rural community commercial center uses will be installed, with approval from the State Department of Health.

According to the Department of Health (DOH) records, there is an Individual Wastewater System (IWS) located on TMK 5-9-011:068. In April of 2016, the owner voluntarily upgraded the IWS to an aerobic treatment unit (previous IWS #54311).

4.2 Proposed Wastewater Infrastructure

4.2.1 Design Parameters

Since the project site will not be served by a municipal sewer collection system, an onsite wastewater treatment and disposal system must by constructed as part of the proposed development. Wastewater effluent disposal is anticipated to be permissible because the site is situated makai of the Board of Water Supply's "No-Pass Zone." In addition, the proposed site is located mauka of the State Department of Health's "Underground Injection Control (UIC) Line," a boundary line that delineates between non-drinking water aquifers and underground sources of drinking water. Based on §11-23-05 (c), "*In areas where the UIC line is defined by a roadway, a setback of one lot or one hundred fifty feet, whichever is less, from the mauka property line of that roadway may be considered to be within the exempted area.*" Therefore, injection wells may be used for disposal of treated wastewater effluent. **See Figure 5: DOH UIC Line and BWS Pass/No-Pass Line.**

The project is looking at using absorption beds for wastewater disposal. The treatment and disposal of wastewater is regulated by the State of Hawaii Department of Health, under the Hawaii Administrative Rules (HAR) Title 11, Chapter 62 (§11-62). HAR §11-62 allows two options of onsite wastewater treatment for the project site:

1. A centralized wastewater treatment plant (WWTP); or
2. Multiple IWS at a maximum design flow of 1,000 gallons per day (gpd) per IWS.

In order to qualify an IWS, developments involving buildings other than dwellings must also meet the following criteria from HAR §11-62-31.1:

1. Minimum 10,000 square feet (sf) of usable land area for each IWS, exclusive of the area under the building;
2. Total wastewater flow shall be equal to or less than 15,000 gpd; and,
3. Area of the lot shall not be less than 10,000 sf except for lots created and recorded before August 30, 1991. For lots less than 10,000 sf which were created and recorded before August 30, 1991, only one IWS shall be allowed.

In either case, centralized WWTP or multiple IWS installations, the various parcels at the project site must be developed under joint agreement. Depending on the design, either a WWTP or multiple IWS may be allowed for wastewater disposal.

4.2.2 Wastewater Flow Projection

A preliminary wastewater report was completed by Enviniti, LLC. Hanapohaku, LLC provided anticipated building uses, floor areas, seat counts, and patron counts to Enviniti to estimate wastewater flow. The assumptions regarding density of employees and seats in each establishment are based on anticipated tenant mix and Gross Leasable Area (GLA).

The estimated density of employees will be 1 employee per 400 SF of GLA, which is slightly higher than the minimum numbers listed for the Building Code occupancy. The estimated density of seats will be 30 SF/seat in the restaurant. The Urgent Care density was estimated at 16 patients per hour for 10 hours of operation. Customer density was estimated at 1 customer per 30 SF. Additionally, a transient load was included to address the customers that will patrononize the Pūpūkea Rural Community Commercial Center.

Wastewater flow rates from Table 1 of HAR §11-62, Appendix D were used to calculate the projected wastewater flow. Relevant unit flows included:

- 20 GPD/employee in all establishments;
- 50 GPD/seat in restaurants;

- 5 GPD/person for customers; and,
- 2 GPD/parking stall for transient usage

Based on the values above, the average daily wastewater flow was projected to be 10,533 GPD. Projected wastewater flow assumptions and calculations are summarized below in Table 3, Estimated Wastewater Flow.

Table 3: Estimated Wastewater Flow

Unit Type	Interior Area	Occupancy Factor	Units/day	Toilet Use Factor	gpd/unit	Flow (gpd)	
Restaurant (Sit-Down)	3,860 sf	1:400	10 employees	100%	20	200	6,650
		1:30	129 seats	100%	5	6,450	
Food & Beverage Subtotal	3,860 sf					6,650	
Urgent Care (16 patients/hour)	2,500 sf	1:400	6 employees	100%	20	120	920
		10 hours	160 patients	100%	5	800	
Health Food Store	4,000 sf	1:400	10 employees	100%	20	200	535
		1:30	133 customers	50%	5	335	
Retail (North Building)	4,939 sf	1:400	12 employees	100%	20	240	655
		1:30	165 customers	50%	5	415	
Retail (Mauka Building)	6,113 sf	1:400	15 employees	100%	20	300	810
		1:30	204 customers	50%	5	510	
Offices	5,660 sf	1:400	14 employees	100%	20	280	755
		1:30	189 customers	50%	5	475	
Transient Usage	N/A	N/A	104 parking stalls	N/A	2	208	
Non-F&B Subtotal	23,212 sf					3,883	
Total	**27,072 sf**					**10,533 gpd**	

4.3 Wastewater Pre-Treatment

The proposed facility will have pre-treatment, as required by the City and most treatment system manufacturers. Additional information on pretreatment alternatives is summarized on DOH fact sheets in Appendix B, *"Wastewater Treatment and Disposal Alternatives – Fact Sheets," March 2008.*

4.3.1 Grease Interceptors

The introduction of Fats, Oils and Greases (FOG) into a sewer system can cause detrimental effects on the environment due to higher Biochemical Oxygen Demand (BOD) levels in wastewater effluent, increased odor complaints due to grease build-up, and sewage spills due to clogged pipes, pumps or disposal fields. These problems can be avoided by installing grease interceptors that utilize settling chambers and baffled pipe connections to separate FOG from wastewater before it enters the sewer system.

The Uniform Plumbing Code (UPC) and the City require grease interceptors at establishments where grease may be introduced into the drainage or sewage system. The restaurant at the proposed site will operate and maintain its own grease interceptor.

4.3.2 Pre-Loader (Septic Tank)

Similar to the primary treatment process in large wastewater plants, the septic tank removes substances and objects that can harm pumps and advanced treatment equipment while improving BOD and other effluent quality levels before secondary treatment.

Solid removal occurs when the pre-loader decreases wastewater velocity and turbulence, allowing Total Suspended Solids (TSS) to separate from the waste stream. These solids migrate to the bottom or top of the tank to form sludge and scum layers. A baffle on the effluent end of the pre-loader allows clarified water to proceed to secondary treatment without disturbing the sludge and scum layers. Although anaerobic bacteria break down solids in the tank, buildup of solids may require periodic removal by a septic pumper. Due to differing conditions, some tanks accumulate solids faster than others and should be initially pumped and monitored quarterly until a frequency pattern is established.

Given the high benefit to cost ratio provided by pre-loaders, wastewater at the proposed facility will be treated at specified locations in pre-loaders before being pumped to additional treatment units.

4.4 Wastewater Treatment

Due to the close proximity to Sharks Cove, additional wastewater treatment (i.e. secondary treatment and disinfection) may be required by DOH. An aerobic treatment unit (ATU) system that utilize secondary treatment processes to obtain the desired effluent quality and achieve an added level of protection.

ATU's are typically used when effluent quality must be higher than that provided by septic tanks. There are different types of ATU, but all use mechanical components to oxidize organic material, decrease TSS and reduce pathogens.

Similar to the secondary treatment process in large wastewater plants, the ATU's discussed in this report break down biological content in the waste stream with the following processes:

- Aeration – Aerobic bacteria digest biological waste in wastewater through suspended growth, attached growth or a combination of both.

- Settling – Sludge and undigested solids settle out of the wastewater. A small portion of activated sludge is kept in the aerobic unit to seed influent wastewater while the remaining sludge is stored until the tank is pumped.
- Disinfection – This optional stage consists of killing or inactivating microorganisms in the waste stream and is required to achieve R-2 water. Typical disinfection methods consist of chlorination or application of ultraviolet light (UV). Many ATU manufacturers incorporate chlorine disinfection in the treatment unit or in a unit immediately downstream from the ATU.

4.4.1 Single Basin Reactor – Cyclic Biological Treatment (CBT)

A SBR is an ATU that consists of a single basin in which all phases of treatment occur. Although the SBR considered for this project is a CBT system, designed by International Wastewater Technologies, Inc, similar systems can be considered during the design phase.

The defining feature of CBT is that it can receive continuous inflow of wastewater without disruption of treatment in the single basin, unlike the traditional SBR design that required multiple tank installations.

The aerobic treatment process occurs within the SBR as follows:

- Fill – Continuous inflow of wastewater is allowed into the SBR.
- Aeration – CBT utilizes a suspended growth process where mechanical blowers pump air into the aerobic unit to create aerobic conditions. The blowers support growth of aerobic bacteria and create conditions to keep bacteria suspended in the wastewater.
- Settling – After the aeration phase, blowers shut off and wastewater velocity and turbulence decreases. In this phase, scum forms at the water surface, sludge settles at the bottom of the tank and clarified supernatant forms between the two. During this phase of CBT, anoxic conditions are created and denitrification occurs.
- Decant – Clarified supernatant is pumped out of the tank for disposal. Sludge wasting will follow removal of supernatant on an as-needed basis.
- Disinfection – An optional tablet chlorine feeder can be installed between the SBR and the disposal field to kill or inactivate remaining microorganisms and achieve R-2 quality water.

The treatment process is automated by a clock/microprocessor on 4-hour cycles. The same controller automatically coordinates all equipment and phases of the cycle, minimizing labor associated with system operation.

Design parameters are included in Appendix C, CBT Design Parameters.

4.5 Wastewater Effluent Disposal

4.5.1 Absorption Bed

The general public typically uses the term absorption bed synonymously with absorption trenches, regardless of the differences between the two. In this report, absorption bed is defined as a single, subsurface bed containing coarse aggregate and multiple rows of an effluent distribution system. Traditionally, the distribution method was through perforated pipe, but recurring clogs in perforated pipe led to the use of leaching chambers for distribution.

A geotechnical engineering exploration study was done by Geolabs on April 24, 2017. Field percolation tests were performed to evaluate the percolation characteristics of the subsurface soils for wastewater disposal. Based on the percolation tests conducted, the percolation rates at the site generally ranged between 31 and 60 minutes per inch. To ensure more permeable clayey soils are exposed at the bottom of the absorption fields, the planned bottom of the absorption fields will be over-excavated a minimum depth of about 3-feet and backfilled with approved granular materials. The geotechnical engineer believes a percolation rate of about 30 minutes per inch may be used for the 3-foot layer of granular materials placed over the in-situ clayey soils.

Based on the average daily wastewater flow of 10,533 gpd and a soil absorption ratio of 257 sf per 200 gallons (HAR §11-62 Appendix D, Table III), the minimum required absorption area is 13,535 sf. However, because the onsite wastewater system is considered a WWTP, full redundancy of the effluent disposal capacity must be provided. Therefore, a minimum effluent disposal area of 27,070 sf of absorption area is required.

The absorption beds will be located under the proposed parking lot to maintain accessibility by maintenance vehicles. The absorption bed disposal system (inclusive of 100% backup) will consist of six equally sized absorption beds at approximately 56′-8″ wide and 81′-3″long. This equates to 27,625 sf of absorption area, satisfying the 27,070 sf minimum area as calculated from HAR §11-62. The dosing pumps will be controlled such that flow will be equally distributed to each absorption bed. **See Figure 6: Concept Site & Utility Plan.**

5 Drainage Infrastructure

5.1 Existing Conditions

5.1.1 Existing Soil Conditions

Based on USDA Web Soil Survey, the project area consists of soil type Waialua silty clay (WkB) with 3% to 8% slopes. Soils at the property exhibit properties presented in Table 4, below. **See Figure 7: Soils Map.**

Table 4: Soil Properties	
Soil Type	**Waialua (3% to 8% Slopes)**
Drainage Class	Moderately well drained
Runoff Class	Low
Permeability	Low to very low (0.20 to 0.60 in/hr)
Depth to Restrictive Layer	More than 80 inches

The geotechnical engineering exploration study found the project site to be underlain with very stiff to hard silty clays and clays extending from the ground surface to depths of 13 to 22 feet below the existing ground surface. The geotechnical study performed percolation tests, which validate the USDA's general survey of the soil type. Percolation rates ranged between 0.12 in/hr to 0.42 in/hr.

5.1.2 Existing Topography and Drainage Patterns

The project site has a relatively moderate slope from the mauka side of the property towards Kamehameha Highway at an average slope of 5 percent. A topographic survey indicates elevations at the site range from 29 to 51 feet above Mean Sea Level.

Generally, storm runoff from the site flows overland across undisturbed vegetation, asphalt concrete pavement, and grass swales towards a rain garden. Existing runoff flows are identified in Table 5. Storm runoff either infiltrates on the property or travels offsite to the nearest drain inlet located south of the project along Kamehameha Highway. The drain connects to a 24-inch pipe and outlets into the Pacific Ocean. The drainage system along Kamehameha Highway is owned and maintained by the State of Hawaii, Department of Transportation, Highways Division (HDOT). In addition, there are a series of catch basins at the Pūpūkea Road-Kamehameha Highway intersection, which outlets further south by Three Tables Beach. The drainage facilities at the intersection are owned and maintained by the City and County of Honolulu.

Table 5: Existing Conditions Hydrology					
Tributary Area	**Discharge Point**	**C**	**I(10), (in/hr)**	**Area (ac)**	**Flow, Q (cfs)**
E-1	NE to SW direction, surface flow into Vegetated Swale	0.60	5.10	0.62	1.90
E-2	SW direction, surface flow into Vegetated Swale	0.77	5.10	0.61	2.39
E-3	SW direction, surface run-off to Kamehameha Highway	0.64	5.25	0.47	1.60
E-4	NE to SE direction, surface flow into Rain Garden	0.66	5.25	1.02	3.53
					9.42 cfs

5.1.3 Existing Flood Hazards

The project site is located within Flood Zone X of the Federal Emergency Management Agency's (FEMA) Flood Insurance Rate Map (FIRM). This indicates areas outside of FEMA's designated 500-year flood zone. There is a minimal to no threat of serious riverine or coastal flooding for the project. **See Figure 8: Flood Zones Map.**

5.2 Proposed Conditions

5.2.1 Proposed Grading and Erosion Control

The existing topography will be altered, to the extent necessary, for construction of the proposed improvements. Due to the high shrink/swell properties of the existing soils found onsite, additional non-expansive select granular material is recommended for the slabs-on-grade construction. A grading permit, approved by the City and County of Honolulu, Department of Planning and Permitting (DPP) and the State of Hawaii, Department of Land and Natural Resources, Historic Preservation Division, will be required for all grading activities.

Erosion control Best Management Practices (BMP) will comply with the State, County and Federal regulations during all phases of construction. A National Pollutant Discharge Elimination System (NPDES) general permit coverage authorizing discharges of storm water associated with construction activities will be required for the project from the State Department of Health, Environmental Management Division, Clean Water Branch.

5.2.2 Proposed Drainage Patterns

Storm runoff from the site will be collected through gutters, drain inlets, catch basins, trench drains, and pervious pavement. Collected flows will be transported through flow- and volume-based BMPs toward a detention system at the front of the project (along Kamehameha Highway). The detention system's proposed size was based on the Rules Relating to Storm Drainage Standards January 2000, Department of Planning and Permitting, City and County of Honolulu, which analyzes the 10-year, 1-hour recurrence interval. Table 6 shows hydrology under the proposed conditions as 18.39 cubic feet per second (cfs), an increase of 8.97 cfs from the existing conditions.

The additional 8.97 cfs is required to be detained onsite and is equivalent to approximately 16,146 cubic feet of storm water storage. Based on the latest site plan, storm water will be detained in subsurface chambers with a maximum capacity of 26,600 cubic feet. These chambers will detain storm water and discharge to HDOT's drainage system at a flow rate equal to the pre-development conditions. It's expected that the proposed improvements will not have an adverse impact to the downstream drainage system.

Table 6: Proposed Conditions Hydrology					
Tributary Area	**Discharge Point**	**C**	**I(10), (in/hr)**	**Area (ac)**	**Flow, Q (cfs)**
P-1	Mauka to makai surface flow through a vegetated swale and sand filter into detention chambers	0.77	8.25	0.39	2.48
P-2	Mauka to makai surface flow through a vegetated swale and sand filter into detention chambers	0.77	8.25	0.41	2.60
P-3	Mauka to makai surface flow and North building roof drains through a vegetated swale and sand filter into detention chambers	0.83	8.00	0.37	2.46
P-4	North building roof drains into vegetated planters, through vegetated swales and sand filter, and into detention chambers	0.85	8.25	0.13	0.91
P-5	Mauka building roof drains into rain gardens, through vegetated swales and sand filters, and into detention chambers	0.90	8.25	0.12	0.89
P-6	Mauka building roof drains and surface flow through pervious pavement, vegetated swales, sand filters, and into detention chambers	0.87	8.00	1.30	9.05
					18.39 cfs

5.2.3 Proposed Low Impact Development Improvements

The project's total disturbed area is expected to be greater than 1-acre, and the project will need to comply with the City's drainage standards which include storm water quality treatment BMPs utilizing a Low Impact Development (LID) approach. As required by the City standards, LID improvements and BMPs will be distributed and installed throughout the site where practical and feasible to improve storm water quality, and manage storm water quantity. The proposed project will maximize pervious and landscaped areas within the site.

Bioswales, rain gardens, planter boxes, sand filters, permeable pavers, and infiltration chambers will be utilized for LID. Based on preliminary soils information, infiltration may be suitable for the site if the coral layer is reached. However, the site's clay layer ranges from 13 to 22 feet below the existing grade. Excavation to reach the coral layer may be infeasible due to the high costs of construction. As a result, all storm runoff will be detained onsite to attenuate the peak runoff flow. **See Figure 9: Concept Grading & Drainage Plan.**

5.2.4 Offsite Drainage Improvements

Foodland's existing ingress/egress driveways off of Kamehameha Highway will be removed, and new landscaping will be installed along the Kamehameha Highway frontage. Storm runoff will follow the existing drainage pattern and flow into the new landscaping. BMPs and storm water quality improvements will need to be designed per the LID requirements. If the post-development conditions are greater than the pre-development conditions, storm runoff detention will be required before connecting to HDOT's drainage system.

6 Electrical and Telecommunications

6.1 Existing Services

Existing overhead lines for power and telephone run along the makai side of Kamehameha Highway, North side of Pahoe Road, and South side of Pūpūkea Road. The site currently has electrical and telecommunication service provided from Kamehameha Highway and Pahoe Road.

6.2 Proposed Services

The electrical and telecommunication systems shall be designed and coordinated with HECo for electrical services and Spectrum or Hawaiian Telcom for telecommunication services.

Based on the design, electrical service could be provided from Kamehameha Highway and/or Pahoe Road. Onsite transformers will be needed for the North and Mauka buildings and for the wastewater treatment system. A transformer may not be needed for the building closest to Kamehameha Highway. Additionally, opportunities for onsite renewable energy can be designed to decrease the total electrical demand. The project is anticipating the inclusion of solar canopies over the mauka parking lot and on the roofs of the buildings. Design and evaluation of the onsite electrical and telecommunication utilities shall be done by a licensed electrical engineer.

FIGURES

Figure 1: Preliminary Concept Site Plan

Figure 2: Vicinity Map

Figure 3: Location Map

Figure 4: Existing Conditions

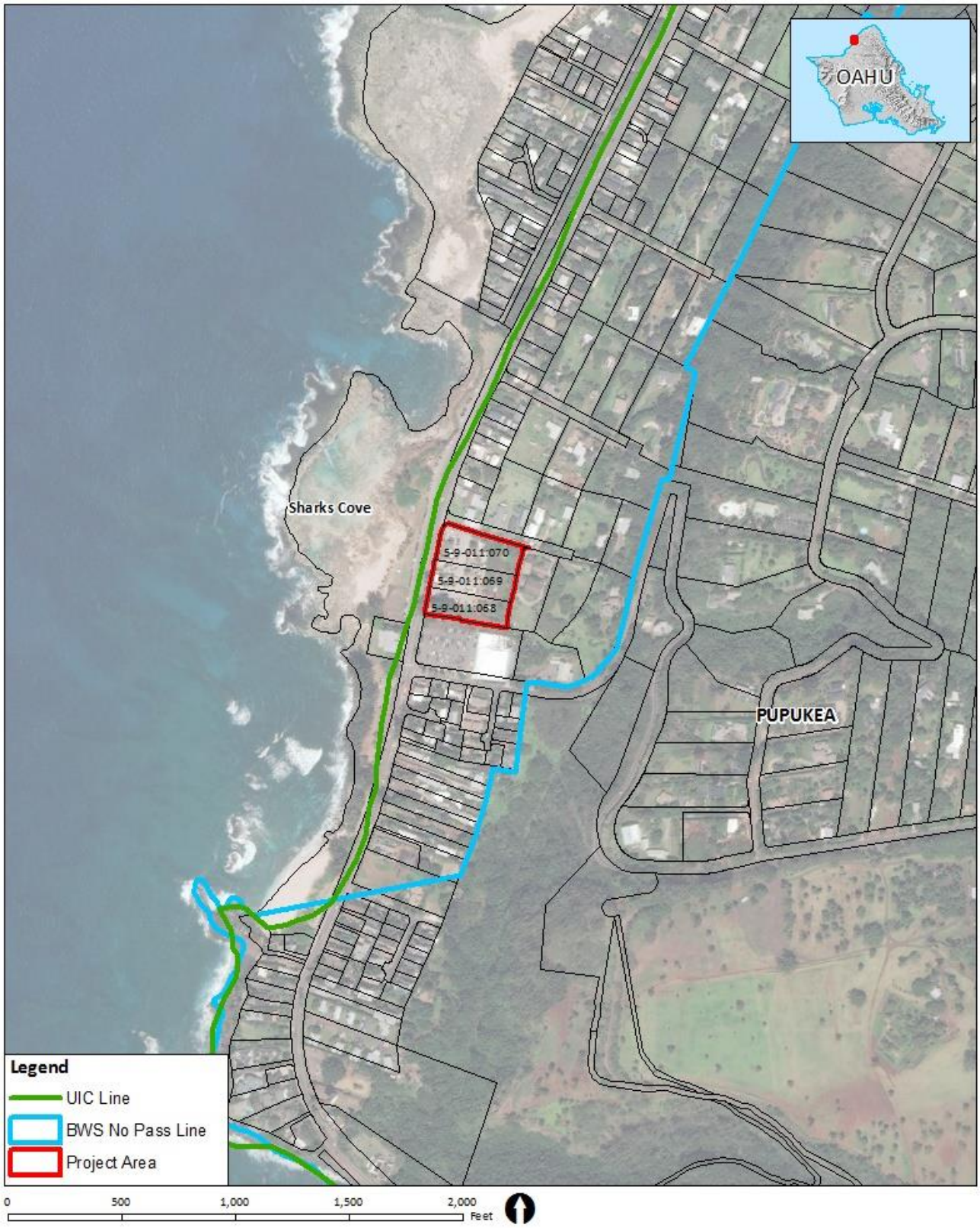


Figure 5: DOH UIC Line and BWS Pass/No-Pass Line

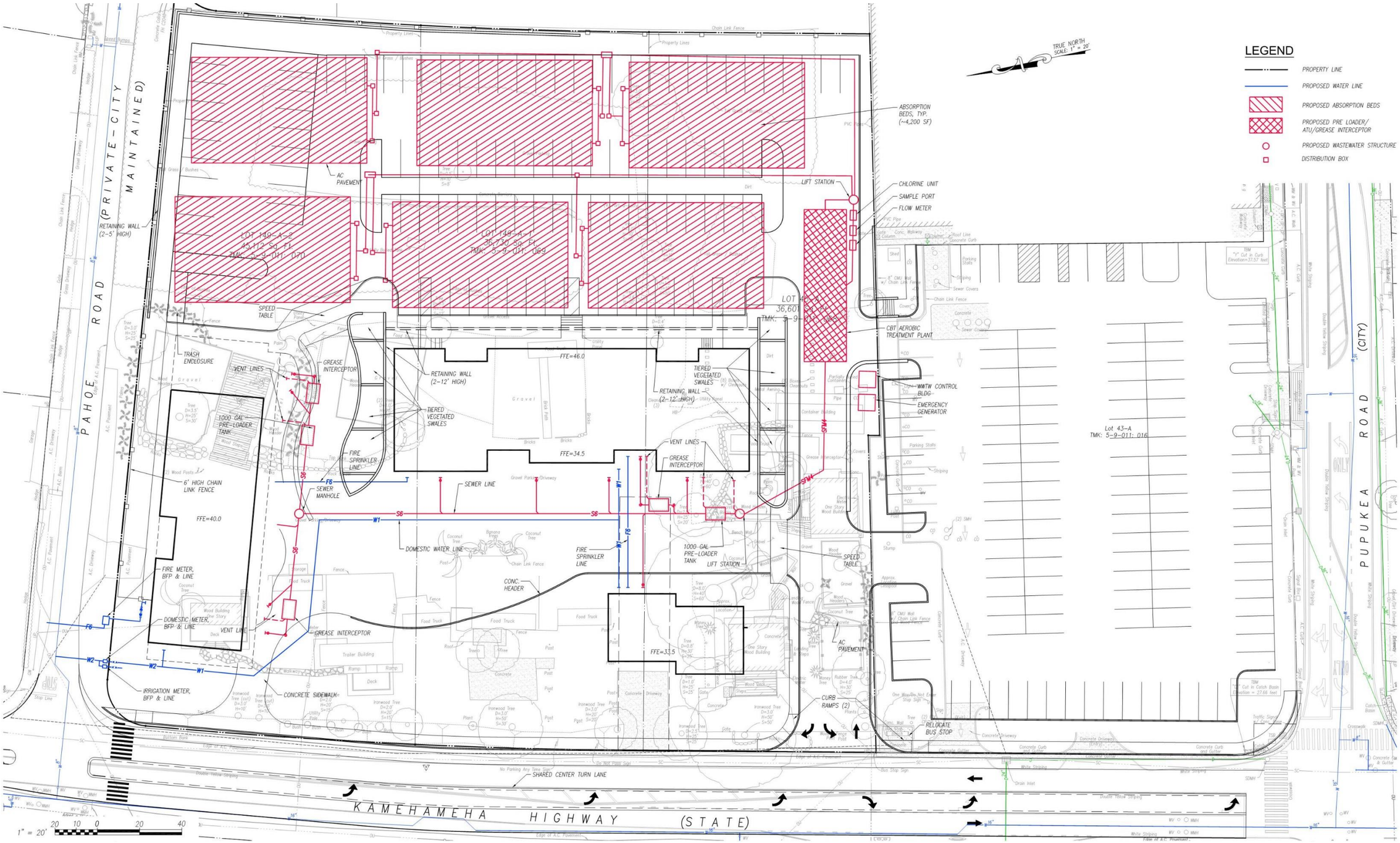


Figure 6: Concept Site & Utility Plan

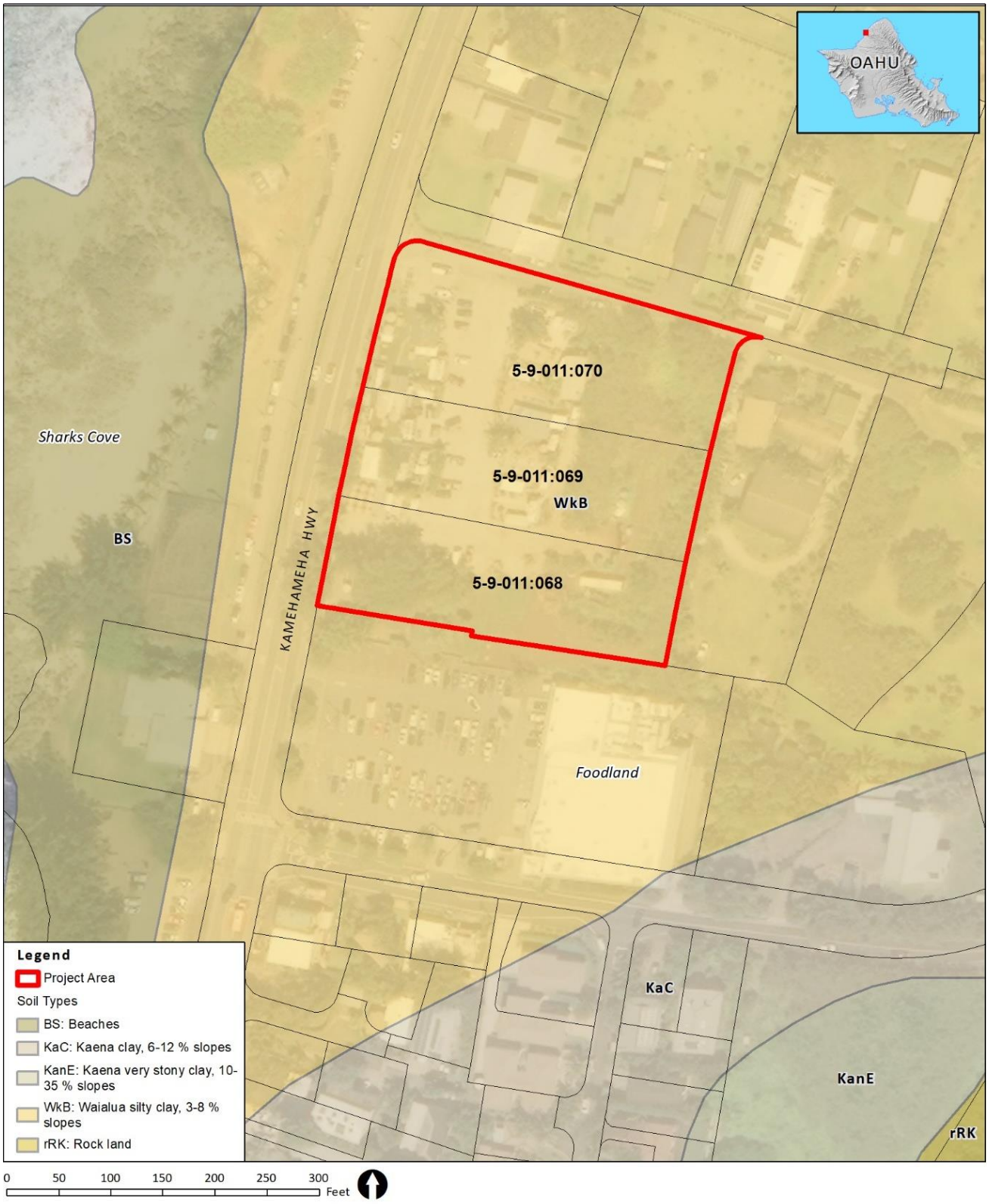


Figure 7: Soils Map

Figure 8: Flood Zones Map

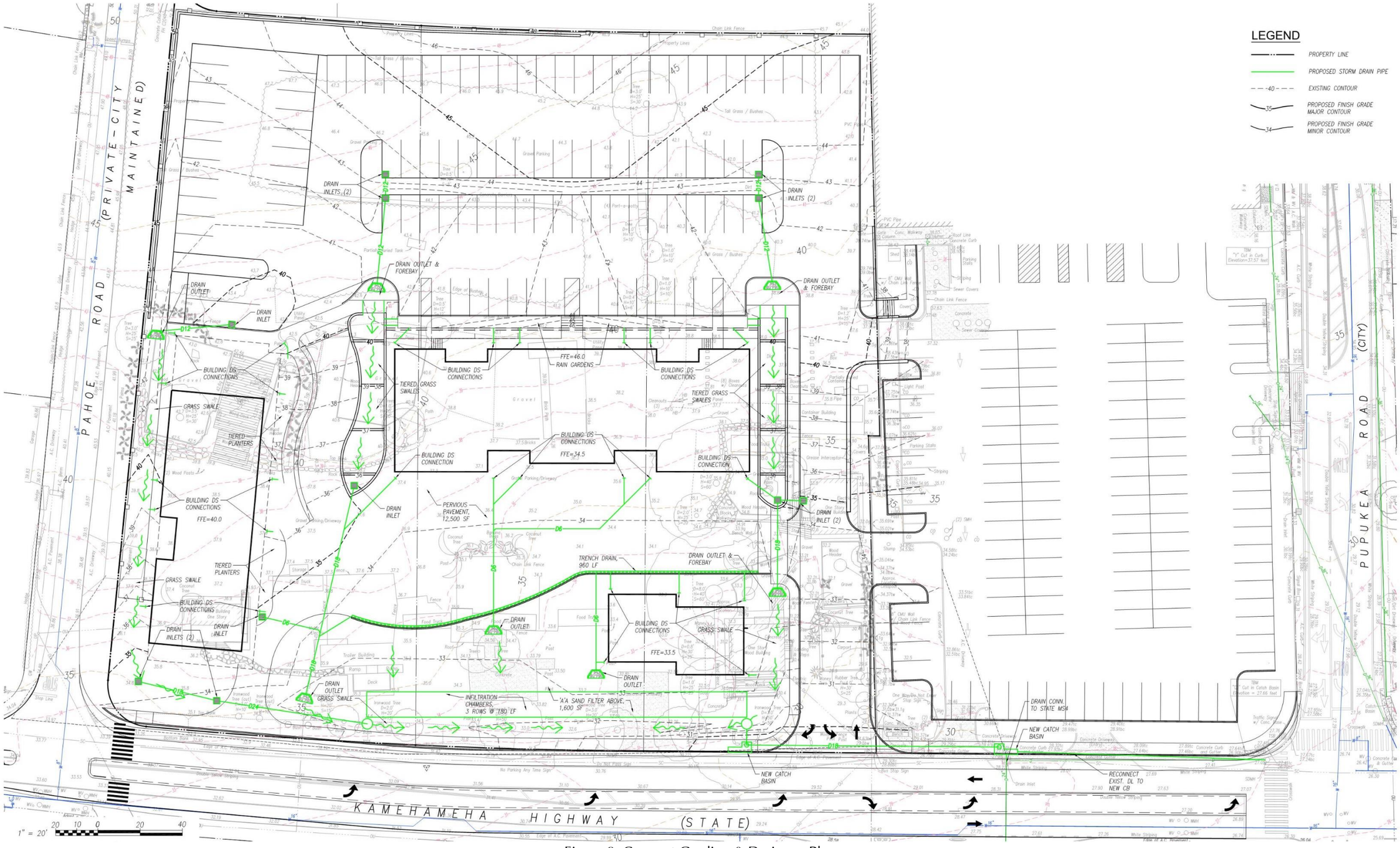


Figure 9: Concept Grading & Drainage Plan

APPENDIX A
BWS Water Availability Letter

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com

KIRK CALDWELL, MAYOR

BRYAN P. ANDAYA, Chair
DAVID C. HULIHEE
KAPUA SPROAT
KAY C. MATSUI

ROSS S. SASAMURA, Ex-Officio
FORD N. FUCHIGAMI, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

July 21, 2017

RECEIVED
JUL 25 2017
G70

Mr. Paul T. Matsuda, PE, LEED AP
Group 70 International, Inc.
925 Bethel Street, 5th Floor
Honolulu, Hawaii 96813

Dear Mr. Matsuda:

Subject: Your Letter Dated June 15, 2017 on the Availability of Water for the Proposed Three New Commercial Buildings at Pupukea Rural Community Commercial Center in Haleiwa – Tax Map Key: 5-9-011: 068, 069, 070

Thank you for your letter regarding the proposed three new commercial buildings in Haleiwa.

The existing water system is adequate to accommodate the proposed development. However, please be advised that this information is based upon current data, and therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of the building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The applicant should investigate the availability of nonpotable water for irrigation.

The on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

If you have any questions, please contact Robert Chun, Project Review Branch of our Water Resources Division at 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

APPENDIX B
Wastewater Treatment and Disposal Alternatives – Fact Sheets
March 2008

Septic Tanks Fact Sheet P-1

A septic tank is a tank that serves as both a settling and skimming tank. Grit and other solids settle to the bottom of the tank and create a layer of sludge. Oil, grease, fat, and other floatables rise to the top creating a layer of scum. Accumulated sludge and scum must be removed on a regular basis; failure to do so will lead to carryover of these materials into downstream systems leading to their failure. Where site conditions indicate higher quality effluent is required, septic tanks are used as pretreatment for other treatment systems, including biological treatment systems.

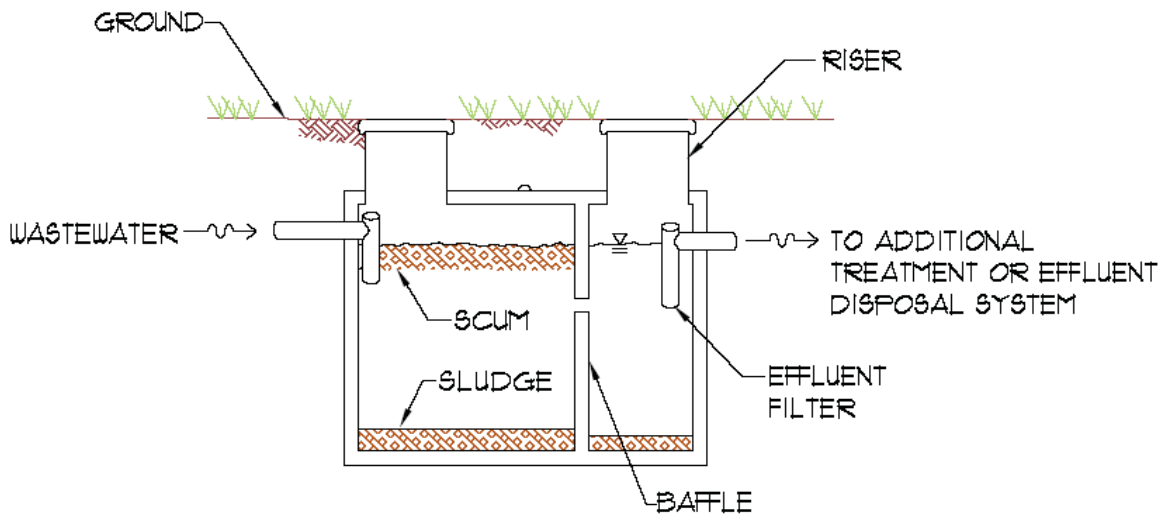


Figure 5-2 Typical Double Chambered Septic Tank

Considerations and Restrictions

A septic tank is purchased prefabricated, made of concrete or fiberglass, and it must meet the International Association of Plumbing and Mechanical Officials (IAMPO) material and property standards for prefabricated septic tanks. However, depending on site conditions, sometimes it is easier to construct a tank in-place. A constructed in-place septic tank must be designed in accordance with IAPMO specifications and stamped by a licensed structural engineer. Regardless of how a tank is constructed, it must be waterproof to prevent leakage and protected from corrosion in accordance with HAR 11-62, Subchapter 3.

The capacity of a septic tank is an important aspect in the treatment of wastewater prior to disposal. The required capacity of residential septic tanks can be referenced using HAR 11-62, Subchapter 3. The City and County of Honolulu “Design Standards of the Department of Wastewater Management” or the applicable county publication must be consulted.

A septic tank must be installed by a licensed contractor to comply with spacing and minimum distance requirements, as described in Chapter 3 of this document. Use of a septic tank requires the selection of a downstream disposal system (see Chapter 4).

Effluent Quality

In accordance with HAR 11-62, Subchapter 33, septic tank effluent must be discharged into a soil absorption system, a sand filter, a subsurface irrigation system (with director approval), or another treatment system. Septic tanks remove approximately 30% of BOD and 30% of TSS from typical domestic wastewater resulting in effluent quality of BOD ranging between 138 mg/L and 240 mg/L, and suspended solids in the range of 49 to 155 mg/L.

The DOH requires the installation of a screen on the effluent end of the septic tank to enhance solids removal and thereby prevent clogging of disposal systems. The effluent filter can be installed on the effluent tee on the inside of the septic tank, or in a separate structure outside the tank to facilitate access for required periodic cleaning, without which backups will occur.

Typical Installed Costs (2007)

A 1,000-1,250 gallon residential septic tank costs approximately $5,000-$12,000 installed, including material, equipment, and labor. An effluent filter is about $200-$700 installed. The cost of a septic tank does not include the disposal system (see Chapter 4).

Operation and Maintenance Costs

The decomposition rate of the solids that settle to the bottom of the tank and those that accumulate in the scum layer on the surface is slow, resulting in the accumulation of solids in the septic tank. Because of the accumulation of solids and scum, periodic pumping is required (every 2-3 yrs) to keep the tank functioning as designed and prevent solids from breaking and overflowing to the soil absorption system. The estimated cost for these pumping services range between $150 and $550 per visit. Assuming that the septic tank is pumped every 2-3 years, the equivalent cost is about $50-$200 per year. Pumping costs vary due to difficulty accessing the tank, haul distances, and limited pump truck capacity. Minimal use of kitchen sink grinders will help reduce the solids load, and extend the time between pumping of the septic tank and any downstream treatment units.

The effluent filter must be cleaned on a regular basis because of the growth of bacteria that will clog the filter. Frequency of cleaning is dependent on the size of the screen, environmental conditions, and type of wastewater entering the septic systems. Some manufacturers recommend cleaning every 1-3 years depending on level of use and site conditions. Cleaning consists of hosing off the filter into the septic tank and can be done by the homeowner.

Septic Tank Summary

Meets NSF 40 Standards	No	
Effluent BOD:	132-217	mg/L
Effluent TSS	49-161	mg/L
Removes 50% total influent nitrogen	No	
Effluent Nitrogen:	39-82	mg/L
Effluent Phosphorus:	11 -22	mg/L
Effluent Fecal Coliform:	1,000,000	/100 mL
Maintenance Level:	2-3 yrs	
Power Required:	No	
Typical Installed Cost:	$5,000-$12,000	/1,000 gal

A Sequencing Batch Reactor (SBR) is a form of ATU in which all of the aerobic and clarifying processes occur within a single tank. The tank may be constructed from concrete, fiberglass, or high-density polyethylene (HDPE). A SBR is designed to operate by sequencing through at least four (4) steps as follows:

1) FILL: tank is filled with wastewater to a predetermined volume or time;
2) AERATION: aeration is started with the suspended microorganisms in the wastewater;
3) SETTLE: aeration is turned off and the microorganisms settle to the bottom of the tank; and
4) DECANT: decant the clarified portion as effluent.

After decanting, the cycle repeats with filling again. By allowing the tank water level to vary, providing influent stilling zones, and only decanting during aeration off cycles, these single-tank systems can be designed to operate continuously. Of great importance to the SBR process is the control system consisting of timers, level sensors, and microprocessors.

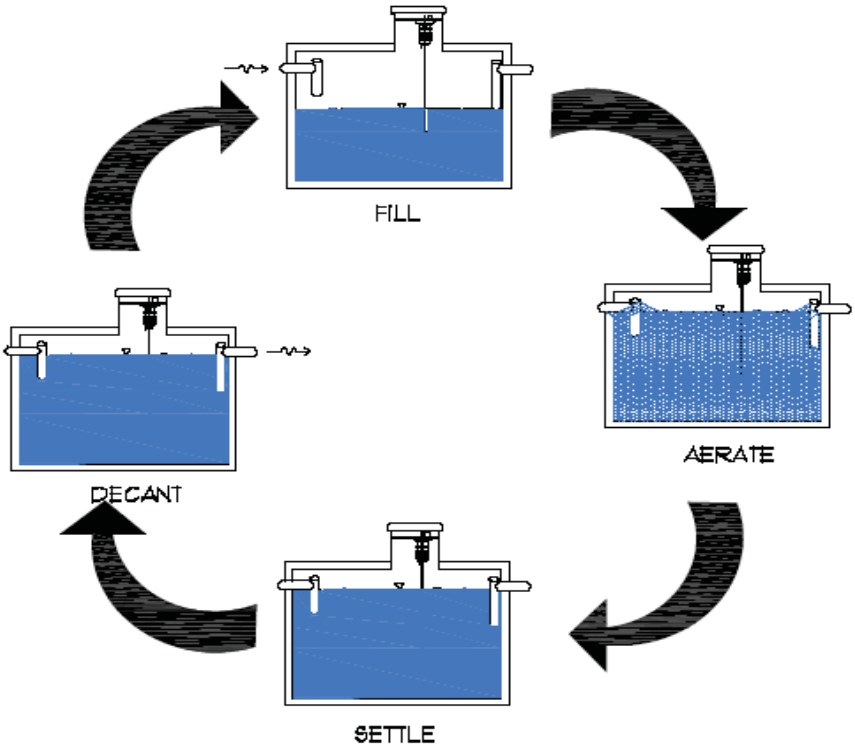


Figure 5-5 Cycles of an SBR / CBT

Considerations and Restrictions

SBRs are a type of suspended-growth ATU that can oxidize BOD and provide both nitrification and denitrification (enhanced nitrogen removal). SBRs require power, control, and monitoring and alarm systems. SBRs have mechanical equipment (pumps, blowers, decanters) which must be properly maintained to ensure optimal operation.

Use of an SBR system requires the selection of a disposal system (see Chapter 4).

Effluent Quality

Effluent from SBRs is of very good quality in terms of BOD and TSS. Typical ranges are from 5 –15 mg/L BOD and 10-30 mg/L of TSS.

SBRs will completely oxidize ammonia to nitrate via nitrification during the aeration cycle (aerobic cycle), and then facilitate nitrogen removal via denitrification during the settle and decant cycles (cycles that are anoxic). They can also provide enhanced biological phosphorus removal. The higher quality of effluent produced reduces the organic loading on the disposal system. SBRs also provide a consistent effluent, eliminating the fluctuations caused by varying influent loads.

Typical Installed Costs (2007)

Equipment costs range from $7,000-$9,000 with installation costs of $1,500-$3,000 based on Mainland costs. Current costs to install in Hawaii are in the range of $20,000 - $30,000. This cost does not include the cost for a preloader, if required, or the cost for a disposal system. See Septic Tanks (Sheet P-1) for a cost range for preloaders. See Chapter 4 for the costs of disposal systems.

Operation and Maintenance Costs

Annual energy costs are less than $600 and pumping and inspection costs are greater than $100. Trained professionals should manage the SBR system, which should be inspected every 3-4 months with sludge/scum pumping as needed. Homeowner neglect and/or interference can lead to operational malfunction. Alarms to warn of system failures are critical. Energy requirements are between 3 and 10 kW-h/day.

SBR Summary

Meets NSF 40 Standards	Yes	
Effluent BOD:	5-15	mg/L
Effluent TSS	10-30	mg/L
Removes 50% total influent nitrogen	Yes	
Effluent Nitrogen:	7-45	mg/L
Effluent Phosphorus:	2-10	mg/L
Effluent Fecal Coliform:	1,000,000	/100 mL
Maintenance Level:	Quarterly	
Power Required:	Yes	
Typical Installed Cost:	$20,000-$30,000	/1,000 gallons

Chlorination Fact Sheet C-1

Chlorine is the most commonly used chemical and/or method for disinfection of water and wastewater, and has a long history of use in the US. Chlorine is effective against a wide range of pathogenic organisms. Common forms of chlorine include chlorine gas, solid or liquid chlorine (calcium hypochlorite and sodium hypochlorite), and chlorine dioxide.

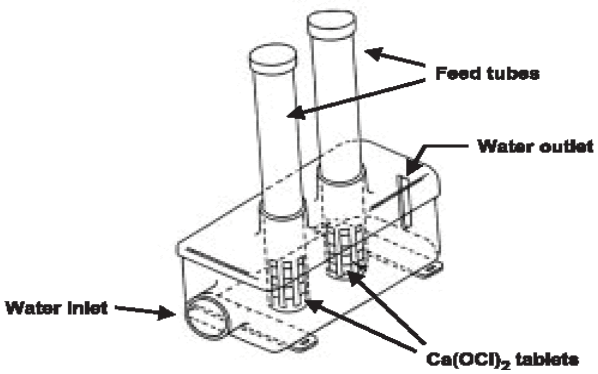


Figure 5-8 Tablet Chlorination Chamber (Adapted from USEPA)

Considerations and Restrictions

Gaseous chlorine is the most commonly used form; however, due to its highly corrosive nature and significant safety concerns, it is generally not recommended for onsite applications. Liquid hypochlorite solutions are commonly used at small treatment plants, where safety and simplicity are top priorities. Solid hypochlorite (powder or tablets) is common for onsite treatment systems (the same materials used for swimming pools and hot-tubs). All forms of chlorine are generally toxic and corrosive. They require careful handling and storage. The residual chlorine is effective as a disinfectant after the initial treatment. However, even at low concentrations, it can be toxic to aquatic life, and de-chlorination is necessary for discharges to (or impacting) surface waters.

Effluent Quality

One advantage of using chlorine as a disinfectant is its ability to exist as a residual in wastewater effluent even after initial treatment. Chlorine has been shown to reduce fecal coliforms by 99-99.99%.

Typical Installed Costs (2007)

A hypochlorite tablet feed system could cost $800-$1,000 for 1,000 gallons per day for the system itself. Labor and material costs vary depending on whether the tablet feeder is part of a pre-packaged system or added to an existing system. A gas chlorine system may cost $75,000 to treat 100,000 gallons per day.

Operation and Maintenance Costs

Operational costs for a tablet system are approximately $30-$50 per year for tablets, $75-$100 per year in labor, and $15-$25 per year in repairs and replacements.

Estimated cost for a gaseous chlorine system is approximately $4,500 for chemicals, $4000 for labor, $4,000 for power, and $6,000 for materials.

Operating and maintenance cost and tasks include power consumption, cleaning, chemicals and supplies, repairs, and labor.

Chlorination Summary

Meets NSF 40 Standards	NA	
Effluent BOD:	-	mg/L
Effluent TSS	-	mg/L
Removes 50% total influent nitrogen	NA	
Effluent Nitrogen:	-	mg/L
Effluent Phosphorus:	-	mg/L
Effluent Fecal Coliform:	1000-10000	/100 mL
Maintenance Level:	Quarterly	
Power Required:	No	
Typical Installed Cost:	$800-$1,000	/1,000 gallons

UV Disinfection Fact Sheet C-2

Ultraviolet (UV) light is a physical disinfection agent that takes advantage of the germicidal properties of UV in the range of 240-270 nm. This radiation penetrates the cell wall of organisms, preventing reproduction. The effectiveness of UV disinfection depends on the characteristics of wastewater (particularly clarity as measured by turbidity), UV intensity, time of exposure, and reactor configuration.

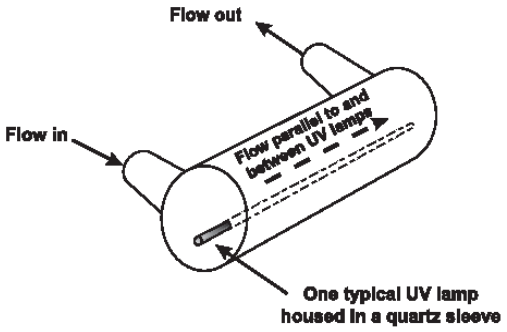


Figure 5-9 Ultraviolet Radiation Chamber (Adapted from USEPA)

Considerations and Restrictions

UV is effective in the inactivation of most viruses, spores, and cysts. UV eliminates the handling and storage of hazardous or toxic chlorine chemicals. However, UV performance is highly dependent on the quality of the wastewater it is disinfecting. High turbidity and total suspended solids will shield bacteria, making UV treatment ineffective.

Effluent Quality

UV disinfection is lacking in field studies, but typical units treating sand filter effluents can reduce fecal coliforms by 99.9%.

Typical Installed Costs (2007)

The component cost for a UV system is between $1,000-$2,000 per 1,000 gpd. Labor and material costs vary depending on whether the system is a built-in component of a packaged treatment system or added as an off-the-shelf component to enhance an existing system.

Operation and Maintenance Costs

Annual power costs are $35-$45, labor $50-$100, and lamp replacement $70-$80 per year. Power consumption is about 35 W or 307 kW-h/y.

UV Disinfection Summary

Meets NSF 40 Standards	NA	
Effluent BOD:	-	mg/L
Effluent TSS	-	mg/L
Removes 50% total influent nitrogen	NA	
Effluent Nitrogen:	-	mg/L
Effluent Phosphorus:	-	mg/L
Effluent Fecal Coliform:	~1,000	/100 mL
Maintenance Level:	Quarterly	
Power Required:	Yes	
Typical Installed Cost:	$1,000-$2,000	/1,000 gallons

Absorption Beds Fact Sheet D-5

Absorption beds are subsurface wastewater infiltration systems (SWIS) that have beds at least three feet wide. Absorption beds are similar to absorption trenches. For an absorption trench system, there is a distinct section of undisturbed soil between the absorption trenches. With an absorption bed, the area designated for disposal is excavated, and a layer of gravel is installed with the distribution pipe laid atop. In the case of gravelless systems, the plastic chambers are laid on the exposed soil. In essence, the wastewater will be spread over the entire area, instead of restricted to beneath the distribution pipe.

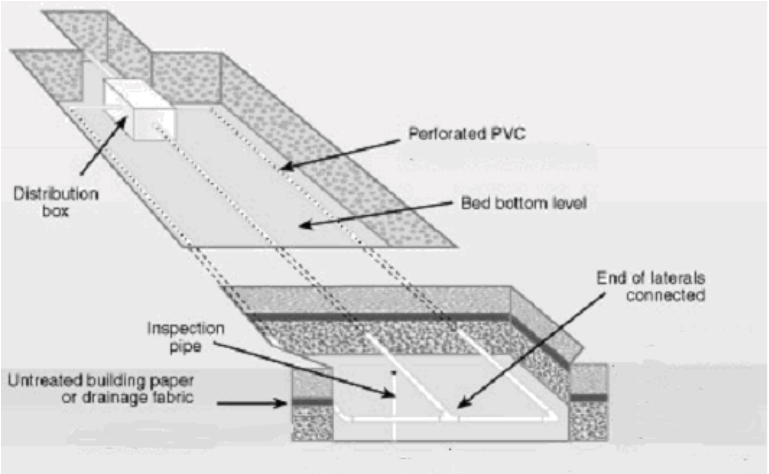


Figure 4-3 Bed disposal system (Adapted from Kent County, DE DPW)

Considerations and Restrictions

Beds are not allowed in terrain with slopes exceeding 8%. Since the entire area of the bed is considered as absorption area the total amount of land required is smaller compared to an absorption trench system. Roots from bushes and trees will damage the performance of the absorption system, therefore, root barriers should be utilized.

Effluent Quality

Effluent quality from an absorption bed will be similar to that of absorption trenches (see D-4).

Typical Installed Costs (2007)

These costs include excavation, gravel, piping, and/or plastic chambers/storage panels. Typical costs are about $7,000-$18,000 per 1,000 gpd of treated wastewater.

Operation and Maintenance Costs

Operational and maintenance issues are the same as for trenches. See Appendix A for tips extending the functional life of SWIS.

Absorption Beds Summary

Use in Steep Terrain		<8% slope
Use in High Ground Water Areas		No
Percolation Rate		Faster than 60 min/in
Relative Footprint When Compared To Conventional Drainfield		Medium
Maintenance Level:		Low
Power Required:		No
Typical Installed Cost:	$7,000-$18,000	/1,000 gallons

APPENDIX C
CBT Design Parameters

Preliminary Pretreatment Design

International Wastewater Technologies, Inc.
1931-A Kahai Street
Honolulu, HI 96819

PROJECT:	Pupukea Commercial Center
MODEL NUMBER:	PRE CBT13.0-500
DATE:	6.27.17
SITE LOCATION:	Pupukea, Oahu, Hawaii
ELECTRIC:	208-V, 3-Phase with 120-V for Controls.
	Honolulu, Hawaii 96806
BASIN:	Xerxes 14,000 Gal 26'-11-1/4" x 10.33 ft Diameter
BLOWERS:	3BA7610-OAT36
DIFFUSERS:	EDI FLEXAIR 91 x 762
PUMPS:	Ebara 50DWXU6.4

INFLUENT PROCESS PARAMETERS

AVERAGE DAILY WASTEWATER FLOW	0.011000	MGD
PEAK FLOW (4 HOUR DURATION)	0.011000	MGD
pH	6 -9	
BOD_5	500.00	mg/l
	53.83	lb/day
TSS	500.00	mg/l
	53.83	lb/day
NH_3-N	25.00	mg/l
	2.69	lb/day
TKN	45.00	mg/l
OIL & GREASE	< 100	mg/l
MINIMUM ALKALINITY ($CaCO_3$)	150.00	mg/l
MINIMUM PHOSPHORUS	5.00	mg/l
WASTEWATER TEMPERATURE	20	^oC
AIR TEMPERATURE	0 - 40	^oC
SITE ELEVATION	50	feet

EFFLUENT PROCESS PARAMETERS

AVERAGE DAILY WASTEWATER FLOW	0.011000	MGD
PEAK FLOW (4 HOUR DURATION)	0.011000	MGD
pH	6 -9	
BOD_5	To Treatment Unit	
	NA	
TSS	To Treatment Unit	
	NA	
NH_3-N	To Treatment Unit	
TKN	To Treatment Unit	

DESIGN PARAMETERS

MLVSS, @ BOTTOM WATER LEVEL (BWL)	9,093	mg/l
F:M RATIO	0.054	lb BOD_5 / lb MLVSS
SLUDGE AGE	70	days
CYCLES/DAY	1	cycles / day
LENGTH PER CYCLE	24	hours cycle
SLUDGE PRODUCTION	0.27	lb / lb BOD_5 removed
TOTAL SLUDGE PRODUCTION	14.24	lb / day

BASIN GEOMETRY

INSIDE DIAMETER	10.00	feet
OUTSIDE LENGTH	27.00	feet
BOTTOM WATER LEVEL (BWL)	8.67	feet
HIGH WATER LEVEL (HWL)	8.67	feet
TOP WATER LEVEL (TWL)	8.67	feet
ALARM WATER LEVEL (AWL)	8.42	feet
INFLUENT INVERT	8.91	feet
VOLUME @ BWL	13,148	gallons
VOLUME @ HWL	13,148	gallons
VOLUME @ TWL	13,148	gallons
DETENTION TIME @ BWL	24.44	hours
INFLUENT GATE HOUSING DIAMETER	6.00	inches
PRE-REACT ZONE WIDTH	0.00	feet
PRE-REACT ZONE LENGTH	0.00	feet
PRE-REACT ZONE BOTTOM HEIGHT	0.00	feet
INFLUENT GATE HOUSING BOTTOM HEIGHT	4.33	feet
NUMBER OF GATES	0	gates
SLUDGE STORAGE @ 8,500 mg/l	-5	days
SLUDGE PRODUCTION @ 8,500 mg/l	201	gallons / day

AIR SUPPLY

TOTAL OXYGEN REQUIREMENT (SOR)	186.61	lb / day
AIR SUPPLIED (FOR BIOLOGICAL REMOVAL)	45.34	scfm
BRAKE HP REQUIRED	1.94	brake HP
NUMBER OF OPERATING BLOWERS	1	blower(s)
NUMBER OF STANDBY BLOWERS	1	blower(s)
BLOWER HP	5.09	HP / blower
INSTALLED DIFFUSER LENGTH	30.28	inches
INSTALLED DIFFUSERS	8	diffuser(s)

DECANTER

NORMAL DECANT TIME	180	- 60 minutes
PEAK DECANT TIME	180	- 60 minutes
DECANT RATE	72	gal / min
NORMAL DECANT VOLUME	12,910	gallons
PEAK DECANT VOLUME	12,910	gallons
NUMBER OF PORTS PROVIDED	0	ports
EMERGENCY SETTLE TIME	0.00	min
TOTAL NUMBER OF PUMPS	0	pump(s)
BRAKE HP PER PUMP	0.00	HP / pump

MOTOR REQUIREMENTS

REACTOR BASIN AIR BLOWER(S)	91.62	KWH / day
EFFLUENT DECANTER PUMP	0.00	KWH / day
BLOWER HEAT OUTPUT	12,939	BTU

PROJECT:	Pupukea Commercial Center
MODEL NUMBER:	CBT13.0KFX300
DATE:	6.27.17
SITE LOCATION:	Pupukea, Oahu, Hawaii
ELECTRIC:	208-V, 3-Phase with 120-V for Controls.
	Honolulu, Hawaii 96806
BASIN:	Xerxes 35,000 Gal 64'-3/4" x 10.33 ft Diameter
BLOWERS:	3BA7610-OAT36
DIFFUSERS:	EDI FLEXAIR 62 x 762
PUMPS:	Ebara 50DWXU6.4

International Wastewater Technologies, Inc.
1931-A Kahai Street
Honolulu, HI 96819

INFLUENT PROCESS PARAMETERS

AVERAGE DAILY WASTEWATER FLOW	0.011000 MGD
PEAK FLOW (4 HOUR DURATION)	0.011000 MGD
pH	6 -9
BOD_5	Assumed 300.00 mg/l
	32.30 lb/day
TSS	Assumed 300.00 mg/l
	32.30 lb/day
NH_3-N	Assumed 25.00 mg/l
	2.69 lb/day
TKN	Assumed 45.00 mg/l
OIL & GREASE	< 100 mg/l
MINIMUM ALKALINITY ($CaCO_3$)	150.00 mg/l
MINIMUM PHOSPHORUS	3.00 mg/l
WASTEWATER TEMPERATURE	20 ^oC
AIR TEMPERATURE	0 - 40 ^oC
SITE ELEVATION	50 feet

EFFLUENT PROCESS PARAMETERS

AVERAGE DAILY WASTEWATER FLOW	0.011000 MGD
PEAK FLOW (4 HOUR DURATION)	0.011000 MGD
pH	6 -9
BOD_5	10.00 mg/l
	1.08 lb/day
TSS	10.00 mg/l
	1.08 lb/day
NH_3-N	1.00 mg/l
	0.11 lb/day
TKN	10.00 mg/l

DESIGN PARAMETERS

MLVSS, @ BOTTOM WATER LEVEL (BWL)	2,982 mg/l
F:M RATIO	0.055 lb BOD_5 / lb MLVSS
SLUDGE AGE	70 days
CYCLES/DAY	6 cycles / day
LENGTH PER CYCLE	4 hours cycle
SLUDGE PRODUCTION	0.27 lb / lb BOD_5 removed
TOTAL SLUDGE PRODUCTION	8.43 lb / day

BASIN GEOMETRY

INSIDE DIAMETER	10.00 feet
OUTSIDE LENGTH	64.08 feet
BOTTOM WATER LEVEL (BWL)	6.25 feet
HIGH WATER LEVEL (HWL)	6.67 feet
TOP WATER LEVEL (TWL)	6.75 feet
ALARM WATER LEVEL (AWL)	7.75 feet
INFLUENT INVERT	8.67 feet
VOLUME @ BWL	23,728 gallons
VOLUME @ HWL	25,576 gallons
VOLUME @ TWL	25,939 gallons
DETENTION TIME @ BWL	44.11 hours
INFLUENT GATE HOUSING DIAMETER	6.00 inches
PRE-REACT ZONE WIDTH	2.50 feet
PRE-REACT ZONE LENGTH	10.00 feet
PRE-REACT ZONE BOTTOM HEIGHT	1.00 feet
INFLUENT GATE HOUSING BOTTOM HEIGHT	3.38 feet
NUMBER OF GATES	3 gates
SLUDGE STORAGE @ 8,500 mg/l	130 days
SLUDGE PRODUCTION @ 8,500 mg/l	119 gallons / day

AIR SUPPLY

TOTAL OXYGEN REQUIREMENT (SOR)	123.22 lb / day
AIR SUPPLIED (FOR BIOLOGICAL REMOVAL)	82.07 scfm
BRAKE HP REQUIRED	2.57 brake HP
NUMBER OF OPERATING BLOWERS	1 blower(s)
NUMBER OF STANDBY BLOWERS	1 blower(s)
BLOWER HP	5.09 HP / blower
INSTALLED DIFFUSER LENGTH	29.92 inches
INSTALLED DIFFUSERS	16 diffuser(s)

DECANTER

NORMAL DECANT TIME	30 - 60 minutes
PEAK DECANT TIME	35 - 60 minutes
DECANT RATE	72 gal / min
NORMAL DECANT VOLUME	2,152 gallons
PEAK DECANT VOLUME	2,500 gallons
NUMBER OF PORTS PROVIDED	2 ports
EMERGENCY SETTLE TIME	34.79 min
TOTAL NUMBER OF PUMPS	1 pump(s)
BRAKE HP PER PUMP	0.50 HP / pump

MOTOR REQUIREMENTS

REACTOR BASIN AIR BLOWER(S)	45.81 KWH / day
EFFLUENT DECANTER PUMP	1.13 KWH / day
BLOWER HEAT OUTPUT	12,939 BTU