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ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

March 24, 2023

Ref: GL 6056

Mr. Scott Glenn, Director
Office of Planning and Sustainable Development
Environmental Review Program
State of Hawaii
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Subject: Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i, Tax Map Key (1) 4-1-009:279

Dear Mr. Glenn:

The Department of Land and Natural Resources (DLNR) herby transmits the Final Environmental Assessment and finding of no significant impact (FEA-FONSI) for the New Waimānalo Health Center Facility for publication in the next edition of the periodic bulletin. In 2015, DLNR awarded a 65-year lease to the applicant, Waimānalo Health Center (WHC). The proposed new facility will be situated on TMK (1) 4-1-009:279 along Kalaniana'ole Highway in Waimānalo on the island of O'ahu.

We respectfully submit the required items for publication including a searchable PDF file of the FEA. If there are any questions, please feel free to contact Oahu District Land Agent Barry Cheung at (808) 587-0430 or via email to barry.w.cheung@hawaii.gov. You may also contact WHC's consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at 808-596-7790 or via email to claire@tlcghawaii.com.

Sincerely,

Dawn N.S. Chang
Chairperson KEM RT

cc: Guy Bowker, WHC Facilities Director
Claire Oshiro, TLCG

From: webmaster@hawaii.gov
To: DBEDT OPSD Environmental Review Program
Subject: New online submission for The Environmental Notice
Date: Thursday, March 30, 2023 10:29:10 PM

Action Name

New Waimanalo Health Center Facility

Type of Document/Determination

Final environmental assessment and finding of no significant impact (FEA-FONSI)

HRS §343-5(a) Trigger(s)

- (1) Propose the use of state or county lands or the use of state or county funds

Judicial district

Koʻolaupoko, Oʻahu

Tax Map Key(s) (TMK(s))

(1) 4-1-009:279

Action type

Applicant

Other required permits and approvals

Numerous, identified in Final Environmental Assessment

Discretionary consent required

Use of state lands/use of state or county funds - Per the lease terms, structure or improvements plans require written approval by the DLNR Chairperson

Approving agency

Department of Land and Natural Resources, Land Division

Agency contact name

Barry Cheung

Agency contact email (for info about the action)

barry.w.cheung@hawaii.gov

Agency contact phone

(808) 587-0430

Agency address

PO Box 621
Honolulu, Hawaii 96809
United States
Map It

Applicant

Waimanalo Health Center

Applicant contact name

Guy Bowker

Applicant contact email

GBowker@waimanalohealth.org

Applicant contact phone

(808) 954-7121

Applicant address

41-1347 Kalanianaole Highway
Waimanalo, Hawaii 96795
United States
Map It

Was this submittal prepared by a consultant?

Yes

Consultant

The Limtiaco Consulting Group

Consultant contact name

Claire Oshiro

Consultant contact email

claire@tlcghawaii.com

Consultant contact phone

(808) 596-7790

Consultant address

1622 Kanakanui Street
Honolulu, Hawaii 96817
United States
Map It

Action summary

Waimanalo Health Center (WHC) is proposing a new, one-story health care facility to replace existing health care facilities on the project site. In 2015, the Department of Land and Natural Resources awarded a 65-year lease to the Applicant. The new facility will house the programs and services that WHC currently provides at the project site. WHC's project includes improvements to site infrastructure and the reconfiguration of the parking lot to increase patient parking space. Tree removal will occur to allow equipment to access and demolish old buildings. WHC intends to operate and deliver services to its patients during the various phases of demolition and construction.

Sustainable building design concepts will be utilized in the design and construction of the new facility. The recent pandemic provided opportunities to adjust waiting and gathering areas to achieve safe distancing requirements; the design of the proposed facility will incorporate outdoor space considerations.

Reasons supporting determination

HRS 343 significance criteria is discussed in Section 7, Determination of the Final EA

Attached documents (signed agency letter & EA/EIS)

- WHC-Final-EA.pdf
- DLNR-Ltr.pdf

Shapefile

- The location map for this Final EA is the same as the location map for the associated Draft EA.

Action location map

- WHC-site.zip

Authorized individual

Claire Oshiro

Authorization

- The above named authorized individual hereby certifies that he/she has the authority to make this submission.

Final Environmental Assessment for a New Waimānalo Health Center Facility Waimānalo, Oʻahu, Hawaiʻi

Prepared for:

WAIMĀNALO HEALTH CENTER

Approving Agency:
State of Hawaiʻi
Department of Land and Natural Resources, Land Division

Prepared by:

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

March 2023

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Final Environmental Assessment

for a

NEW WAIMĀNALO HEALTH CENTER FACILITY

Waimānalo, Oʻahu, Hawaiʻi

This environmental document has been prepared pursuant to
Chapter 343, Hawaiʻi Revised Statutes

Prepared For The Applicant:

Waimānalo Health Center
41-1347 Kalaniana‘ole Highway
Waimānalo, Hawaiʻi 96795

Approving Agency:

State of Hawaiʻi
Department of Land and Natural Resources, Land Division

Prepared By:

The Limtiaco Consulting Group
Civil Engineering and Environmental Consultants
1622 Kanakanui Street
Honolulu, Hawaiʻi 96817

March 2023

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Appendix D Cultural Impact Assessment Report
Appendix E Traffic Impact Analysis Report
Appendix F Consultation and Comments

LIST OF ABBREVIATIONS

Abbreviation	Definition
AFONSI	Anticipated Finding of No Significant Impact
ASYA	Aquifer System Area
BLNR	Board of Land and Natural Resources
BMPs	Best Management Practices
BWS	City and County of Honolulu Board of Water Supply
CAB	State of Hawaiʻi Department of Health, Clean Air Branch
CATV	cable television
CRB	Coconut Rhinoceros Beetle
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
DHHL	State of Hawaiʻi Department of Hawaiian Home Lands
DLNR	State of Hawaiʻi Department of Land and Natural Resources
DOFAW	State of Hawaiʻi Department of Land and Natural Resources, Division of Forestry and Wildlife
DOH	State of Hawaiʻi Department of Health
DOT	State of Hawaiʻi Department of Transportation
DPP	City and County of Honolulu, Department of Planning and Permitting
DTS	City and County of Honolulu, Department of Transportation Services
EA	Environmental Assessment
EmA	Ewa silty clay loam, moderately shallow, 0 to 2 percent slopes
FEA-FONSI	Final EA and Finding of No Significant Impact
FONSI	Finding of No Significant Impact
FQHC	Federally-Qualified Health Center
HAR	Hawaiʻi Administrative Rules
HECO	Hawaiian Electric Company, Inc.
HFD	Honolulu Fire Department
HPD	Honolulu Police Department
HRS	Hawaiʻi Revised Statutes

LIST OF ABBREVIATIONS (Continued)

Abbreviation	Definition
HRSA	Health Resources and Services Administration
IBC	International Building Code
IRHB	State of Hawaii Department of Health, Indoor and Radiological Health Branch
LUO	City and County of Honolulu Land Use Ordinance
MCTAB	Marine Corps Training Area Bellows
MGD	million gallons per day
NFPA	National Fire Protection Association
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
OEQC	Office of Environmental Quality Control
OHA	Office of Hawaiian Affairs
OTS	Oahu Transit Services, Inc.
msl	mean sea level
PUC	Primary Urban Center
sf	square foot/feet
SHPD	State of Hawaiʻi Department of Land and Natural Resources, Historic Preservation Division
SHWB	State of Hawaii Department of Health, Solid and Hazardous Waste Branch
SMA	Special Management Area
TIAR	Traffic Impact Analysis Report
TMK	Tax Map Key
UIC	Underground Injection Control
WHHA	Waimānalo Hawaiian Homes Association
WHC	Waimānalo Health Center
WIC	Women, Infant, Children
WWTP	Wastewater Treatment Plant
USFWS-PIFWO	U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office

PROJECT SUMMARY

Applicant:	Waimānalo Health Center, a domestic non-profit and 501(c)(3) organization Contact: Guy Bowker, Facilities Director
Approving Agency:	Department of Land and Natural Resources, Land Division Contact: Barry Cheung, Oʻahu Land Agent
Location:	Waimānalo, Oʻahu, Hawaiʻi
Tax Map Key:	(1) 4-1-009:279
Land Area:	1.081 acres
Recorded Fee Owner:	State of Hawaiʻi
Existing Use:	Waimānalo Health Center campus (5 buildings)
Proposed Use:	Waimānalo Health Center campus (2 buildings including a new health care facility)
Community Plan Region:	Koʻolau Poko
Land Use Designations:	
State Land Use	Urban
Development Plan	Institutional and within Low-density Residential
County Zoning	R-5
Action Requested:	The Applicant proposes to construct a new, one-story health care facility to replace existing health care facilities on land that is leased from the State of Hawaiʻi. In 2015, the Department of Land and Natural Resources, Land Division awarded a 65-year lease to the Applicant. The new facility will house the programs and services that the Applicant currently provides at the project site. The proposed project includes associated improvements to site infrastructure, the removal of a large monkey pod tree, and the reconfiguration of the parking lot to increase patient parking space.
Agency Determination:	Finding of No Significant Impact (FONSI)

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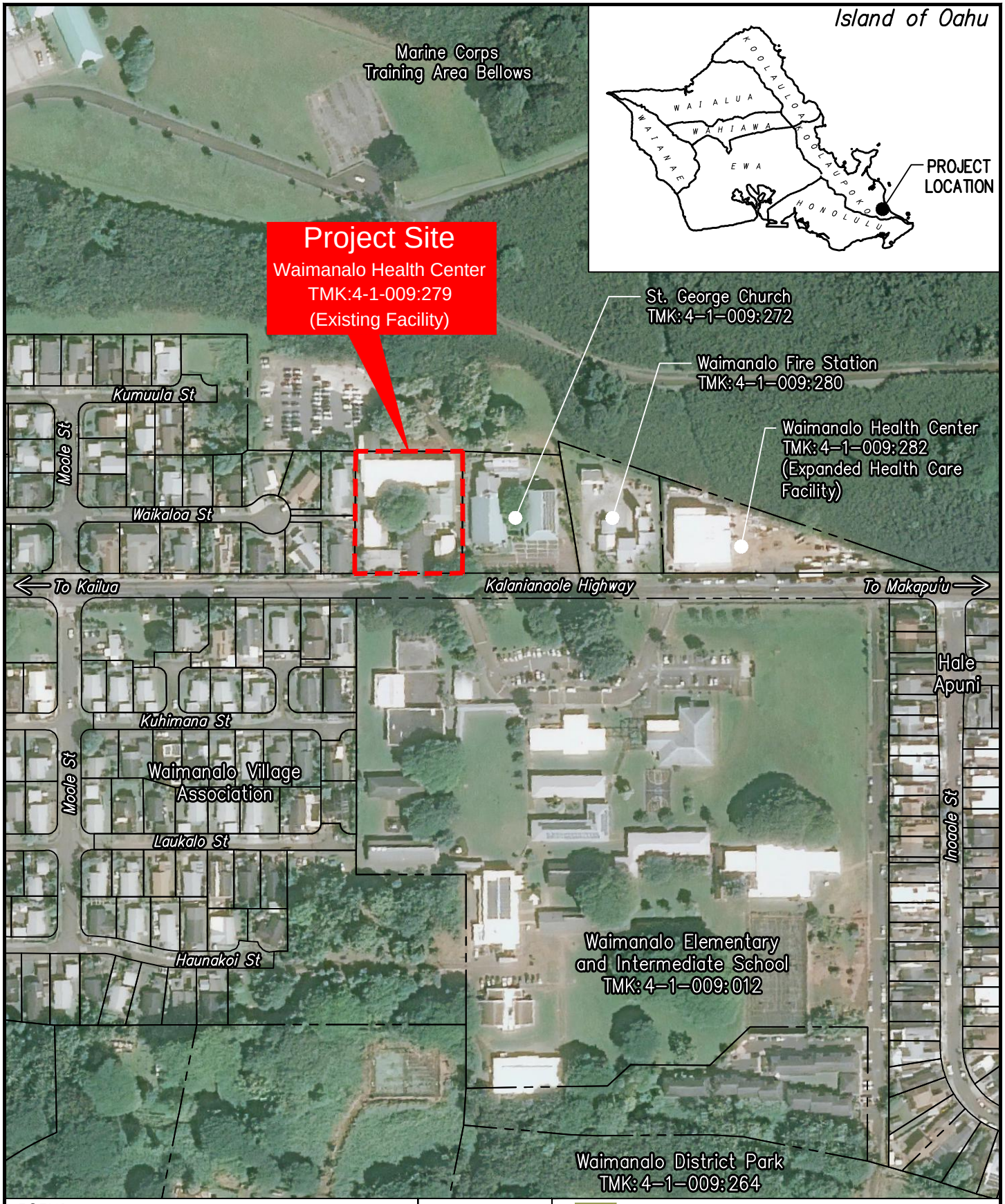
1. INTRODUCTION

In 1966, pilot projects run by the State of Hawaiʻi Department of Health (DOH) brought maternal and child health services to Waimānalo in Koʻolaupoko on the Island of Oʻahu. The geographic region of Koʻolaupoko encompasses the windward area between the peaks of the Koʻolau mountains and the shoreline from Ka ʻōʻio Point in the north to Makapuʻu Point in the south. The DOH ran the combined Maternal and Infant Care/Children and Youth Project from its Waimānalo health clinic for twenty years. The decision to terminate those DOH services in Waimānalo led to the establishment of the community-based Waimānalo Health Center (WHC), which was incorporated in January 1989. DOH facilities were transferred to WHC and renovated, which allowed WHC to accept its first patient in January 1992. In 1994, the WHC earned its designation as a Federally-Qualified Health Center (FQHC) under Medicare and the Health Resources and Services Administration (HRSA) Bureau of Primary Health Care. FQHCs that are community health centers provide comprehensive primary and preventive care to persons of all ages, regardless of their health insurance status or ability to pay. WHC operates within the geographic area of Waimānalo, which has a federal designation from the HRSA as a Medically Underserved Population and Health Professionals Shortage Area.

WHC is the only medical provider in the Koʻolaupoko area that specializes in providing comprehensive care to the uninsured and underinsured. The rural communities of Kahaluʻu, Waiāhole-Waikane, Kualoa, and Waimānalo, and the urban fringe communities of Kāneʻohe and Kailua are within WHC's service area. Poverty, lack of health insurance, and geographic hurdles that affect access to health care are known challenges affecting the Waimānalo community, which includes a large Native Hawaiian population. Access to health care and social services would be severely limited if the WHC did not exist, whereby Waimānalo residents would have to travel long distances beyond the community for services.

The proposed project described in this Environmental Assessment (EA) includes the development of a new, one-story health care facility that will replace existing health care facilities located on Tax Map Key (TMK) 4-1-009:279 (hereafter Parcel 279). The 1.081-acre project site comprises State of Hawaiʻi land located along Kalanianaʻole Highway, adjacent to St. George Church, and across from Waimānalo Elementary and Intermediate School (see Figure 1).

WHC currently provides its services and programs from two locations: Hale Ola ʻAkahi refers to the facilities on Parcel 279 and Hale Ola ʻAlua refers to a two-story, medical expansion facility on TMK 4-1-009:282 (hereafter Parcel 282). The Hale Ola ʻAlua facility and parking lot on Parcel 282 are adjacent to the Waimānalo Fire Station and across from Waimānalo Elementary and Intermediate School.



LEGEND

Property Line

Parcel Boundary

N

Scale:
1" = 250'

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

Waimanlo Health Center Parcel 279
Figure 1 - Project Location
March 2023

File: L:\1. PROJECTS\42 - ERSKINE\14228 - WHC Parcel 279\FIGURES\EA\1 Location Map.dwg\3/29/2023

WHC operates as a domestic non-profit and 501(c)(3) organization that qualifies for direct lease under Hawaiʻi Revised Statutes (HRS) Section 171-43.1. A direct lease (GL5400) for Parcel 279 was approved by the Board of Land and Natural Resources (BLNR) for a period of 35 years commencing from September 1, 1995. BLNR approved the mutual termination of GL5400 and the issuance of a direct 65-year lease to WHC for Parcels 279 and 282 on April 24, 2014. General Lease No. S-6056 (GL6056) was awarded on January 1, 2015 and amended on December 8, 2017 to include TMK 4-1-015:023 (hereafter Parcel 23), which is a triangular parcel of 1.597 acres. Parcel 23 is between the developed parcels along Kalaniana‘ole Highway and Marine Corps Training Area Bellows (MCTAB) land to the north.

The Final EA and Finding of No Significant Impact (FEA-FONSI) for the two-story medical expansion facility on Parcel 282 was published in *The Environmental Notice* on February 23, 2014. The Honolulu City Council approved the Special Management Area (SMA) Use Permit No. 2015/SMA-25 (Res. No. 15-247) for Parcel 282 on or around October 15, 2015. The demolition of unspecified buildings on Parcel 279 was examined in the FEA-FONSI; however, the considered SMA application indicated that the demolition plans were on hold. The HRSA completed its FONSI on or around August 29, 2016, and the published notice appeared in the *Honolulu Star Advertiser* on September 7, 2016. WHC’s medical expansion facility consisting of 19,542 square feet (sf) on Parcel 282 at 41-1295 Kalaniana‘ole Highway opened on May 1, 2019. Medical services, behavioral health, nutrition, and community services are currently housed at Hale Ola ‘Alua.

The Hale Ola ‘Akahi facilities on Parcel 279 at 41-1347 Kalaniana‘ole Highway currently house oral health services, youth services, and the administrative functions of WHC in roughly 18,000 sf of floor area. The proposed new one-story facility described in this EA will replace four one-story buildings on Parcel 279 that have reached the end of their service life. WHC will continue to deliver its programs and services while its project advances from demolition through the various phases of construction. The new single-story healthcare facility of approximately 8,000 sf on Parcel 279 will house oral health services, vision services, health promotion, and disease prevention programs, eligibility services, support services (e.g., transportation and outreach), and cultural healing. The proposed project includes improvements to site infrastructure, and reconfiguration of the parking lot on Parcel 279 to improve onsite vehicular circulation and access to patient parking spaces.

The project would use State of Hawaiʻi lands and, therefore, requires the preparation of an EA according to Chapter 343, HRS and associated Title 11, Chapter 200.1, Hawaiʻi Administrative Rules (HAR). This EA was prepared to address the environmental, social, and economic consequences of the project and to provide for public participation as required and defined in the statutes. The project site is not located within the SMA (see Figure 2), and is not subject to the rules and regulations that apply to development in the coastal zone.

LEGEND

- Property Line
- Parcel Boundary
- Special Management Area (SMA)

N

Scale:
1" = 700'

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Waimanlo Health Center Parcel 279
Figure 2 - Vicinity Map
March 2023

File: L:\1. PROJECTS\42 - ERSKINE\14228 - WHC Parcel 279\FIGURES\EA\2 Vicinity Map.dwg:3/29/2023

2. SETTING AND PROJECT DESCRIPTION

2.1. Project Need and Objectives

As mentioned in Section 1. Introduction, WHC currently operates the health care facilities on two state-owned parcels located along and makai (or seaward) of Kalaniana‘ole Highway. The FEA published in 2014 addressed the site improvements on Parcel 282. WHC considered the demolition of unspecified existing buildings on Parcel 279 in the 2014 FEA; however, the demolition plans were subsequently suspended. Construction of the two-story facility at 41-1295 Kalaniana‘ole Highway began in 2017 and WHC opened the Hale Ola ‘Alua facility on Parcel 282 in 2019.

Existing facilities located within Parcel 279 are inefficiently configured around a parking lot. Four portable buildings that are more than 50 years old are at the end of their service life and inadequately sized based on modern standards for patient care. The older facilities require escalating repair and maintenance, which adversely impacts the delivery of much-needed services. The design of the proposed facility will incorporate outdoor space considerations since the recent pandemic provided opportunities to adjust waiting and gathering areas to achieve safe distancing requirements. Completion of the project will allow WHC to achieve the following objectives:

- Provide services and programs from a modern, one-story healthcare facility;
- Expand and house all dental services at one primary location;
- Improve workflow with more efficient space configurations that consider team-based care concepts;
- Incorporate the use of outdoor spaces as waiting and gathering areas for patients and staff;
- Reduce barriers and increase access to health care; and
- Continue to provide health services to the medically underserved population of Waimānalo and the Ko‘olaupoko area which has a high concentration of Native Hawaiian and part-Hawaiian families.

2.2. Project Location

The proposed project described in this EA involves site improvements including demolition and construction at Parcel 279 located at 41-1347 Kalaniana‘ole Highway. St. George Church and Waimānalo Fire Station are between Parcels 279 and 282, which are across from the Waimānalo Public Library and the Waimānalo Elementary and Intermediate School (refer to Figure 1). Parcel 279 is roughly 0.7 miles away from Waimānalo Bay.

2.3. Site Description

The project site is a 1.081-acre, regularly-shaped parcel that is bounded by residential housing to the west, Parcel 23 to the north, St. George Church to the east, and Kalaniana‘ole Highway to the south. Existing trailers and buildings on Parcel 279 are arranged in a U-shaped configuration around a parking lot (see site photographs in Appendix B). Vehicular access to and egress from the project site is via a driveway along Kalaniana‘ole Highway. The existing Hale Ola ‘Akahi facilities on Parcel 279 contribute to a continuous line of development including single-family homes, public use facilities and church facilities along the makai portion of Kalaniana‘ole Highway.

The State land use designation for the project site is Urban (see Figure 3), which is characterized by residential neighborhoods, commercial enterprises, industrial development, and community facilities including public buildings. Urban land uses are subject to the land use policies and controls of the City and County of Honolulu (hereafter the City). As shown in Figure 4, the City’s zoning designation for the project site is R-5 Residential District. The City’s zoning requirements for R-5 Residential include a 30-foot front yard setback, 15-foot side/rear yard setback requirements, and a 25-foot building height limit. Public uses and structures are allowed in all zoning districts including the R-5 Residential District. In other words, no discretionary land use permit is required for public uses and structures. The following definition is from §21-10.1 of the City’s Land Use Ordinance (LUO):

> *“Public uses and structures” mean uses conducted by or structures owned or managed by the federal government, the State of Hawai‘i or the city to fulfill a governmental function, activity or service for public benefit and in accordance with public policy. Excluded are uses which are not purely a function, activity or service of government and structures leased by government to private entrepreneurs or to nonprofit organizations.*

WHC’s facility was recognized in 1995 as a “public use” because WHC provides various general health care services to the community under agreements with DOH to fulfill specific functions for the public good, as authorized by State law. The letter dated July 28, 2022 (see Appendix A) describes the comprehensive health services that WHC has provided through its service agreements with DOH. The contractual agreements between DOH and WHC help to ensure the availability of programs and services that promote the health of women of childbearing age, mothers, families, infants, children, youths, and adolescents. According to the letter, the service agreements between DOH and WHC are likely to be renewed at the end of their contract period. Pursuant to §21-2.130 of the LUO, the Director of DPP may waive the strict application of development or design standards for public or public/private uses and structures, and utility installations.

LEGEND

- Parcel Boundary
- Urban
- Agricultural

N

Scale:
1" = 500'

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Waimanlo Health Center Parcel 279
Figure 3 - State Land Use Map
March 2023

File: L:\1. PROJECTS\42 - ERSKINE\14228 - WHC Parcel 279\FIGURES\EA\3 State Land Use Map.dwg\3/29/2023

LEGEND

- Parcel Boundary
- F–1 – Military and Federal
- P–2 – Preservation (General)
- AG–1 – Agricultural (Restricted)
- AG–2 – Agricultural (General)
- R–5 – Residential

N

Scale:
1" = 250'

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CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

Waimanlo Health Center Parcel 279
Figure 4 - Zoning Map
March 2023

File: L:\1. PROJECTS\42 - ERSKINE\14228 - WHC Parcel 279\FIGURES\EA\4 Zoning Map.dwg 3/29/2023

2.4. Technical Characteristics

The proposed project provides the opportunity to address space inefficiencies and house consolidated health care services such as all dental services in a modern, energy efficient facility that conforms to the 2012 International Building Code (IBC) as amended by the City, the applicable sections of the National Fire Protection Association (NFPA), the 2010 Americans with Disabilities Standards for Accessible Design, and related standards pertaining to life and safety. The new one-story facility will incorporate more efficient space considerations based on modern standards for patient care. Tree removal will occur to allow large, heavy equipment to access and demolish old buildings. WHC intends to operate and deliver services to patients from Parcel 279 during the various phases of demolition and construction.

Sustainable building design concepts will be utilized in the design and construction of the new facility. The recent pandemic provided opportunities to adjust waiting and gathering areas to achieve safe distancing requirements; the design of the proposed facility will incorporate outdoor space considerations. The current conceptual site layout includes the following design considerations:

New facility. A one-story facility of approximately 8,000 sf will be located on the western portion of the project site (see Figure 5). The new facility will house a dental clinic, vision center, administration support, and Women, Infant, Children (WIC) services. WHC's services utilize a team-based, patient-centered health care concept. The different services will be supported by a central reception area and waiting lobby. The lobby will be comprised of a main interior space with an exterior overflow area. The building will be air-conditioned and protected throughout by an approved automatic fire sprinkler system.

Parking lot. A new parking lot consisting of 34 parking stalls will be constructed on the eastern portion of the project site. Traffic within the parking lot will circulate in a one-way clockwise direction to accommodate right turns into the driveway from large vehicles traveling westbound on Kalaniana‘ole Highway.

Site infrastructure. New water, fire protection, waste, power, and telecommunications connections will be provided to the new facility. Other improvements include internal storm water retention and drainage through dry-wells and/or landscaping features, landscaping around the building and parking lot, a new back-up generator for emergency power, a delivery/service lane, trash enclosure area and accessible sidewalks

LEGEND

Parcel Boundary

N

Scale:
1" = 150'

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

Waimanlo Health Center Parcel 279
Figure 5 - Conceptual Site Plan
March 2023

File: L:\1. PROJECTS\42 - ERSK(NE)\14228 - WHC Parcel 279\FIGURES\EA\5 Site Map.dwg\3/29/2023

2.5. Historical Setting

The following excerpt is from Honua Consulting (2022) unless otherwise noted. Honua Consulting utilizes place name translations/interpretations from Pukui et al. (1974).

The island of Oʻahu was divided in traditional times into moku (regional land divisions) that were further divided into ahupuaʻa (land divisions usually extending from the uplands to the sea) and ʻili (subdivisions of an ahupuaʻa). The size and configuration of Waimānalo Ahupuaʻa has changed from its traditional Hawaiian (or Oʻahuan) boundaries—which once included Maunalua Ahupuaʻa as an ʻili of Waimānalo (and, therefore, part of the moku of Koʻolaupoko)—to its current extent. The current boundary of Waimānalo Ahupuaʻa follows the ridgeline of the Koʻolau Range to Makapuʻu (literally, "hill beginning" [with "maka" taking on the meaning of "source" or "origins"] or "bulging eye" [from a reference in the famous saga of Pele and Hiʻiakaikapoliopele]). This current configuration—following the Koʻolau ridgeline—is more consistent with the physiographic characteristics of southeastern Oʻahu. In a real sense, Waimānalo's current configuration marks the start (or end) of the windward coast.

Waimānalo (literally, "potable water") is named after its single permanent stream, and is associated with several Hawaiian accounts of pūnāwai (fresh-water springs), fishing villages and small settlements along the coast. Other associations with Waimānalo include a famous kahuna lapaʻau (traditional healer) named Kapoi, and the saga of the Hawaiian volcano goddess Pele and one of her sisters, Hiʻiaka. At the Waimānalo coastline there is a fishpond-like structure, Pāhonu, which is named for honu (green sea turtles). The natural beauty of the Waimānalo landscape includes stunning physiography such as the two-thousand foot pali (cliffs) of the Koʻolau ridgeline and the white sands of Waimānalo Bay.

Available records suggest that the traditional Hawaiian population of Waimānalo engaged in wetland taro and sweet potato cultivation was clustered along Waimānalo Stream and its upper tributaries, and the population distributed within the central and southeastern coastal areas was utilizing marine resources. The *Koʻolau Poko Watershed Management Plan* (Townscape, Inc., 2012) examined the watershed planning district on windward Oʻahu from Kualoa in the north to Makapuʻu Point in the south. The following information that pertains to Waimānalo is summarized from this plan unless otherwise indicated.

The earliest Hawaiians who settled on the windward coast of Oʻahu developed a food production system that utilized naturally occurring freshwater resources in the Koʻolau Poko area to sustain farming. The abundance of food from farming and from the management of productive marine resources contributed to the region's importance as one of the major population centers where several ruling chiefs (including Olopana, Kahekili, and Kamehameha the Great) resided during the pre-contact era of Hawaiʻi. Widespread epidemics and outbreaks that affected all of Hawaiʻi caused severe

population declines in Koʻolau Poko during the 1800s. It is estimated that the population decreased by over 90 percent from 20,000 to 25,000 inhabitants in the late 18th century to slightly over 2,000 inhabitants in 1872.

The concepts of private land ownership led to vast changes in settlement patterns in Hawaiʻi starting from the late1840s. Large tracts of land in the Koʻolau Poko area were sold or leased for mono-crop agricultural ventures (e.g., sugar, rice, and pineapple) and livestock ranching activities. The population of Koʻolau Poko began to grow again as immigrant laborers settled in the district. Waimānalo Sugar Plantation was one of nine sugar plantations in Koʻolau Poko. It operated for 70 years from 1878 to 1947 and encompassed roughly 3,000 acres of land extending six miles along the Waimānalo coast and four miles inland to the base of the Koʻolau Mountain Range. The plantation was founded in 1877 by John A. Cummins. In 1885, the plantation passed to W.G. Irwin who was instrumental in the construction of the ditch irrigation system that diverted water from streams and springs to plantation lands. As the plantation expanded, former ranch land was converted to cane fields, irrigation ditches and railroad lines were constructed, and other infrastructure was improved. The destructive effects of cattle and ranching activities on vegetation and forested areas in Koʻolau Poko eventually led to the establishment of forest reserve areas by the Territorial Government of Hawaiʻi. Waimānalo Forest Reserve includes 7,395 acres in the mauka (or landward) portions of Waimānalo, Kailua, and southern Kāneʻohe.

The U.S. military, which had established Waimānalo Military Reservation in 1917, changed its name to Bellows Field in 1933 to commemorate Second Lieutenant Franklin B. Bellows, who died in combat during World War I. In 1999, the U.S. Marine Corps acquired 1,049 acres of land from the Air Force for a training area whereby MCTAB now falls under the jurisdiction of Marine Corps Base Hawaiʻi (State of Hawaiʻi, Department of Transportation, Airports Division, n.d.).

Residential population growth in Waimānalo followed the construction of the Kailua-to-Waimānalo Road in 1924. The first Hawaiian Homes development in Waimānalo began in 1925 and was followed by the Waimānalo beach lot homes in 1926. Waimānalo has mostly retained its rural character as compared to other urbanized areas of Koʻolau Poko, which experienced tremendous housing and population growth from the 1950s through the 1980s. Development in Waimānalo has occurred at a slower pace in part because much of the Waimānalo Sugar Plantation lands were passed to the Territorial and then the State government.

2.6. Waimānalo Area Uses, Tenants, and Structures

Waimānalo town is generally a rural residential community with small commercial businesses, recreational areas, and agricultural uses. The area closest to the project site contains residential neighborhoods, St. George Catholic Church, commercial businesses, and public facilities including the Waimānalo Fire Station (Company 27),

Waimānalo Public Library, Waimānalo Elementary and Intermediate School, and Waimānalo District Park (see Figure 2). MCTAB lands located to the north are primarily utilized for recreation and military training. Areas beyond Parcel 282 towards Makapuʻu are comprised of residential neighborhoods, agricultural lots used for plant nurseries, and recreational areas. Other nearby recreational uses that contribute to the rural character of the Waimānalo area include Bellows Field Beach Park (which is part of MCTAB), Waimānalo Bay Beach Park (which was formerly known as Waimānalo State Recreation Area), and a polo field with related facilities located on State land along Kalanianaʻole Highway.

2.7. Environmental Characteristics

The proposed project would utilize state-owned land that is currently in use and leased to WHC for health care services in Waimānalo. The public use of the project site would be maintained with the replacement of four existing buildings with a new one-story health care facility. WHC's project is consistent with existing land uses in the surrounding vicinity and does not affect population levels or the housing supply. The new one-story facility on the western portion of Parcel 279 and the reconfigured parking lot on the eastern portion of the site would slightly change the visual elements along Kalanianaʻole Highway.

Demolition and construction activities would generate short-term impacts such as surface runoff, fugitive dust, noise, intermittent traffic, and solid waste that would cease upon project completion. Site infrastructure consisting of new connections and/or extensions for basic infrastructure services and systems (i.e., water, wastewater, power, and communications) would be installed as part of the proposed project. Anticipated short-term impacts will be mitigated to the maximum extent practicable with the use of appropriate construction techniques and Best Management Practices (BMPs). For example, the construction contractor is expected to follow the guidelines in the City's "Rules Relating to Water Quality," which require temporary erosion prevention and sediment control. Completion of the new facility would allow WHC to continue to address the existing and future health care needs of the uninsured and the medically underserved population of Waimānalo.

2.8. Project Schedule and Cost

The design phase of the proposed project is projected to continue through 2023. Completion of the environmental review process in early 2023 may allow construction of the new facility to commence in Fall 2024 with project completion in 2025. The estimated total project cost is approximately $8 million.

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3. DESCRIPTION OF EXISTING ENVIRONMENT, PROJECT IMPACTS, AND MITIGATION

3.1. Climate and Air Quality

The climate in the State of Hawaiʻi is generally characterized by a two-season year: the summer period is warm and dry whereas the winter season is cool and wet. Rainfall distribution across Hawaiʻi varies greatly according to geographic conditions, elevation, and long-term climatic cycles.

The project site is located on the windward side of Oʻahu, which is characterized by mild temperatures and abundant rainfall, especially during the wet season. Average temperatures at the project site range from approximately 71 degrees Fahrenheit in January and February to approximately 78 degrees Fahrenheit in August (Giambelluca, 2014). The average annual rainfall at the project site is estimated at approximately 38 inches and the wetter months of the year are October through March (Ibid). Trade winds in the project vicinity are generally from the northeast. Strong winds are known to occur in connection with storm systems that disrupt climatic patterns.

The existing Hale Ola ʻAkahi facility on Parcel 279 is located within a rural area characterized by low-density land uses. The ambient air quality at the project site is likely to be influenced by emissions from vehicular travel along Kalanianaʻole Highway, nearby human activities, and natural pollutants such as plant pollens and spores within Waimānalo. The prevailing trade winds help to circulate and disperse emissions and other airborne pollutants away from the source.

<u>Impacts and Mitigation Measures</u>

No measurable adverse effect on climatic conditions is anticipated from the demolition of older buildings and the construction of a new healthcare facility on Parcel 279. No mitigation measures are warranted or proposed.

Ambient air quality will be temporarily affected by construction-related vehicles, equipment, and activities that would generate fugitive dust and emissions. Fugitive dust concerns fall within the purview of the DOH Clean Air Branch (CAB) Enforcement Section.

Airborne, visible fugitive dust during the various phases of demolition and construction will be controlled at the project site by the contractor in accordance with Air Pollution Control standards stated in HAR §11-60.1-33, “Fugitive dust.” Reasonable measures are required to control airborne, visible fugitive dust from the road areas and during construction-related activities. Exhaust emissions can be reduced by keeping construction equipment and vehicles properly tuned and maintained, and minimizing unnecessary idle time.

Measures that address fugitive dust concerns may include and are not limited to the following:

- Planning the different phases of construction, focusing on minimizing the amount of airborne, visible fugitive dust-generating materials and activities;
- Providing an adequate water source at the site prior to start-up of construction activities;
- Landscaping and providing rapid covering of bare areas after ground disturbance;
- Providing reasonable dust control measures during work hours, weekends, after hours, and prior to daily start-up of construction activities; and
- Controlling airborne, visible fugitive dust from debris being hauled away from the project site.

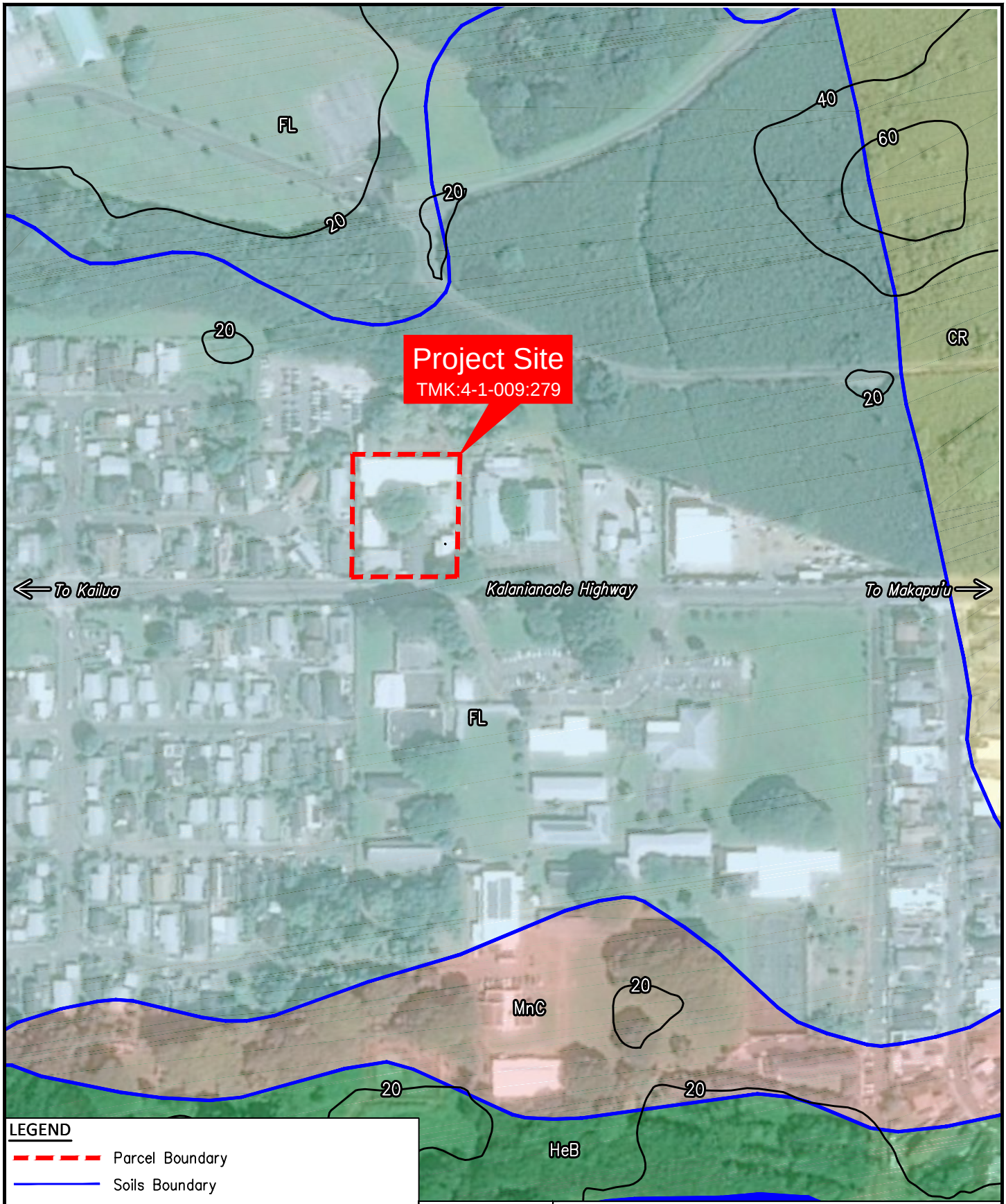
Upon project completion, the new health care facility represents a continuation of the human and vehicular activities that are associated with the existing Hale Ola ‘Akahi facility. No significant adverse air quality impacts are anticipated, and no mitigation measures for long-term impacts are proposed.

3.2. Topography, Geology and Soils

The Island of O‘ahu contains the Waianae and Ko‘olau mountain ranges, which are connected by a central plateau. The older Waianae Range spans a distance of about 20 miles across the western third of O‘ahu and the younger Ko‘olau Range extends approximately 37 miles in a northwest to southeast alignment across the eastern two thirds of the island. The project site is located on the windward side of the Ko‘olau range and contains relatively flat and level terrain (see Figure 6). Site elevations for Parcel 279 range from 29 feet to 32 feet above sea level.

The Ko‘olau Range is comprised of thin, narrow layers of basaltic lava flows that have been subject to weathering and natural erosion processes. The valley floors contain alluvium (e.g., clay, silt, sand, gravel, or similar material) and unconsolidated non-calcareous sediments transported from valley slopes by stream flows.

According to the *Soil Survey of the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii* (U.S. Department of Agriculture, Soil Conservation Service, 1972) and the *Web Soil Survey* (U.S. Department of Agriculture, Natural Resources Conservation Service, n.d.), the predominant soil type in the vicinity of the project site is classified as Ewa silty clay loam, moderately shallow, 0 to 2 percent slopes (EmA). The EmA soil type is well drained and low runoff with a slight erosion hazard. EmA soils have moderately low to high saturated hydraulic conductivity. Soil classifications are shown in Figure 6.



LEGEND

- Parcel Boundary
- Soils Boundary
- 20 Ft Contour Lines
- FL – Fill Land
- MnC – Malama Cobbly Silty Clay
- HeB – Haleiwa Silty Clay
- CR – Coral Outcrop

N

Scale:
1" = 250'

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Waimanlo Health Center Parcel 279
Figure 6 - Soil Conditions and Topogrphy
March 2023

File: L:\1. PROJECTS\42 - ERSKINE\14228 - WHC Parcel 279\FIGURES\EA\6 Soils and Topo Map.dwg;3/29/2023

In 2013, two borings were drilled at the project site as part of preliminary geotechnical investigations. Subsurface conditions were described as fill consisting of reddish brown clayey silt mixed with gravel, extending to depths of approximately 12 and 20 inches. The underlying soils consisted of weak to moderately cemented silty sand.

Impacts and Mitigation Measures

Project actions are expected to generally retain the overall topographic profile of affected areas. The final grading design for the project site will be based on investigations by and recommendations from the geotechnical engineers for the proper design of proposed structural improvements (e.g., the building pad) with respect to subsurface conditions. Grading and grubbing will be accomplished to the extent necessary within the limits of the affected construction area. Disturbed areas will be finished and paved or landscaped.

No adverse effects on the underlying geology and soils are anticipated from the proposed project. Earth disturbing activities during construction and site development may create exposed areas that are susceptible to erosion from wind and rain. Areas affected by project actions will be stabilized, which reduces the long-term potential for erosion by water and wind. The construction contractor is expected to follow the City's "Rules for Soil Erosion Standards and Guidelines." Mitigation that addresses sediment-laden runoff concerns is discussed in Section 3.3, Water Resource Considerations.

3.3. Water Resources

The proposed project is located within the Waimānalo Aquifer System Area (ASYA) which is part of the Windward Aquifer Sector Area. All aquifer sectors on O'ahu except for the Waianae sector are designated Ground Water Management Areas under the regulatory authority of the Department of Land and Natural Resources (DLNR) Commission on Water Resource Management (CWRM). Applicants for water use permits in designated Ground Water Management Areas must demonstrate that no alternative water sources are available to meet their needs. CWRM has issued Water Use Permits for groundwater withdrawals totaling 1.843 million gallons per day (MGD) from the Waimānalo ASYA, which is well below the 9 MGD *sustainable yield* for this aquifer system (Townscape, Inc., 2019). *Sustainable yield* is defined in the State Water Code (Chapter 174C HRS) as the maximum rate at which water may be withdrawn from a water source without impairing the utility or quality of the water source as determined by the commission.

The Underground Injection Control (UIC) line as determined by the DOH Safe Drinking Water Branch demarcates the boundary between non-drinking water aquifers and underground sources of drinking water. The project site is makai of the UIC line, which

indicates that the underlying groundwater is not considered a potential source of drinking water.

There are no freshwater streams, rivers, ponds, or other open water bodies located within or immediately adjacent to the project site. Perennial freshwater resources in the project area include Waimānalo Stream and its tributary, Kahawai Stream. Kalaniana‘ole Highway crosses over Kahawai Stream approximately 0.5 miles west of Parcel 279. The intermittent portion of Inoaole Stream flows under Kalaniana‘ole Highway via the concrete bridge structure located approximately 0.3 miles east of Parcel 279 in the vicinity of Hale Aupuni Village. “Inoaole Stream is not a natural stream, but rather a drainage that was constructed as a result of sugarcane cultivation in the area” (Group 70 International, 2011). Waimānalo Bay is no less than 0.7 miles makai of Parcel 279.

No wetlands (or marshes, swamps, bogs, etc.) are located within or immediately adjacent to the project site. There are designated wetlands at least 0.2 miles east of Parcel 282 along Inoaole Stream (U.S. Fish and Wildlife Service, 2013).

Impacts and Mitigation Measures

The new healthcare facility on the project site does not involve the development of new potable water sources. Parcel 279 is located within an area served by existing municipal systems for potable water and wastewater disposal (refer to the discussion in Section 3.12. Utilities). The proposed project represents a continuation of health care services on the project site, which is not anticipated to result in contamination of the underlying aquifer and groundwater sources in the Waimānalo ASYA.

No significant increase in water consumption is anticipated since project actions would improve the facilities for existing personnel who are already drawing from the same water source. In the long-term, staffing levels and patient volumes may increase over time.

Project actions are not expected to affect the water quality of any State waterbodies including surface water resources since the project site contains no wetlands, perennial streams, or other sensitive riparian habitats. Construction activities such as soil disturbance and material storage have the potential to cause short-term and temporary impacts to storm water runoff quality; however, the construction contractor is expected to implement temporary BMPs to mitigate these impacts. Construction activities at the project site will comply with applicable Federal, State and County erosion control rules and regulations.

A National Pollutant Discharge Elimination System (NPDES) Permit for discharges of pollutants, including storm water runoff is required for the disturbance of one acre or more of total land area pursuant to HAR §11-55, "Water Pollution Control" effective January 15, 2022. A Storm Water Pollution Prevention Plan must be submitted to the DOH Clean Water Branch in advance of a Notice of Intent (NOI) to be covered by the NPDES General Permit. The applicant is responsible for submitting the NOI at least 30 days before the commencement of construction activities.

The long-term impact of the proposed one-story facility and parking lot on Parcel 279 is the creation of more impermeable surface area. In order to mitigate the cumulative effects that urbanization has on surface water quality, the City regulates new development and redevelopment projects that disturb at least one acre of land. Projects regulated under the City's storm water quality program must consider the use of Low Impact Development, source control, and retention/biofiltration in order to minimize the effects of development on storm water quality. Completion of the new facility and parking lot will likely improve surface runoff conditions due to the installation of proper drainage features and swales. Natural and native plantings help prevent erosion and reduce surface water runoff by increasing the absorptive capacity of the soil.

3.4. Hazardous Materials and Solid Waste

There are no known threats pertaining to hazardous materials at the project site. The terms and conditions of WHC's lease restrict the escape, disposal, or release of any hazardous materials from the project site except as permitted by law. WHC may not store or use such materials unlawfully and must seek consent from DLNR prior to bringing hazardous materials onto the premises.

Solid waste generated on O'ahu goes to disposal facilities including two landfills and a waste-to-energy facility located within the Campbell Industrial Park. The solid waste generated at the project site is currently collected by a solid waste collection service for proper disposal.

Impacts and Mitigation Measures

WHC is expected to coordinate proposed activities including the demolition of select facilities on Parcel 279 with DLNR to ensure that hazardous materials do not jeopardize public health and environmental safety. If the presence of hazardous materials is discovered, the DOH Indoor and Radiological Health Branch (IRHB) will be contacted. The exposure risks from hazardous materials such as asbestos containing substances and lead-based paint are greatest when these materials are intentionally disturbed and handled. WHC will refer to the regulatory guidance of the DOH IRHB and the construction contractor

will be required to comply with all applicable State regulations regarding work with hazardous materials.

Demolition and construction activities are expected to temporarily increase the volume of solid waste including construction debris that must be transported offsite for disposal. WHC will refer to the regulatory guidance stated in the standard comments from the DOH Solid and Hazardous Waste Branch (SHWB). Appropriate waste management and disposal practices are expected to be implemented by the construction contractor. The long-term activities on the project site have the potential to increase solid waste over existing levels as the volume of patients served and number of facility staff increase. Domestic solid waste would continue to be collected by a private contractor and no adverse impacts are anticipated.

3.5. Natural Hazards

Natural hazards that may threaten life and property on Oʻahu include tropical cyclones, earthquakes, floods and tsunami inundation, drought, wildfires, high wind and landslides. Many tropical cyclones have passed close enough to affect the State of Hawaiʻi since the recording of such events began in the 1950s. Hurricane Iwa in 1982 and Hurricane Iniki in 1992 both brought destructive winds and torrential rains that resulted in significant property damage. Hurricane Iniki was connected to six deaths.

Recent earthquakes that had statewide impacts occurred on October 15, 2006. The earthquakes, which occurred off the Kona coast of Hawaiʻi, had magnitudes of 6.7 and 6.0. The event caused property damage and triggered an island-wide electrical blackout on Oʻahu.

Tsunami evacuation zone maps for the State of Hawaiʻi (Hawaiʻi State Civil Defense, n.d.) identify low-lying areas where excavation is recommended since extensive damage to life and property may occur from seismic sea waves. The project site is away from the shoreline, and outside the tsunami evacuation zone.

Climate change is expected to impact water resources. While acknowledging the uncertainty of future climate change scenarios, “researchers expect wet areas in Hawaiʻi to get wetter and dry areas to get drier” (Townscape, Inc., 2019). Long sustained periods of drought have the potential to affect ground and surface water resources. In addition to temperature and precipitation changes, the effects of climate change may include sea level rise, and wildfires that occur with more frequency or more intensity. Climate change may also affect the frequency and intensity of severe storms that cause flooding.

Models predict that sea level rise may eventually threaten properties in coastal and low elevation areas. The project site does not contain and is not located adjacent to

sea level rise vulnerability zones, which are areas that may be impacted by 3.2 feet of sea level rise by the year 2100, according to the Hawaiʻi Sea Level Rise Viewer (Hawaiʻi Climate Change Mitigation and Adaptation Commission, 2021).

The project site falls within Zone X according to the Flood Insurance Rate Map Panel No. 15003C0380G (effective date November 5, 2014) for Hawaiʻi prepared by the Federal Emergency Management Agency. The Zone X designation refers to inundation areas of low-to-moderate risk that are outside the 0.2 percent annual chance (or 500-year) of floods. Flood zone designations are shown in Figure 7, and the Flood Hazard Assessment Report for the project site is provided in Appendix C.

Landslides have destroyed built structures and covered roads, which jeopardize access for affected communities. Steep cliffs and areas containing an abundance of dry vegetation may be more susceptible to rockfalls and wildfires, respectively. There are no apparent rockfall hazards in the vicinity of Parcel 279, which consists of relatively flat terrain that is far from steep cliffs and slopes. Threats from wildfires are unlikely but possible since there is vegetation at the project site. Drought conditions and high winds could exacerbate the fire hazard.

Impacts and Mitigation Measures

In general, the threats to humans and property from unpredictable natural events is no greater at Parcel 279 than at other locations on Oʻahu. Proposed activities at the project site are not expected to affect or exacerbate the occurrence of naturally occurring hazards.

WHC is expected to have an evacuation plan that addresses the safety of staff and visitors in the event of man-made and natural disasters. Parcel 279 is near Waimānalo Fire Station and within walking distance of Waimānalo Elementary and Intermediate School, which is a designated hurricane evacuation shelter.

3.6. Floral and Faunal Resources

The project site is within a larger geographic area that has a long history of land use activities including large-scale agriculture and livestock ranching activities that altered the natural environment. Parcel 279 was previously disturbed for the establishment of health care facilities. According to the U.S. Fish and Wildlife Service Information for Planning and Consultation system, there is no federally designated or proposed critical habitat at the project location, which is developed with existing health care facilities. Vegetation at the project site consists of intentional landscaping, mature canopy trees and cultivated plantings.

LEGEND

- Parcel Boundary
- AEF
- X
- AO
- AE

N

Scale:
1" = 250'

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Waimanlo Health Center Parcel 279

Figure 7 - Flood Zone Designation Map

March 2023

File: L:\1. PROJECTS\42 - ERSKINE\14228 - WHC Parcel 279\FIGURES\EA\7 Flood Zone Map.dwg;3/29/2023

The letter dated June 16, 2022 (Ref. 2022-0055194-S7-001) from the U.S. Fish and Wildlife Service, Pacific Islands Fish and Wildlife Office (USFWS-PIFWO) indicates that several state and/or federally listed endangered and threatened species may occur or transit through the vicinity of the proposed project area:

Hawaiian hoary bat (*Lasirus cinereus semotus*);
Hawaiian petrel (*Pterodroma sandwichensis*);
Newell's shearwater (*Puffinus auricularis newelli*); and
Hawaiʻi Distinct Population Segment band-rumped storm-petrel (*Oceanodroma castro*)

Impacts and Mitigation Measures

The proposed project includes tree removal as part of site preparation activities to allow large, heavy equipment to access and demolish old buildings. The USFWS-PIFWO recommends avoiding the cutting or removing of trees greater than 15 feet tall between June 1 and September 15, which is the bat birthing and pup rearing season.

The USFWS-PIFWO recommends the measures listed below to protect Hawaiian seabirds:

- Fully shield all outdoor lights so the bulbs can only be seen from below;
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area; and
- Avoid nighttime construction during the seabird fledging period, which is September 15 through December 15.

In its letter dated December 19, 2022 (Log no. 3931), the Hawaiʻi DLNR Division of Forestry and Wildlife (DOFAW) concurs with the measures intended to avoid constructional and operational impacts to State-listed species such as the Hawaiian hoary bat and seabirds. DOFAW also states that the invasive Coconut Rhinoceros Beetle (*Oryctes rhinoceros*) or CRB is known to occur in the vicinity of the project area and recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain invasive fungal pathogens (e.g., Rapid Ohia Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, CRB), or invasive plant parts that could harm native species and ecosystems. On July 1, 2022, the Hawaiʻi Department of Agriculture approved Plant Quarantine Interim Rule 22-1, which restricts the movement of CRB-host material within or to and from the island of Oʻahu, which is defined as the Quarantine Area. CRB host plants that may contain CRB at any life stage include palm plants in the following genera: *Washingtonia*,

Livistona, and *Prichardia* (all commonly known as fan palms), *Cocos* (coconut palms), *Phoenix* (date palms), and *Roystonea* (royal palms). Host material that is also considered a risk for CRB infestation includes entire dead trees; mulch, compost, trimmings, fruit and vegetative scraps; and decaying stumps.

The proposed project includes new landscaping with trees and native plants that are adapted to the local environment.

3.7. Archaeological and Cultural Resources

Numerous archaeological surveys have taken place throughout the Waimānalo Ahupuaʻa. No historic properties were identified in the current project area. The three closest previous archaeological studies include Sinoto and Pantaleo (1993-1994), Hunkin et al. (2010), and Medrando and Spear (2014). The investigation by Medrando and Spear (2014), which was conducted for WHC's project on Parcel 282, involved a pedestrian survey and six mechanically excavated stratigraphic trenches. No historic properties were identified from the 2014 survey of Parcel 282 or the other two studies. Parcel 279 is not located near and is not anticipated to have any effect on other Waimānalo historic properties listed on the State Inventory of Historic Places (SIHP):

State Site Number	Site Name
50-80-15-0382	Pohakunui Heiau
50-80-15-0489 and 0490	Koa (Rabbit Island)
50-80-15-0516	Waimānalo Taro Terraces
50-80-15-1031	Pueo Heiau
50-80-15-1037	Pahonu Turtle Pond
50-80-15-1355	U.S. Coast Guard Makapuʻu
50-80-15-9072	Hawaiian Trail and Mountain Club
50-80-15-9012	Alfred Hocking Beach House
50-80-15-4042	Waimanalo Ditch System

Parcel 279 is adjacent to military lands that were in use since 1917. These military lands include Bellows Field Archaeological Area (SIHP #50-80-15-0511), which is formally listed on the National Register of Historic Places. The Bellows Field complex contains a very early habitation and burial site documented by the Bishop Museum as Site 018. "It is accepted that the Bellows Field Archaeological Area was intended to primarily protect Site 018 and that the boundary of Bellows Field Archaeological Area was arbitrarily drawn when the extent of the archaeological resources was not known" (PBR Hawaii and Associates, Inc., 2012).

Preliminary geotechnical investigations conducted in 2013 for WHC by Hirata and Associates, Inc. included six exploratory borings (two borings on Parcel 279 and four borings on Parcel 282) to depths ranging from approximately 19.5 to 25.5 feet. The subsurface conditions for Parcel 279 were described as fill consisting of reddish brown

clayey silt mixed with gravel, extending to depths of approximately 12 and 20 inches. Soil conditions underlying the near surface fills was described as light tan to tan silty sand in a generally dense condition. The silty sand was weak to moderately cemented, and extended to the maximum depths that were drilled. Coralline gravel was encountered in the silty stand stratum at varying depths. The light tan to tan silty sand transitioned to a brownish tan and was mixed with coral fragments at deeper depths, ranging from about 13 to 19 feet.

Since 1966, the project site has been utilized for health care services initially provided by DOH and then WHC. As part of the EA preparation and HRS Chapter 343 process, consultation was sought from individuals with lineal and cultural ties to the area, and several agencies and organizations: the State Historic Preservation Division (SHPD), Oʻahu Burial Council, Office of Hawaiian Affairs (OHA), Department of Hawaiian Home Lands (DHHL), Waimānalo Hawaiian Homes Association (WHHA), and Native Hawaiian Chamber of Commerce.

Honua Consulting conducted a cultural impact assessment (CIA) for the proposed project on Parcel 279 per Act 50, Session Laws of Hawaiʻi 2000. Four individuals were interviewed; three of the interviewees are known community leaders and practitioners in Waimānalo. All respondants were generally supportive of the proposed project and appreciate the work that WHC does for the Native Hawaiian community. The report by Honua Consulting (2022) is included with the EA as Appendix D.

Impacts and Mitigation Measures

The proposed project on Parcel 279, which will serve a public purpose, is expected to result in no impacts to historic sites. The presence of subsurface remnants of pre-Contact and post-Contact agricultural or ranching deposits is unlikely based on the site usage history. Compilance with HRS Chapter 6E is occurring separately from the HRS Chapter 343 process in coordination with SHPD.

Unanticipated discoveries of archaeological and cultural resources may occur during ground disturbing activities. WHC will require its construction contractor to stop work and immediately notify SHPD in the event of a discovery of sites or human remains. WHC will prevent the disturbance or taking of any discovered archaeological, historic, or cultural resources to the extent possible by instituting the described mitigation measures (i.e., halt construction and immediately notify SHPD) and enforcing their implementation by its contractor.

The available knowledge suggests that the exercise of native Hawaiian rights or any ethnic group related to traditional or customary practices will not be impacted by the proposed project. Practitioners expressed concerns about construction that will occur during the project (see Section 3.10. Circulation and

Traffic). Potential impacts can be minimized through BMPs and the use of cultural monitors. An on-call cultural monitoring program, which involves notifying practitioners in the event of an inadvertent find, could be utilized during construction. Information and ethnographic data suggest that WHC's project has the potential to have a beneficial impact to cultural resources and traditional or customary practices in the area due to the ongoing work WHC does with the Native Hawaiian Community.

3.8. Visual Resources

Waimānalo is a rural community that is characterized by residential communities, small businesses, and agricultural lots interspersed with green space. Mature canopy trees help to soften the effect of low-density buildings and structures. The existing WHC facilities on Parcel 279 contribute to a line of adjacent building elements along the makai portion of Kalaniana‘ole Highway. There are no views of the shoreline from Kalaniana‘ole Highway in the vicinity of Parcel 279 due to abundant vegetation in the adjacent MCTAB lands.

Impacts and Mitigation Measures

The proposed project will be generally consistent with the visual character of the nearby vicinity, which is characterized by existing urban forms along Kalaniana‘ole Highway. The new one-story healthcare facility will not exceed the 25-foot building height limitations. The proposed project will include landscaping with trees and other plants that grow naturally and are appropriate to the climate of Waimānalo. Landscaping is included as part of the project.

3.9. Noise

The project site is located in a rural community where the primary noise source is related to vehicular traffic along Kalaniana‘ole Highway. The traffic volumes on this main arterial through Waimānalo are usually low except during peak travel periods in the morning and late afternoon; however, construction activities from other projects such as highway improvements are currently influencing traffic (see Section 3.10. Circulation and Traffic). Siren noise generated by the Waimānalo Fire Station also contributes to the background noise environment. In general, background noise in the vicinity of Parcel 279 is typically low.

Impacts and Mitigation Measures

Audible noise from demolition and construction activities is expected to be intermittent and unavoidable since construction vehicles and heavy equipment generate noise as part of normal operations. The mitigation of noisy activities to inaudible levels will not be practical in all cases due to the intensity and exterior nature of the work. Ambient noise levels in the vicinity of the project

site will increase due to the movement of construction vehicles and heavy equipment. Quieter construction activities, such as building erection and equipment installation, may not be audible. Construction noise is temporary in nature and will cease upon completion of the project.

Project activities shall comply with the provisions of HAR §11-46, "Community Noise Control" which are administered by the DOH IRHB. The construction contractor is expected to minimize noise by properly maintaining noise mufflers and other noise-attenuating equipment, and to maintain noise levels within regulatory limits. The regulations require a permit for excessive noise (e.g., noise that exceeds allowable levels stated in the administrative rules for more than 10 percent of the time within any 20-minute period). It shall be the contractor's responsibility to minimize noise by properly maintaining noise mufflers and other noise-attenuating equipment and to maintain noise levels within regulatory limits. If construction activities occur outside of the allowable timeframes designated for the noise permit (i.e., nighttime, Sunday, or holiday) and exceed allowable noise levels, a noise variance must be obtained before the commencement of construction activities, as required.

Anticipated noise will be mitigated by performing the majority of construction work during daytime hours (as opposed to night work), thereby avoiding the creation of construction noise impacts during nighttime hours. Daytime work will ensure minimal impacts to existing users adjacent to and in the vicinity of the project site.

The new healthcare facility represents a continuation of existing health care uses on Parcel 279 that contribute to the background noise environment. The backup generator for the proposed facility is expected to be isolated in an appropriate manner that avoids or minimizes significant noise.

3.10. Circulation and Traffic

Parcel 279 is located along Kalaniana‘ole Highway (State Highway Route 72) which is a two-lane arterial route connecting Makapu‘u, Waimānalo, and Kailua. Vehicular access to the project site is via a single driveway that will be reconstructed as part of the proposed project. Kalaniana‘ole Highway in the vicinity of the project site is an undivided, two-lane roadway with 10.5-foot travel lanes, 4 to 6-foot shoulders, and no dedicated turn lanes. The posted speed limit is 25 miles per hour in the vicinity of WHC's facilities and the Waimānalo Elementary and Intermediate School.

Improvements to Kalaniana‘ole Highway that are part of the Kalaniana‘ole Highway Improvements, Phase 2 project have been ongoing since January 3, 2022 and were anticipated to be completed in Fall 2022. Lane closures continued into 2023 for road resurfacing, sidewalk, curb, drainage system, and waterline work. The letter dated

July 1, 2022 from the WHHA describes a noticeable swell in traffic that may be attributed to the highway project, which includes the installation of additional concrete sidewalks, curbs, curb ramps, and gutters, pavement resurfacing, and various pedestrian crossing modifications. WHHA's constituents along with the staff at WHC and people who utilize WHC's services are experiencing the inconveniences from construction activities that are occurring adjacent to and fronting Parcels 279 and 282. Upon completion of the project, Kalaniana‘ole Highway will include 11-foot travel lanes, 5-foot shoulders, and 6 to 8-foot wide sidewalks on either side.

The City provides bus services to the area. Routes 67, 69, and 89 run along the project area and provide service to and from Kailua and Honolulu via Kalaniana‘ole Highway through Waimānalo. There are three bus stops in the east- and west-bound directions for a total of six stops in the vicinity of the project site between Moole and Inoaole Streets.

The traffic impact analysis report (TIAR) for Parcel 279 is included as Appendix E. The community of Waimānalo has shown a preference for maintaining the rural character along Kalaniana‘ole Highway, and residents have not desired improvements such as additional turn lanes or traffic signals. According to the analysis in the recent TIAR for Parcel 279, the intersections in the study area would have poor levels of service and low volume-to-capacity in the projected future but do not warrant traffic signals since traffic volumes would not increase. There would be increased traffic delays during peak hours; however, mitigation is not recommended at this time. The recommendation in the TIAR states that intersection operations should be monitored, and improvements made if necessary.

Impacts and Mitigation Measures

Disruptions to vehicular, bicycle, and pedestrian traffic during the various phases of construction will be intermittent and temporary in nature. Appropriate traffic control devices and warning signs will be installed and the traffic flow will be directed by construction personnel or by law enforcement personnel, when necessary. No traffic lane closures or traffic detours are expected in conjunction with the construction activities; however, a State-approved traffic control plan shall be prepared before the construction of the proposed project if lane closures or traffic detours are deemed necessary. Both WHHA and the Honolulu Police Department have expressed concerns about the temporary impacts to traffic that are anticipated from the proposed project. WHC will strive to inform area residents by providing project updates at the Waimānalo neighborhood board meetings.

The bus routes, bus stops, and paratransit operations are not expected to be impacted by demolition or construction activities within Parcel 279. Coordination with the City and County of Honolulu, Department of

Transportation Services (DTS), and Oahu Transit Services, Inc. (OTS) will be accomplished as necessary to ensure minimal inconvenience to motorists and public transportation service. The contractor would be responsible for notifying the necessary DTS and OTS personnel of pertinent project details (such as the construction schedule) at least two weeks before the commencement of construction activities.

The majority of construction work will be scheduled during daytime hours (as opposed to night work) when traffic volumes are generally low within the residential neighborhoods nearest to the project site. At night and when work is not occurring, all associated construction equipment will be secured and located within Parcel 279 to prevent obstructions to traffic.

It will be determined during the design phase whether the operation or transportation of any oversized and/or overweight vehicles and loads will be required during construction of the new healthcare facility. If required, these activities will be coordinated with all applicable Federal, State, and County agencies and all necessary permits/approvals will be acquired.

Appropriate setbacks and sight distances will be incorporated into the project design. The existing single, bi-directional driveway for Parcel 279 will be reconstructed as part of the proposed project. Traffic within the parking lot will operate in a one-way clockwise direction. Coordination and consultation with the DOT Highways Division Traffic Review Branch is expected to be conducted by the project representative and/or the construction contractor as a requirement for acquiring the necessary project approvals and permits. The findings in the TIAR indicate that there would be a minimal change to the level-of-service at nearby intersections as a result of project-related traffic such that traffic signals are not warranted. No additional trips are anticipated upon completion of the proposed new facility on Parcel 279, and the two-way driveway at the project site would work acceptably. The traffic analysis concluded that the proposed project will have little impact on traffic delays along Kalaniana‘ole Highway. No mitigation for project-related impacts is proposed.

3.11. Utilities (Water, Wastewater, Drainage)

Parcel 279 is located makai and down gradient from two Board of Water Supply (BWS) potable water supply wells and four tunnels that feed the domestic water supply system in Waimānalo, which also includes three reservoirs and one booster station (Townscape, Inc., 2012). The project area is served by the Windward 272-foot water system, which is reportedly adequate to accommodate the domestic and off-site fire protection requirements for the new healthcare facility. There will be two water supply lines, one domestic and one for the fire sprinkler system, and each line will have a

designated meter. Potable water service to Parcel 279 is available from an existing 12-inch water main along Kalaniana‘ole Highway.

The proposed project will connect to the City’s sewer system. The Waimānalo Wastewater Treatment Plant (WWTP) currently services the windward coast of O‘ahu from Makapu‘u to Waimānalo. Wastewater flows within the vicinity of the project site are conveyed to the WWTP via a 15-inch diameter vitrified clay pipe along Kalaniana‘ole Highway.

There are currently no City, State, or privately-owned drainage structures located within or adjacent to Parcel 279. The City owns and maintains a municipal stormwater drainage system within the surrounding City-owned streets. The Kalaniana‘ole Highway improvements are expected to include the installation of State-owned drainage structures along Kalaniana‘ole Highway in the vicinity of the project site. Stormwater runoff from Parcel 279 generally sheet flows from the site into the grassed area in the front yard of the property along the highway. Runoff then continues within the grassed swale along the westbound lane of Kalaniana‘ole Highway and into the streambed at Inoaole Bridge.

Impacts and Mitigation Measures

The new healthcare facility on Parcel 279 will require a new water service connection to the existing 12-inch water main along Kalaniana‘ole Highway. The letters dated June 30 and December 9, 2022 from BWS state that the existing water system is adequate to accommodate the proposed project, and water conservation measures are required for all proposed development. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval. The civil drawings will be submitted to the Honolulu Fire Department for review and approval to ensure that on-site fire protection requirements are met.

Parcel 279 will require a new lateral connection to the existing 15-inch sewer main along Kalaniana‘ole Highway. Obsolete wastewater lines on the project site will likely be abandoned in place. The City’s DPP has conditionally approved the sewer connection for Parcel 279. An Industrial Wastewater Discharge Permit may be required for the project. The contractor must notify the City’s Department of Environmental Services, Collection System Maintenance one week before the start of construction.

A short-term and temporary impact of the project would occur from the generation of additional surface runoff during construction and demolition work. Appropriate erosion and sediment control BMPs will be used to minimize the amount of soil transported in stormwater runoff during construction activities. As previously discussed in Section 3.3 Water Resources, all construction

activities will comply with applicable Federal, State, and County regulations and rules for erosion control. Construction of the new facility and parking lot on Parcel 279 will increase impervious areas, thereby increasing stormwater runoff. The anticipated impact will be offset by the installation of on-site drainage infiltration systems. The on-site drainage system will control excess sheet flow from the new parking lot.

3.12. Power and Communications

Utility poles and overhead lines for power and communications are generally located along Kalaniana‘ole Highway. Electrical power in the project area is provided by Hawaiian Electric Company, Inc. (HECO). In the letter dated June 30, 2022, Hawai‘i Gas states that it has no utility gas facilities in the area.

Telephone service in the project area is available from Hawaiian Telcom. Other communication services are provided by Charter Communications (or Spectrum). According to the letter dated July 8, 2022, Spectrum utilizes both HECO and Hawaiian Telcom poles. Spectrum’s information identifies existing cable television (CATV) structures that extend across Kalaniana‘ole Highway into the project site and are close to the western site boundary.

Impacts and Mitigation Measures

The construction contractor is expected to follow standard procedures that help to avoid disruptions to existing power and communication systems (including CATV structures). For example, existing surface and subsurface utilities and poles in the construction area should be protected by the contractor. Any damaged utilities shall be promptly repaired by the contractor to the satisfaction of the utility owner. Greenhouse gas emissions would occur during the temporary period of construction from diesel-power construction equipment and generators. No mitigation is proposed for short-term and temporary impacts.

The new healthcare facility on Parcel 279 is not anticipated to consume substantial amounts of energy since it represents a continuation of existing functions. Select buildings on Parcel 279 will be demolished after the relocation of services to a modern facility on Parcel 282 that incorporates sustainable building design concepts and energy-saving measures. There are no long-term impacts associated with establishing new service connections.

The establishment of communication services to the proposed new facility will be coordinated with the appropriate service provider. No mitigation is warranted or proposed.

3.13. Socio-Economic Characteristics

The rural community of Waimānalo as roughly covered by the boundaries of the Waimānalo Neighborhood Board No. 32 has a resident population of 11,237 persons according to the *2021 State of Hawai‘i Data Book* (State of Hawai‘i Department of Business, Economic Development and Tourism, 2022). WHC indicates that its community-based efforts focus on the large Native Hawaiian population of Waimānalo, which includes 6,488 Waimānalo residents who are Native Hawaiian or part-Hawaiian (U.S. Census Bureau, 2019).

DHHL owns approximately 2,000 acres in Waimānalo (Group 70, 2011). There are several DHHL housing areas in the surrounding vicinity of Parcel 279.

WHC operates within the geographic area of Waimānalo, which has an HRSA designation as a Medically Underserved Population and Health Professional Shortage Area. Physicians and practitioners at WHC serve the uninsured, accept MedQuest or Quest Expanded Access, and offer a sliding fee discount for services. WHC currently has 117 employees (83 permanent full-time staff, 21 permanent part-time staff and 13 individuals on call).

Impacts and Mitigation Measures

The proposed project, which will increase the service capabilities of WHC, will not affect population levels or housing. As indicated in the letter dated November 30, 2022 (Ref. PO-22-249), DHHL does not anticipate any impacts to its land or beneficiaries from the project. The letter also provides the recommendation from DHHL “to consult with Hawaiian Homestead community associations and other (N)native Hawaiian organizations when preparing EAs in order to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.”

The various phases of construction will create short-term jobs for people in design and construction. In the long term, there would be additional health-related employment opportunities at the WHC. The Hawaii Housing and Finance Development Corporation states in its email dated December 9, 2022 that WHC will provide a beneficial community amenity for the neighborhood.

3.14. Emergency Service Facilities and Shelters

Law enforcement services are provided by the Honolulu Police Department (HPD), District 4 (Kāne‘ohe, Kailua, Kahuku). District 4 is HPD’s largest patrol area, which extends from Makapu‘u Point to Kawela Bay on the windward side of O‘ahu. The nearest police station relative to the project area is the Kailua Substation on Kuulei Road in Kailua, which is approximately 5.3 miles from the project site.

Fire protection services are provided by the Honolulu Fire Department. The Waimānalo Fire Department is located between Parcels 279 and 282.

WHC provides primary and preventive health care services. The nearest emergency care facility relative to the project area is Adventist Health Castle Medical Center in Kailua.

The Waimānalo Elementary and Intermediate School located across Kalaniana‘ole Highway from Parcel 279 is a designated hurricane evacuation shelter. People who have special health needs will be accommodated and provided limited support at active shelters during or in response to emergency situations.

Impacts and Mitigation Measures

No significant adverse impacts to police, fire, medical, or emergency shelter services will occur from the completion of the new healthcare facility. The proposed project will be designed in consideration of fire department access and required fire flow for fire protection. In the letter dated July 18, 2022, HPD states that it anticipates short-term impacts to pedestrians and vehicular traffic in the area because the project site is off of the main roadway in the area. WHC will strive to inform area residents by providing project updates at the neighborhood board meetings.

3.15. Recreational Resources

The recreational resources closest to Parcel 279 are Waimānalo District Park, Bellows Field Beach Park, Sherwood Beach, Waimānalo Bay Beach Park, and Waimānalo Polo Field. Other opportunities for shared-use facilities (e.g., a high school with a football field, track, or swimming pool) and non-profit recreation centers (e.g., a YMCA or YWCA) are not present within the rural community of Waimānalo.

Impacts and Mitigation Measures

The proposed project creates no additional demand for recreational facilities. No mitigation is warranted or proposed.

4. RELATIONSHIP TO PLANS, POLICIES, AND CONTROLS

4.1. State Land Use District

The State Land Use Law (Chapter 205, HRS) is intended to preserve, protect, and encourage the development of lands in the State for uses that are best suited to the public health and welfare of Hawaiʻi's people. All lands in the State are classified into four land use districts by the State of Hawaiʻi, Land Use Commission: Urban, Agricultural, Conservation, and Rural. Parcel 279 is entirely located within the Urban District, which is regulated by county zoning (see Section 4.6. City and County of Honolulu Land Use Ordinance). The healthcare facility was recognized in 1995 as a public use. WHC continues to have service agreements with DOH, which supports the public use designation. The proposed project is a permissible public use within the Urban District, which has residential neighborhoods, commercial enterprises, industrial development, and community facilities including public buildings.

4.2. State Coastal Zone Management Program

The State of Hawaiʻi, Office of Planning and Sustainable Development administers Hawaiʻi's Coastal Zone Management (CZM) program that was established pursuant to Chapter 205A, HRS, as amended. The CZM program provides for the beneficial use, protection, and development of the State's coastal zone. The CZM area consists of the entire State of Hawaiʻi since there is no point of land more than 30 miles from the ocean. The objective of the Act is to protect, preserve, and restore recreational, historic, and scenic resources as well as implement the state's ocean resources management plan and protect coastal ecosystems. The CZM Act involves a system of permits to manage development within the coastal areas and encourage public participation. Any significant development within the SMA requires a permit from the appropriate County. On Oʻahu, the SMA permit is administered by DPP. Parcel 279 is located approximately 0.7 miles from the shoreline and outside the SMA. No SMA permit is required for the project, which supports several policies and objectives of the CZM program from HRS §205A-2.

1. *Recreational Resources*

   <u>Objectives</u>. Provide coastal recreational opportunities accessible to the public.

   <u>Policies</u>. Improve coordination and funding of coastal recreational planning and management; and

   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;

   (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;

(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;

(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;

(v) Ensuring public recreational uses of county, state, and federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;

(vi) Adopting water quality standards and regulating point and nonpoint sources of pollution to protect, and where feasible, restore the recreational value of coastal waters;

(vii) Developing new shoreline recreational opportunities, where appropriate, such as artificial lagoons, artificial beaches, and artificial reefs for surfing and fishing; and

(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.

The project is located away from the coast and outside the SMA. Coastal water quality will be protected since appropriate erosion control BMPs will be used to minimize the amount of soil transported in storm water during construction.

2. *Historic Resources*

Objectives. 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.

Policies. Identify and analyze significant archaeological resources;

Maximize information retention through preservation of remains and artifacts or salvage operations; and

Support state goals for protection, restoration, interpretation, and display of historic resources.

The available information suggests that the proposed project will result in no impacts to historic sites. The construction contractor will be required by WHC to comply with all State and County rules and laws pertaining to historic preservation. Construction activities will be halted and SHPD will be notified in the event any unanticipated archaeological or historic sites are encountered.

3. Scenic and Open Space Resources

Objectives. Protect, preserve, and, where desirable, restore or improve the quality of coastal scenic and open space resources.

Policies. Identify valued scenic resources in the coastal zone management area;

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;

Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and

Encourage those developments that are not coastal dependent to locate in inland areas.

There are no views of the shoreline from Kalaniana‘ole Highway in the vicinity of Parcel 279 due to abundant vegetation in the adjacent MCTAB lands. The proposed project is located inland and is not expected to diminish coastal scenic view areas or open space resources.

4. Coastal Ecosystems

Objectives. Protect valuable coastal ecosystems, including reefs, from disruption and minimize adverse impacts on all coastal ecosystems.

Policies. Exercise an overall conservation ethic, and practice stewardship in the protection, use, and development of marine and coastal resources;

Improve the technical basis for natural resource management;

Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

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

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 nonpoint source water pollution control measures.

The project is sited away from the shoreline and is not expected to disrupt or degrade coastal water ecosystems. WHC’s construction contractor will be responsible for implementing a storm water management plan and controlling runoff that can transport loose soil, excess nutrients and other pollutants. A NPDES permit will be required to ensure compliance with BMPs during construction.

5. Economic Uses

Objectives. Provide public or private facilities and improvements important to the State's economy in suitable locations.

Policies. Concentrate coastal dependent development in appropriate areas;

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

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.

The project does not involve coastal development; therefore, the policies pertaining to coastal economic development do not apply.

6. Coastal Hazards

Objectives. Reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Policies. Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;

Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;

Ensure that developments comply with requirements of the Federal Flood Insurance Program; and

Prevent coastal flooding from inland projects.

Coastal hazards are not expected to be exacerbated by the project, which is located inland and 0.7 miles from the nearest coastline. The construction contractor must implement BMPs that address the quality and quantity of stormwater leaving the affected area, which would help to reduce nonpoint source pollution into streams in the project area.

7. Managing Development

Objectives. Improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Policies. Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;

Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and

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.

The project does not impact or influence the development review process pertaining to the management of coastal resources and hazards. The environmental review process includes opportunities for public participation and comments pertaining to a variety of issues and topics including coastal resources and hazards.

8. *Public Participation*

Objectives. Stimulate public awareness, education, and participation in coastal management.

Policies. Promote public involvement in coastal zone management processes;

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

Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

The environmental review process provides public participation opportunities. A description of the outreach and consultation for the proposed project is described in Section 8, Public Agency Review and Consultation.

9. *Beach Protection*

Objectives. Protect beaches for public use and recreation.

Policies. 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;

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

Minimize the construction of public erosion-protection structures seaward of the shoreline.

Public access to beach areas will not be affected by the project, which is located inland and away from beaches and the shoreline. The project does not involve the construction of erosion-protection structures seaward of the shoreline.

10. Marine Resources

Objectives. Promote the protection, use, and development of marine and coastal resources to assure their sustainability.

Policies. Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;

Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;

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;

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

Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources.

The project is located inland and does not involve the use or development of marine and coastal resources.

4.3. Hawai‘i State Plan

The Hawai‘i State Plan (Chapter 226, HRS) outlines broad goals, policies, and objectives to serve as guidelines for the future growth and development of the State. The excerpts below are Hawai‘i State Plan objectives, policies, and priority guidelines that pertain to the proposed project in Waimānalo. The new healthcare facility on Parcel 279 will be near other existing public-use structures and facilities.

§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 Hawaii's land, air, and water resources.

(b) To achieve the land, air, and water quality objectives, it shall be the policy of this State to:

(7) Encourage urban developments in close proximity to existing services and facilities.

§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 the achievement of the following objectives:

(1) Fulfillment of basic individual health needs of the general public.

(b) To achieve the health objectives, it shall be the policy of this State to:

(1) Provide adequate and accessible services and facilities for the prevention and treatment of physical and mental health problems, including substance abuse.

§226-27 Objectives and policies for socio cultural advancement – government.

(a) Planning the State's socio-cultural advancement with regard to the government shall be directed towards the achievement of the following objectives:

(1) Efficient, effective, and responsive government services at all levels in the State.

(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.

(5) Assure that government attitudes, actions, and services are sensitive to community needs and concerns.

4.4. City and County of Honolulu General Plan

The *O‘ahu General Plan* (2021, Resolution 21-23, CD1) contains aspirational objectives and policies that address the physical, social, cultural, economic, and environmental concerns affecting the City and County of Honolulu. The General Plan was adopted by the Honolulu City Council on December 1, 2021 and signed by the Mayor on January 14, 2022. The excerpts below are General Plan policies and objectives that pertain to the proposed project, which is an extension of the urban development that already exists in Waimānalo along Kalaniana‘ole Highway.

VII. <u>Physical Development and Urban Design</u>

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.

Policy 7: Encourage the clustering of developments to reduce the cost of providing utilities and other public services.

Policy 9: Locate community facilities on sites that will be convenient to the people they are intended to serve.

Objective E: To maintain those development characteristics in the urban fringe and rural areas which make them desirable places to live.
Policy 4: Maintain rural areas that reflect an open and scenic setting, dominated by small to moderate-size agricultural pursuits, with small towns of low-density and low-rise character, and which allows modest growth opportunities tailored to address area residents' future needs.
Objective F: To create and maintain attractive, meaningful, and stimulating environments throughout Oahu.
Policy 5: Require developments in stable, established communities and rural areas to be compatible with the existing communities and areas.

The project is proposed at this time to allow for the long-term continuation of health care services currently provided by WHC. Four existing buildings that are at the end of their service life will be demolished as part of the proposed project, and the new one-story facility on Parcel 279 will be designed for modern health care. The new facility is expected to be appropriate for the area and consistent with existing urban forms and development along Kalaniana‘ole Highway.

The project site, which is across from the Waimānalo Public Library and the Waimānalo Elementary and Intermediate School, is a developed parcel that is served by existing utilities. The one-story facility is expected to be designed with due consideration to the rural setting and low-density character of Waimānalo.

IX. <u>Health and Education</u>
Objective A: To protect the health and well-being of residents and visitors.
Policy 1: Encourage the provisions of health-care facilities that are accessible to both employment and residential centers.
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.

As a result of the project, Parcel 279 will continue to be utilized for community-based health care services. WHC provides health services to the medically underserved population of Waimānalo and the Ko‘olaupoko area which has a high concentration of Native Hawaiian and part-Hawaiian families. The proposed facility on Parcel 279 allows for the convenient delivery of needed services to the surrounding community and people that WHC is intended to serve.

4.5. Koʻolau Poko Sustainable Communities Plan

The Island of Oʻahu is divided into eight Development Plan areas as required by a 1973 City Charter; the plans for six of these areas have been designated as "Sustainable Communities Plans" to highlight the intent that these areas are not to be heavily developed, and that existing communities and special qualities of each region should be sustained and improved. Each Development Plan and Sustainable Communities Plan (SCP) implements the objectives and policies of the General Plan and serves as a guide for public policy, investment, and decision making within each respective region. Together with the General Plan, these documents guide population and land use growth over a 20- to 25-year time span.

Parcel 279 is located within the region encompassed by the Koʻolau Poko SCP, which established policies to shape the growth and development of the Koʻolau Poko region in 1983. The revised Plan was adopted in August 2017 and seeks to guide public policy, land use decision-making, and infrastructure investment for the region through the 2035. It continues the vision to protect community resources, residential character, and the adoption of public improvement programs and development regulations that reflect a stable population. The Plan calls for adaptation of the traditional ahupuaʻa concept as a basis for land use and natural resources management. The following excerpts are the vision, policies, principles and guidelines that are applicable to the proposed project.

VISION:

The vision and plan for Koʻolau Poko focuses on the long-term protection of community resources, residential character, and the adoption of public improvement programs and development regulations that reflect a stable population.

Although Koʻolau Poko is nearly built-out, it is essential to continue to improve and replace, as necessary, the district's aging infrastructure systems to maintain adequate capacity, improve operational performance or extend the useful life of facilities. Infrastructure modifications are also made to enhance the quality of the urban, rural, neighborhood or natural environment.

KEY ELEMENTS OF THE VISION:

2.1.6. Define and enhance existing commercial and civic districts.

In the commercial districts of Waimānalo and Kahaluʻu, building scale and design character are appropriate to a rural area. They have a "village center" ambiance where uses and activities such as farmers' markets and feed stores have a visible presence.

2.1.7. Maintain the Community Growth Boundary to protect agricultural, open space, and natural resources.

The "rural" areas within the Community Growth Boundary consist of smaller, more dispersed, less intensively developed residential communities and towns than those of Koʻolau Poko's "urban fringe" areas; namely, the sections of Waimānalo, Kahaluʻu, Waiʻāhole and Waikāne in the State Urban District where there are clusters of parcels that are less than two acres in size occupied by dwellings or buildings used for community or commercial purposes other than agriculture. Development character is generally low-density, low-rise, small scale, and reflective of a "country" setting.

The proposed project is consistent with the above statements from the Koʻolau Poko SCP. WHC's new health care facility will replace four existing buildings that are at the end of their service life. The new one-story facility on Parcel 279 will be designed with due consideration to the rural setting and low-density character of Waimānalo. The proposed project is expected to be generally consistent with the visual character of existing urban forms in the nearby vicinity and along Kalanianaʻole Highway.

<u>Chapter 3: Land Use Policies, Principles and Guidelines</u>
3.7 INSTITUTIONAL USES

3.7.1. Policies

Existing Campuses. Existing institutions may expand facilities and programs within the campuses they presently occupy; however, because the major institutions are located adjacent to significant scenic resources, ensure that the campuses retain an open space character. Design and site buildings and facilities on the campus to respect the scenic context. Ensure that the architectural character of institutional buildings and structures respect the surrounding urban and natural features, particularly when located adjacent to a residential area or significant natural or historic feature.
Environmental Compatibility. Encourage energy efficient features, such as the use of solar panels for heating water, and passive solar design, such as the use of window recesses and overhangs and orientation of openings to allow natural cross-ventilation. Also, incorporate resource conservation measures, such as water flow constrictors and facilities for the sorting of waste materials for recycling, in the design of new development.

3.7.2. Guidelines

Architectural Character and Building Massing

- *Reflect in the site plan a campus-like environment with a relatively low building coverage ratio and low profile, emphasize open space and landscaping.*
- *Vary the architectural character, depending on theme and purpose of the use. Design portions of buildings that are adjacent to or readily visible from residential areas to reflect that residential character or be screened from view from such areas by landscaping.*
- *Limit building heights to two to three stories or 40 feet, including the roof form. Provide height setback transitions from street frontages, the shoreline, and adjacent residential areas.*

Visual Screening, Lighting and Signage

- *Buffer the noise and other adverse impacts from parking, loading, and service areas from adjacent residential areas by a combination of walls or berms and landscaped setbacks.*
- *Plant a landscape screen, consisting of trees and hedges, along streets fronting parking lots or garages. Plant shade trees throughout parking lots.*
- *Visually screen storage areas for vehicles, equipment, and supplies from the street and adjacent lots by privacy walls and buildings, fronted by landscaping used to soften the appearance of large solid walls.*
- *Signage is non-illuminated or indirectly illuminated. Outdoor lighting is fully shielded to avoid light trespass over residential areas.*

3.7.3. Relation to Map A-3, Public Facilities

The general locations of existing larger institutions, such as intermediate and high schools, colleges, hospitals and correctional facilities, are indicated on the Public Facilities Map, A-3. Elementary schools, churches, child care centers, fire stations, and other public facility and utility uses serving the area are not specifically designated on the Public Facilities Map, A-3, but are allowed in all residential and commercial areas, subject to appropriate zoning controls to assure compatibility with surrounding uses.

The proposed project is consistent with the above excerpts from the Koʻolau Poko SCP of land use policies and guidelines pertaining to institutional uses. Health care

services were initially provided at the project site in 1966 through pilot projects run by DOH. The establishment of WHC in 1989 contributed to the availability of health care services and programs in Waimānalo that continue at this time through WHC's service agreements with DOH. The new healthcare facility represents a continuation of health care uses on Parcel 279. WHC's project will be developed on its existing campus, which is located within a rural area characterized by low-density land uses. The new healthcare facility is designed as a one-story building that will not exceed the 25-foot building height limitations. Landscaping is included as part of the project.

Existing health care facilities in Waimānalo including WHC's campus on Parcel 279 are not specifically designated on the City's Public Facilities Map, A-3. WHC provides various general health care services to the community under agreements with DOH, and WHC's facility on Parcel 279 was recognized as a "public use" in 1995. WHC's project will result in a new one-story healthcare facility that maintains a continuous line of development including single-family homes, public use facilities and church facilities along the makai portion of Kalaniana'ole Highway.

4.6. City and County of Honolulu Land Use Ordinance

The City and County of Honolulu Land Use Ordinance regulates land use in accordance with adopted land use policies, including the City and County of Honolulu General Plan and the Development/Sustainable Community Plans. The zoning for Parcel 279 is R-5 Residential District (refer to Figure 4). Development requirements for the R-5 Residential District include a 30-foot front yard setback, 15-foot side/rear yard setback requirements, and a 25-foot building height limit. Public uses and structures are allowed in all zoning districts including the R-5 Residential District.

In 1995, WHC's facility was recognized as a "public use" because WHC provides various general health care services to the community under agreements with DOH to fulfill specific functions for the public good, as authorized by State law. Contractual agreements between DOH and WHC help to ensure the availability of health care programs and services for the community. Service agreements between DOH and WHC are likely to be renewed at the end of their contract period (see Appendix A for the DOH letter dated July 28, 2022). Pursuant to §21-2.130 of the LUO, the Director of DPP may waive the strict application of development or design standards for public or public/private uses and structures, and utility installations.

5. POSSIBLE ALTERNATIVES

5.1. No-Action

As a result of no action, four existing buildings on Parcel 279 would not be demolished or replaced with a new facility and the parking lot would not be altered. No action implies that there would be no construction-related activities and no commitment of funding or capital improvement costs for site improvements to WHC's Hale Ola 'Akahi facilities, which consist of five separate buildings arranged in a U-shape around a parking lot on Parcel 279.

The potential for an unplanned disruption to health care services may increase over time with no action and continued use of older portable trailers that are at the end of their service life. In the long term, the no action alternative may still result in the need for funding and financial expenditures as the buildings continue to age. Financial resources that are expended for increased repair and maintenance costs would be unavailable for health care programs and services. For all of these reasons, WHC has determined that no action is less favorable than the proposed action.

5.2. Delayed Action

A delayed action implies that a project of similar scope and size to the proposed action would occur on Parcel 279 at an unspecified future date. Demolition and construction that occurs at a later date would postpone but not avoid the anticipated environmental impacts associated with the development of a new health care facility on Parcel 279. In other words, the environmental consequences of a delayed action would be similar to the proposed action as long as site conditions remain similar to the evaluated conditions described in this EA.

WHC does not favor a delayed action for several reasons: it may result in increased construction costs due to inflation, changes in economic conditions, or the labor supply. Building materials and labor costs tend to increase with time; therefore, a delayed action may require a greater funding commitment for the one-story facility or a reduction in the scope and size of the facility.

5.3. Renovate the Existing Facility

The renovation of existing buildings on Parcel 279 that are at the end of their service life would involve a range of actions to address deficiencies and/or damage from regular use during WHC's history. As previously stated in Section 1. Introduction, WHC began providing services at Parcel 279 in 1992 after the DOH facilities were transferred to WHC and renovated. Before the existence of WHC, maternal and child health services in Waimānalo were provided by DOH through pilot projects that began in 1966.

A renovation project would improve site infrastructure and replace obsolete mechanical and electrical equipment. The renovation of existing facilities is unlikely to address the original configuration of separate buildings in a U-shape around the parking lot on Parcel 279. The inefficient configuration has space redundancies such as separate waiting areas, and limits the ability of WHC to respond to operational needs (e.g., distancing requirements during the pandemic). The improvement of traffic flow and circulation within the project site would be constrained by retaining the existing facility.

Renovation work has the potential to reveal unknown public safety hazards or environmental concerns in interior and exterior building elements. Unanticipated circumstances that cause delays in phasing and timing may increase capital improvement costs since materials and labor costs may increase with time. The option to renovate WHC's existing facility on Parcel 279 is therefore a possible but less desirable alternative to the proposed action.

5.4. New Facility (the Preferred Alternative)

Four existing buildings that are at the end of their service life will be demolished as part of the proposed project. The new one-story facility incorporates design concepts that consider modern standards for patient care. Completion of the new facility as currently designed and configured will allow WHC to house oral health care, vision, health promotion, disease prevention, and cultural healing services in a modern health care facility with properly configured and adequately sized patient care spaces, offices for staff, and support areas. The proposed one-story building is consistent with existing urban forms and development along Kalaniana‘ole Highway. The concept for the proposed health care facility on Parcel 279 balances existing site constraints such as parking and traffic considerations with WHC's goals for improving the delivery of much-needed health care services.

The conceptual site design reduces space redundancies such as waiting areas and incorporates outdoor spaces as waiting and gathering areas for patients and staff. WHC will incorporate lessons learned during the pandemic with regards to incorporating outdoor spaces into its operation. The proposed action includes additional on-site parking, utility system improvements, and landscaping. The preferred alternative represents WHC's commitment to provide primary and preventive health care services in Waimānalo in fulfillment of its mission.

6. PERMITS AND APPROVALS

Although exact permitting and approval requirements will be determined during the design phase, the following list contains permits and approvals that may be required for the proposed project:

State of Hawaiʻi

- National Pollutant Discharge Elimination System Permit
- Community Noise Permit
- Community Noise Variance
- Non-Covered and/or Covered Source Permit (Air Quality)
- Lane Use Permit for Construction Work
- Oversized and Overweight Vehicles on State Highways Permit
- Disability and Communication Access Board Review
- State Historic Preservation Division Review

City and County of Honolulu

- Building Permit
- Grubbing, Grading, and Stockpiling Permit
- Erosion Control Plan/Best Management Practices
- Industrial Wastewater Discharge Permit

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7. DETERMINATION

The proposed new health care facility is not likely to have a significant impact on the physical or human environment based on the analysis presented in this document. In consideration of the potential environmental effects and consultations with governmental agencies and interested parties, the recommended determination is a Finding of No Significant Impact (FONSI). The supporting rationale for this finding as set forth in HAR §11-200.1-13 is discussed below.

(1) Irrevocably commit a natural, cultural, or historic resource;

The demolition of older buildings on Parcel 279 and construction of new health care facility will not endanger any natural, cultural, or historic resource. WHC's construction contractor shall stop work and contact SHPD immediately in the event any unanticipated buried archaeological or cultural resources are encountered.

(2) Curtail the range of beneficial uses of the environment;

No beneficial uses of the environment will be curtailed as a result of the proposed project, which represents the continued presence of WHC in Waimānalo. The proposed new facility is a continuation of the beneficial use of the project site for a public purpose.

(3) Conflict with the State's environmental policies or long-term environmental goals established by law;

The proposed project would be in conformance with State Environmental Policy, inclusive of its individual policies, goals, and guidelines for population growth; natural resources; biological resources; transportation; energy; and culture, as discussed in the individual resource categories throughout this EA.

(4) Have a substantial adverse effect on the economic welfare, social welfare, or cultural practices of the community and State;

The proposed project does not substantially or negatively affect the economic or social welfare and cultural practices of the community or State. The project creates short-term jobs for people in design and construction. Completion of the new health care facility would allow WHC to continue to provide comprehensive primary and preventive care to persons of all ages, regardless of their health insurance status or ability to pay. In the long-term, there is potential for an increase in mostly health-related occupations at the WHC.

(5) Have a substantial adverse effect on public health;

Public health will not be adversely affected by the proposed project. Short-term and temporary effects such as surface runoff, fugitive dust, noise, intermittent traffic, and solid waste are expected to cease upon project completion. The implementation of mitigation measures will minimize temporary impacts. In the long-term, ambient noise levels associated with the new facility are expected to be similar to other public use facilities in the area. Completion of the project would allow for the transition of much-needed patient care services from older facilities that are inefficiently configured and inadequately sized to a new health care facility that incorporates modern standards for patient care.

(6) Involves adverse secondary impacts, such as population changes or effects on public facilities;

No substantial secondary impacts such as population shifts are anticipated from the proposed project. In the long-term, there is potential for a minimal increase in mostly health-related occupations at WHC. Existing facilities on Parcel 279 already receive utility services such as potable water, wastewater disposal, solid waste disposal and power. The new facility represents a continuation of the public use at the project site.

(7) Involves a substantial degradation of environmental quality;

The proposed project is not expected to degrade environmental quality. Environmental impacts that may occur during the various phases of construction will be mitigated through the implementation of appropriate mitigation measures identified throughout this EA.

(8) Be individually limited but cumulatively have substantial adverse effect upon the environment or involves a commitment for larger actions;

The proposed project is expected to accommodate the existing and future health care needs of the uninsured and the medically underserved population of Waimānalo. The expanded health care facility represents a long-term commitment from WHC to the community. WHC's project is not part of or associated with a supplemental future action.

(9) Have a substantial adverse effect on a rare, threatened, or endangered species, or its habitat;

There is no federally designated critical habitat within the immediate vicinity of the project site. The proposed project is not anticipated to displace or have a substantial effect on protected federal or State of Hawaii listed species.

(10) Have a substantial adverse effect on air or water quality or ambient noise levels;

Short-term impacts to air quality, water quality or ambient noise levels may occur during construction and demolition. The implementation of mitigation measures is expected to avoid the exceedance of Federal or State air quality, noise and water quality standards. Environmental impacts will be mitigated through proper construction techniques and compliance with permits and applicable administrative rules and regulations.

(11) Have a substantial adverse effect on or be likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, sea level rise exposure area, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

The proposed project is not situated within an environmentally sensitive area and is not anticipated to affect such areas.

(12) Have a substantial adverse effect on scenic vistas and viewplanes, during day or night, identified in county or state plans or studies; or

The new facility on Parcel 279 will not obstruct or affect scenic vistas and view planes identified in State or County plans and studies. Landscaping around the new health care facility is expected to further reduce the visual impact.

(13) Require substantial energy consumption or emit substantial greenhouse gases.

The proposed project is not anticipated to consume substantial amounts of energy because sustainable building design concepts and energy saving measures will be incorporated. Greenhouse gas emissions from diesel-power construction equipment and generators would occur during the temporary period of construction. No mitigation is proposed for temporary impacts. In the long-term, new health care facility represents a continuation of WHC's operations that already receive power and communications service.

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8. PUBLIC AGENCY REVIEW AND CONSULTATION

8.1. Pre-Assessment Consultation

The consulted agencies, organizations, and individuals are listed below. There were fifteen (15) formal responses to the pre-assessment consultation letter, as indicated by the ✓ below. Comments and responses are included in Appendix F.

Federal Agencies

✓ U.S. Fish and Wildlife Service
U.S. Air Force, Bellows Air Force Station
Marine Corps Base Hawai‘i

State of Hawai‘i

Department of Land and Natural Resources
- Commission on Water Resource Management
- Division of Forestry & Wildlife
- State Historic Preservation Division
- O‘ahu Burial Council
- ✓ Land Division
- Engineering Division

Department of Health
- ✓ Indoor and Radiological Health Branch
- Clean Air Branch
- Clean Water Branch
- Safe Drinking Water Branch
- ✓ Solid and Hazardous Waste Branch
- ✓ Wastewater Branch
- Environmental Health Administration, Environmental Management Division

✓ Hawaii Housing Finance & Development Corporation
Office of Hawaiian Affairs
Office of Planning and Sustainable Development
Department of Hawaiian Home Lands
✓ Department of Transportation
Department of Education
- Windward O‘ahu District Office
- Waimānalo Elementary and Intermediate School

Senator Chris Lee (District 25)
Representative Lisa Martin (District 51)

City and County of Honolulu

✓ Department of Planning and Permitting
✓ Department of Design and Construction
✓ Department of Transportation Services

City and County of Honolulu (continued)

Department of Environmental Services
✓ Board of Water Supply
✓ Honolulu Police Department
Honolulu Fire Department
Councilmember Esther Kiaʻāina
Neighborhood Commission Office
Waimānalo Neighborhood Board

Utilities

✓ Charter Communications (or Spectrum)
✓ Hawaiʻi Gas
Hawaiian Electric Company Inc.
Hawaiian Telcom

Organizations, Associations and Community Members

The Native Hawaiian Chamber of Commerce
Onipaa Na Kupuna O Waimānalo
✓ Waimānalo Hawaiian Homes Association
Waimānalo Village Residents' Corporation

Neighboring or Nearby Property Owners and Recorded Lessees

4-1-009:272 (St. George Church)
4-1-012:161
4-1-012:162
4-1-012:163
4-1-012:164
4-1-012:165
4-1-012:166
4-1-034:091
4-1-034:094
4-1-034:095
4-1-034:096

WHC provided information about its proposed project at the June 13, 2022 meeting of the Waimānalo Neighborhood Board No. 32. Information and regulatory guidance from the formal comments has been incorporated in this EA.

8.2. Public Review

A notice of availability for the Draft EA and Anticipated Finding of No Significant Impact (DEA-AFONSI) was published by the Environmental Review Program in the November 23, 2022 issue of *The Environmental Notice*. The published notice initiated the statutory 30-day public review and comment period. Copies of the DEA-AFONSI were available at the Hawaiʻi State Library and at the Waimānalo Public and School Library during the review and comment period, which ended on December 23, 2023. WHC provides regular updates to the Waimānalo Neighborhood Board No. 32, and will continue to share information as its project proceeds.

Ten (10) formal responses to the Draft EA were received. The comments are generally characterized as follows:

<u>Provides no comments</u>

City and County of Honolulu, Department of Design and Construction

<u>Provides information and/or recommendations</u>

Department of Hawaiian Home Lands (also anticipates no impacts to its land or beneficiaries)

Department of Health, Indoor and Radiological Health Branch

Department of Health, Solid and Hazardous Waste Branch

Department of Land and Natural Resources, Land Division, Engineering Division, and Division of Forestry and Wildlife

Board of Water Supply

City and County of Honolulu, Department of Planning and Permitting

City and County of Honolulu, Department of Transportation Services

<u>Acknowledges beneficial aspects of project</u>

Hawaii Housing and Finance Development Corporation (also states no comments)

Marine Corps Base Hawaii (also anticipates no impact to its training or operations)

The substantive comments were reviewed, evaluated, and incorporated into the Final EA as appropriate. For example, Section 3.6. Floral and Faunal Resources includes the information and recommendations provided by DOFAW pertaining to the Coconut Rhinoceros Beetle, which is known to occur in the vicinity of the project area. Statements from DHHL and the Hawaii Housing and Finance Development Corporation appear in Section 3.13. Socio-Economic Characteristics.

Minor revisions that address the comments from DPP are reflected in Sections 4.4. City and County of Honolulu General Plan and 4.5. Koʻolau Poko Sustainable

Communities Plan. The comments from all comment periods and the responses to those comments are included in Appendix F.

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Appendix A

Letter About Waimānalo Health Center's Public Use

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DAVID Y. IGE
GOVERNOR OF HAWAII

Elizabeth A. Char, M.D.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
HEALTH RESOURCES ADMINISTRATION
FAMILY HEALTH SERVICES DIVISION
P.O. BOX 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
File:F/23-04

July 28, 2022

Dean Uchida, Director
Department of Planning and Permitting
City and County of Honolulu
650 S. King St., 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Uchida,

This letter is in response to your questions regarding the statutory basis for the contractual agreements between the Department of Health (DOH) and the Waimanalo Health Center (WHC).

The WHC began providing comprehensive health care services to residents in the Waimanalo area since September 1992. The community of Waimanalo had been designated as a “medically underserved population” (MUP) effective May 1990 under the provisions of Section 330(b)(6) of the Public Health Service Act, 42 U.S.C. 24c(b)(6), as amended by Public Law 99-280 due to medical underservice indicators and other risk factors. The DOH has entered into contractual agreements with WHC since September 1992 for the provision of comprehensive health services including perinatal, pediatric, and adult primary care, behavioral health care, dental treatment, pharmaceutical services and the Special Supplemental Nutrition Program for Women, Infants, and Children (WIC) services. ASO Log No. 20-012 (primary care) contract period will end 8/31/2025 and ASO Log No.18-133 for WIC services contract period will end 9/30/2023. WHC has had a long history with DOH in providing these services and it is anticipated that these service agreements with WHC will likely be renewed at the end of their contract period.

The statutory basis for the contractual agreement between the DOH and WHC is Part XXV - Maternal and Child Health Program, Sections 321-321 to 321-326 of the Hawaii Revised Statutes (HRS). The purpose of this part is to enable the DOH to assure the availability of programs and services which promote the health of women of childbearing age, mothers, families, infants, children, youths, and adolescents. Section 321-325, HRS, allows the DOH to enter into "agreements with the United States and with other state departments, agencies, and political subdivisions, and enter into assistance agreements for services with profit organizations incorporated under the laws of the State or nonprofit organizations determined to be exempt from the federal income tax by the Internal Revenue Service, and allocate and expend any funds appropriated for the purposes of such agreements and do all things necessary to accomplish the purposes and provisions of this part."

Should there be further questions in reference to the above matter, please do not hesitate to contact me at (808) 586-4121.

Sincerely,

for Matthew J. Shim, Ph.D., M.P.H.
Chief, Family Health Services Division

Appendix B

Site Photographs (by Waimānalo Health Center) and
Conceptual Renderings (by Erskine Architects, Inc.)

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Photo #1. View of Waimānalo Health Center's existing Hale Ola ʻAkahi facilities on the project site. Kalanianaʻole Highway is in the foreground. Existing buildings are arranged in a U-shaped configuration around the parking lot.

Photo #2. Aerial view looking southwest from within the project site towards Kalanianaʻole Highway, Waimānalo Elementary and Intermediate School and existing single-family residences. The Koʻolau Mountain Range is in the distant background.

Photo #3. Aerial view of one-story buildings on the western portion of the project site that will be demolished. The proposed new one-story facility will be located on the western half of the project site and the parking lot will be reconfigured.

Photo #4. View from the parking lot of an existing one-story building that will be demolished. Single-family homes along the western site perimeter are behind the one-story building and not visible in this view.

Photo #5. View of the existing one-story Administration building located along Kalaniana‘ole Highway that will be demolished. The proposed project involves the demolition of four separate one-story buildings on the project site.

Photo #6. View along Kalaniana‘ole Highway of the existing Administration building that will be demolished. The existing buildings on the project site contribute to a line of urban forms along the highway including single-family homes, public use facilities and church facilities.

Photo #7. View along Kalaniana‘ole Highway of the existing Dental Services building that will be demolished. St. George Church is along the eastern site boundary and visible along the right side in this view.

Photo #8. View from the parking lot of two existing one-story buildings on the eastern portion of the project site that will be demolished. The proposed new one-story facility will be located on the western half of the project site and the eastern half will contain a reconfigured parking lot.

Conceptual Rendering #1 by Erskine Architects, Inc. The proposed one-story facility consisting of 7,300 square feet is designed to improve workflow with more efficient space considerations that consider team-based care concepts.

Conceptual Rendering #2 by Erskine Architects, Inc. The proposed project includes improvements to site infrastructure, and reconfiguration of the parking lot to improve onsite vehicular circulation and access to patient parking spaces.

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Appendix C

Flood Hazard Assessment Report

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Flood Hazard Assessment Report

www.hawaiinfip.org

Property Information

COUNTY:	HONOLULU
TMK NO:	(1) 4-1-009:279
WATERSHED:	KAHAWAI
PARCEL ADDRESS:	ADDRESS NOT DETERMINED WAIMANALO, HI 96795

Notes:

Flood Hazard Information

FIRM INDEX DATE:	NOVEMBER 05, 2014
LETTER OF MAP CHANGE(S):	NONE
FEMA FIRM PANEL:	15003C0380H
PANEL EFFECTIVE DATE:	NOVEMBER 05, 2014

THIS PROPERTY IS WITHIN A TSUNAMI EVACUTION ZONE: NO
FOR MORE INFO, VISIT: http://www.scd.hawaii.gov/

THIS PROPERTY IS WITHIN A DAM EVACUATION ZONE: NO
FOR MORE INFO, VISIT: http://dlnreng.hawaii.gov/dam/

0 200 400 ft

Disclaimer: The Hawaii Department of Land and Natural Resources (DLNR) assumes no responsibility arising from the use, accuracy, completeness, and timeliness of any information contained in this report. Viewers/Users are responsible for verifying the accuracy of the information and agree to indemnify the DLNR, its officers, and employees from any liability which may arise from its use of its data or information.

If this map has been identified as 'PRELIMINARY', please note that it is being provided for informational purposes and is not to be used for flood insurance rating. Contact your county floodplain manager for flood zone determinations to be used for compliance with local floodplain management regulations.

FLOOD HAZARD ASSESSMENT TOOL LAYER LEGEND
(*Note: legend does not correspond with NFHL)*

SPECIAL FLOOD HAZARD AREAS (SFHAs) SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD - The 1% annual chance flood (100-year), also know as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. SFHAs include Zone A, AE, AH, AO, V, and VE. The Base Flood Elevation (BFE) is the water surface elevation of the 1% annual chance flood. Mandatory flood insurance purchase applies in these zones:

	Zone A: No BFE determined.
	Zone AE: BFE determined.
	Zone AH: Flood depths of 1 to 3 feet (usually areas of ponding); BFE determined.
	Zone AO: Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined.
	Zone V: Coastal flood zone with velocity hazard (wave action); no BFE determined.
	Zone VE: Coastal flood zone with velocity hazard (wave action); BFE determined.
	Zone AEF: Floodway areas in Zone AE. The floodway is the channel of stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without increasing the BFE.

NON-SPECIAL FLOOD HAZARD AREA - An area in a low-to-moderate risk flood zone. No mandatory flood insurance purchase requirements apply, but coverage is available in participating communities.

	Zone XS (X shaded): Areas of 0.2% annual chance flood; areas of 1% annual chance flood with average depths of less than 1 foot or with drainage areas less than 1 square mile; and areas protected by levees from 1% annual chance flood.
	Zone X: Areas determined to be outside the 0.2% annual chance floodplain.

OTHER FLOOD AREAS

	Zone D: Unstudied areas where flood hazards are undetermined, but flooding is possible. No mandatory flood insurance purchase apply, but coverage is available in participating communities.

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Appendix D

Cultural Impact Assessment Report (by Honua Consulting)

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Cultural Impact Assessment for the Proposed New Construction of the Expansion Facility
Tax Map Key (TMK) [1] 4-1-009:279, Waimānalo, Koʻolauloa

Prepared for

WAIMĀNALO HEALTH CENTER

Prepared by

HONUA CONSULTING

November 2022

HONUA CONSULTING

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Note on Hawaiian Language Use

In keeping with other Hawaiian scholars, we do not italicize Hawaiian words. Hawaiian is both the native language of the paeʻāina of Hawaiʻi and an official language of the State of Hawaiʻi. Some authors will leave Hawaiian words italicized if part of a quote; we do not. In the narrative, we use diacritical markings to assist our readers, except in direct quotes, in which we keep the markings used in the original text. We provide translations contextually when appropriate. Unless otherwise noted, all translations are by Honua Consulting authors.

Front Cover Credit

Hawaii State Archives
n.d. Image of Waimānalo Health Center

Suggested Citation

Watson, T.K., Monahan, C., Sproat, M., McKown, E., Au, J, and Thetford, C.
2022 *Cultural Impact Assessment of the* proposed construction of the expansion facility and additional patient parking space will allow WHC to relocate and expand clinical and programmatic services from existing, outdated trailers, (TMK) 1-4-1-009:279, Waimānalo, Koʻolauloa, Oʻahu, Prepared for Waimānalo Health Center, Honua Consulting, Honolulu, Hawaiʻi.

Executive Summary

At the request of Waimānalo Health Center, Honua Consulting, LLC prepared a Cultural Impact Assessment (CIA) for the proposed construction of the expansion facility and additional patient parking space will allow WHC to relocate and expand clinical and programmatic services from existing, outdated trailers located at 41-1347 Kalaniana'ole Highway on State of Hawai'i Department of Land and Natural Resources (DLNR) property, Tax Map Key (TMK) 1-4-1-009:279, in the ahupua'a of Waimānalo, which are part of the moku of Ko'olauloa on O'ahu.

The project area, located on Tax Map Key (TMK) 4-1-009:279, is positioned along Kalaniana'ole Highway, adjacent to St. George Church, and across from Waimānalo Elementary and Intermediate School. WHC is proposing to demolish four separate one-story buildings that have reached the end of their service life. Completion of the project will allow WHC to provide its services and programs from a modern, one-story health care facility. The proposed project includes associated improvements to site infrastructure and reconfiguration of the parking lot to improve onsite vehicular circulation and access to patient parking spaces.

Research in preparation of this report consisted of a thorough search of Hawaiian language documents, including but not limited to the Bishop Museum Mele Index and Bishop Museum archival documents, including the Hawaiian language archival cache. All Hawaiian language documents were reviewed by Hawaiian language experts to search for relevant information to include in the report. Documents considered relevant to this analysis are included herein, and translations are provided when appropriate to the discussion. Summaries of interviews and information on other oral testimonies are also provided herein.

The Waimānalo region is rich with both pre-contact and post-contact histories. The three-part *Ka Pa'akai* was applied to the research and data gathered for this study. Based on the information gathered and the assessment of the resources conducted, the project is not anticipated to have any adverse impacts on traditions, customs, or practices.

Practitioners expressed concerns about construction, but these potential impacts can be minimized through best management practices and use of cultural monitors. Based on the information gathered and the ethnographic data, the proposed project has the potential to have a beneficial impact to traditional or customary practices in the area.

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Abbreviations and Acronyms

AIS: Archaeological Inventory Survey
BMP: Best Management Practice
CIA: Cultural Impact Assessment
EA: Enviornmental Assessment
ESP: Environmental Review Project, Office of Planning and Sustainable Development
HAR: Hawaii Administrative Rules
Honua: Honua Consulting, LLC
HRS: Hawaii Revised Statutes
ILK: Indigenous Local Knowledge
Ka Pa'akai: *Ka Pa'akai O Ka 'Āina v. Land Use Commission*, 94 Haw. 31 (2000)
LRFI: Literature Review and Field Investigation
NRHP: National Register of Historic Places
OEQC: Office of Enviornmental Quality and Control
ROI: Range of Influence
SHPD: State Historic Preservation Division
SIHP: State Inventory of Historic Places
SLH: Session Laws of Hawaii
TEK: Traditional Ecological Knowledge
TMK: Tax Map Key
USGS: U.S. Geological Survey

1.0 Project Description and Compliance

At the request of Waimānalo Health Center, Honua Consulting, LLC prepared a Cultural Impact Assessment (CIA) for the proposed new construction of the expansion facility and additional patient parking space will allow WHC to relocate and expand clinical and programmatic services from existing, outdated trailers located at 41-1347 Kalaniana'ole Highway on State of Hawai'i Department of Land and Natural Resources (DLNR) property, Tax Map Key (TMK) 1-4-1-009:279, in the ahupua'a of Waimānalo, which are part of the moku of Ko'olauloa on O'ahu.

1.1 Project Description and Proposed Action

The project area, located on Tax Map Key (TMK) 4-1-009:279, is positioned along Kalaniana'ole Highway, adjacent to St. George Church, and across from Waimānalo Elementary and Intermediate School. WHC is proposing to demolish four separate one-story buildings that have reached the end of their service life. Completion of the project will allow WHC to provide its services and programs from a modern, one-story health care facility. The proposed project includes associated improvements to site infrastructure and reconfiguration of the parking lot to improve onsite vehicular circulation and access to patient parking spaces.

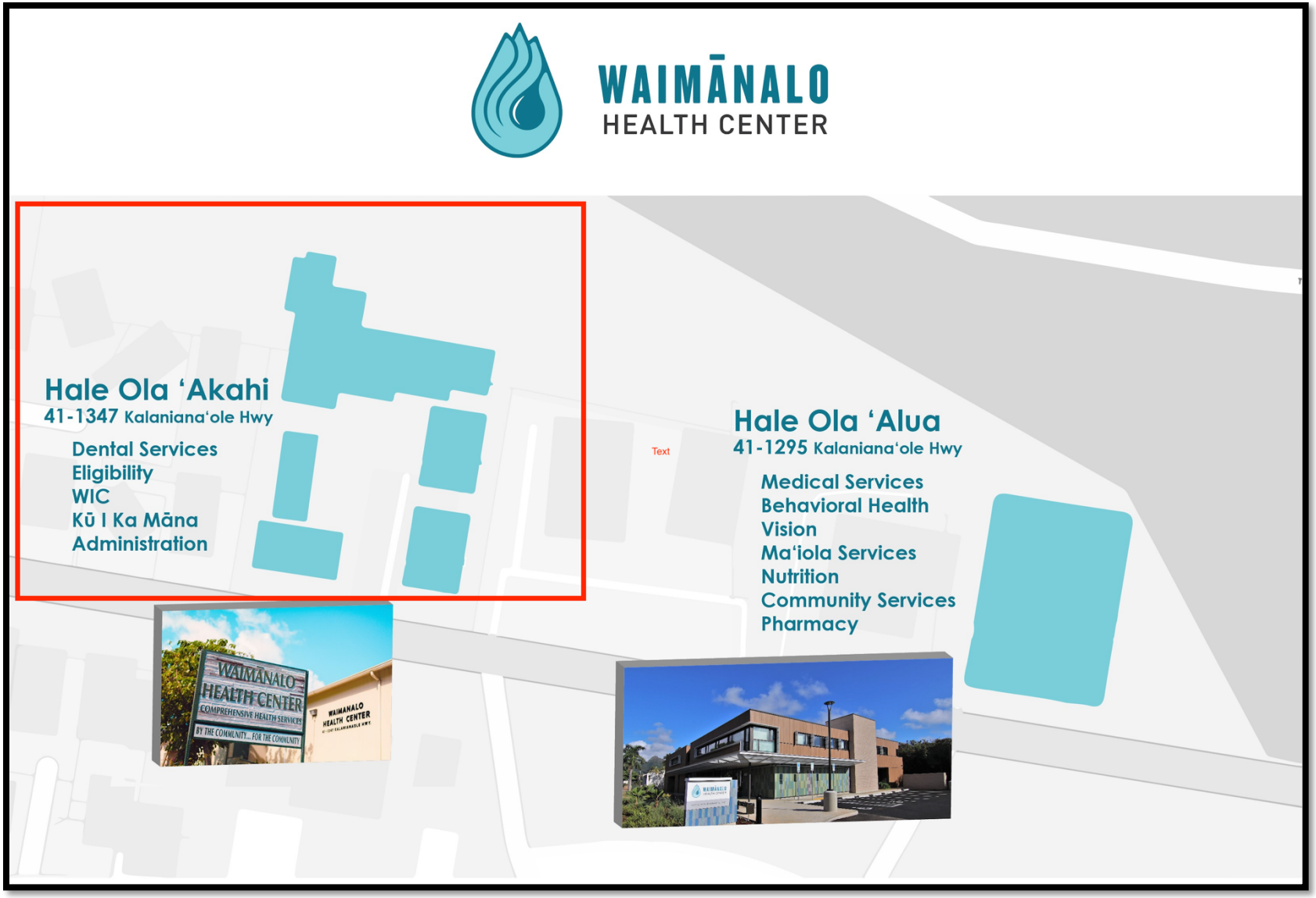

Figure 1. Conceptual Map showing there the Project will take place

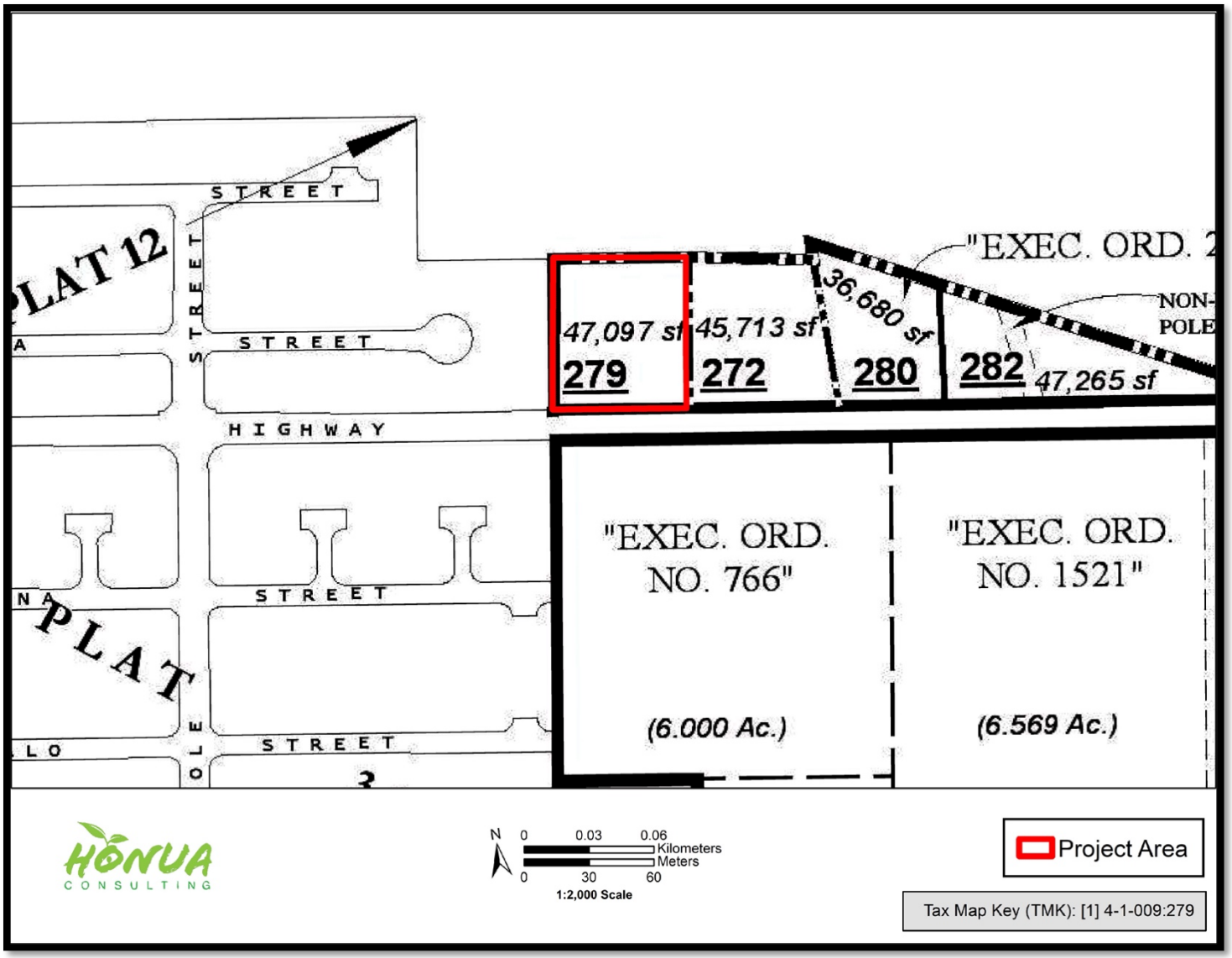

Figure 2. TMK Map of the Project Area

1.2 Background

Articles IX and XII of the State Constitution, other state laws, and the courts of the state require government agencies to protect and preserve cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups. To assist decision makers in the protection of cultural resources, Chapter 343, HRS and Hawai'i Administrative Rules (HAR) § 11-200 rules for the environmental impact assessment process require project proponents to assess proposed actions for their potential impacts to cultural properties, practices, and beliefs.

This process was clarified by the Act 50, Session Laws of Hawai'i (SLH) 2000. Act 50 recognized the importance of protecting Native Hawaiian cultural resources and required some environmental review documents include the disclosure of the effects of a proposed action on the cultural practices of the community and state, and the Native Hawaiian community in particular. Specifically, the Environmental Council suggested the CIAs should include information relating to practices and beliefs of a particular cultural or ethnic group or groups. Such information may be obtained through public scoping, community meetings, ethnographic interviews, and oral histories.

It is important to note that while similar in their areas of studies, archaeological surveys and CIAs are concerned with distinct and different foci. Archaeological studies are primarily concerned with historic properties and tangible heritage, whereas CIAs look at cultural practices and beliefs, which can be associated with a specific location, but also often intangible in nature.

The State and its agencies have an affirmative obligation to preserve and protect Native Hawaiians' customarily and traditionally exercised rights to the extent feasible.[1] State law further recognizes that the cultural landscapes provide living and valuable cultural resources where Native Hawaiians have and continue to exercise traditional and customary practices, including hunting, fishing, gathering, and religious practices. In *Ka Pa'akai*, the Hawai'i Supreme Court provided government agencies an analytical framework to ensure the protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing private development interests. This is accomplished through:

1) The identification of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area;

[1] Article XII, Section 7 of the Hawai'i State Constitution, *Ka Pa'akai O Ka 'Āina v. Land Use Commission*, 94 Haw. 31 [2000] (Ka Pa'akai), Act 50 SLH 2000.

2) The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and
3) The feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist.

The appropriate information concerning the ahupua'a of Waimānalo has been collected, focusing on areas near or adjacent to the project area. A thorough analysis of this project and potential impacts to cultural resources, historical resources, and archaeological sites is included in this assessment.

The CIA provides an overview of cultural and historic resources in the project area using thorough literature review, community and cultural practitioner consultation, and high-level, project-specific surveys. The CIA will focus on identifying areas in which disturbance should be avoided or minimized to reduce impacts to historic properties or culturally important features. The paramount goal is to prevent impacts through avoidance of sensitive areas and mitigating for impacts only if avoidance is not possible.

1.3 Geographic Extent

The geographic extent for impacts to cultural resources and historic properties includes the project area and localized surroundings. This CIA also reviews some of the resources primarily covered by the regulatory review. It primarily researches and reviews the range of biocultural resources identified through historical documents, traditional knowledge, information found in the Hawaiian language historical caché, and oral histories and knowledge collected from cultural practitioners and experts.

There is clear guidance from the Office of Environmental Quality and Control (OEQC), now known as the Environmental Review Program (ERP), within the Office of Planning and Sustainable Development (ESP), that recommends a geographic extent beyond the identified or typical boundaries of the geographic project area. The recommended area is typically the size of the traditional land area (ahupua'a) or region (moku), but this can be larger or smaller depending on what best helps to identify the resources appropriately.

The geographic extent of the CIA is based on the position that the "Project Area" is part of a cultural landscape or cultural landscapes that therefore it is most appropriate to set and study the proposed alternatives within that cultural context.

1.4 Goal of Cultural Impact Assessment

This cultural impact assessment looks to partially fulfill the requirement of taking into account the Project's potential impacts on historic and cultural resources and, at a minimum, describe:

a) any valued cultural, historic, or natural resources in the area in questions, including the extent to which traditional and customary native Hawaiian rights are exercised in the area, b) the extent to which those resources – including traditional and customary native Hawaiians rights – will be affected or impaired by the Project; and c) the feasible action, if any, to be taken to reasonably protect native Hawaiian rights if they are found to exist.

1.5 Regulatory Background

Articles IX and XII of the State Constitution, other state laws, and the courts of the state require government agencies to protect and preserve cultural beliefs, practices, and resources of Kānaka ʻŌiwi (Native Hawaiians) and other ethnic groups. To assist decision makers in the protection of cultural resources, Chapter 343, HRS and Hawaiʻi Administrative Rules (HAR) § 11-200.1 rules for the environmental impact assessment process require project proponents to assess proposed actions for their potential impacts to cultural properties, practices, and beliefs.

This process was clarified by the Act 50, Session Laws of Hawaiʻi (SLH) 2000. Act 50 recognized the importance of protecting Native Hawaiian cultural resources and required that EAs include the disclosure of the effects of a proposed action on the cultural practices of the community and state, and the Native Hawaiian community in particular. Specifically, the Environmental Council suggested the CIAs should include information relating to practices and beliefs of a particular cultural or ethnic group or groups. Such information may be obtained through public scoping, community meetings, ethnographic interviews, and oral histories.

It is important to note that while similar in their areas of studies, archaeological surveys and CIAs are concerned with distinct and different foci. Archaeological studies are primarily concerned with historic properties and tangible heritage, whereas CIAs look at cultural practices and beliefs, which can be associated with a specific location, but also often intangible in nature.

1.6 Compliance

The State and its agencies have an affirmative obligation to preserve and protect Native Hawaiians' customarily and traditionally exercised rights to the extent feasible.[2] State law further recognizes that the cultural landscapes provide living and valuable cultural resources where Native Hawaiians have and continue to exercise traditional and customary practices, including hunting, fishing, gathering, and religious practices. In *Ka Paʻakai*, the Hawaiʻi Supreme Court provided government agencies an analytical framework to ensure the

[2] Article XII, Section 7 of the Hawaiʻi State Constitution, *Ka Paʻakai O Ka ʻĀina v. Land Use Commission*, 94 Haw. 31 [2000] (Ka Paʻakai), Act 50 SLH 2000.

protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing private development interests. This is accomplished through:

4) The identification of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area;
5) The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and
6) The feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist.

While not attached to a HRS Chapter 343 action, this CIA was prepared under HRS Chapter 343 and Act 50 SLH 2000 as those are the prevailing standards and best practices for CIAs. The appropriate information concerning the ahupuaʻa of Waiʻanae has been collected, focusing on areas near or adjacent to the project area. A thorough analysis of this project and potential impacts to cultural resources, historical resources, and archaeological sites is included in this assessment.

The present analyses of archival documents, oral traditions (oli or chants, mele or songs, and/or hula or dance texts), and Hawaiian language sources including books, manuscripts, and newspaper articles, are focused on identifying recorded cultural and archaeological resources present on the landscape, including: Hawaiian and non-Hawaiian place names; landscape features (ridges, gulches, cinder cones); archaeological features (kuleana parcel walls, house platforms, shrines, heiau or places of worship, etc.); culturally significant areas (viewsheds, unmodified areas where gathering practices and/or rituals were performed); and significant biocultural resources. The information gathered through research helped to focus interview questions on specific features and elements within the project area.

Interviews with lineal and cultural descendants are instrumental in procuring information about the project area's transformation through time and changing uses. Interviews were conducted with recognized cultural experts and summaries of those interviews are included herein.

2.0 Methodology

The approach to developing the CIA is as follows:

1) Gather Best Information Available
   a) Gather historic cultural information from stories and other oral histories about the affected area to provide cultural foundation for the report;
   b) Inventory as much information as can be identified about as many known cultural, historic, and natural resources, including previous archaeological inventory surveys, CIAs, etc. that may have been completed for the possible range of areas; and
   c) Update the information with interviews with cultural or lineal descendants or other knowledgeable cultural practitioners.
2) Identify Potential Impacts to Cultural Resources
3) Develop Reasonable Mitigation Measures to Reduce Potential Impacts
   a) Involve the community and cultural experts in developing culturally appropriate mitigation measures; and
   b) Develop specific Best Management Practices (BMPs), if any are required, for conducting the project in a culturally appropriate and/or sensitive manner as to mitigation and/or reduce any impacts to cultural practices and/or resources.

While numerous studies have been conducted on this area, very few have effectively utilized Hawaiian language resources and Hawaiian knowledge. This appears to have impacted modern understanding of this location, as many of the relevant documents are native testimonies given by Kanaka Hawai'i (Hawaiians) who lived on this land.

While hundreds of place names and primary source historical accounts (from both Hawaiian and English language narratives) are cited on the following pages, it is impossible to tell the whole story of these lands in any given manuscript. A range of history, spanning the generations, has been covered. Importantly, the resources herein are a means of connecting people with the history of their communities—that they are part of that history. Knowledge of place will, in turn, promote appreciation for place and encourage acts of stewardship for the valued resources that we pass on to the future.

Background research for the literature review was conducted using materials obtained from the State Historic Preservation Division (SHPD) library in Kapolei and the Honua Consulting LLC. report library. On-line materials consulted included the Ulukau Electronic Hawaiian Database (www.ulukau.com), Papakilo Database (www.papakilodatabase.com), the State Library on-line (http://www.librarieshawaii.org/ Serials/databases.html), and Waihona 'Āina Māhele database (http://www.waihona.com). Hawaiian terms and place names were translated using the on-line Hawaiian dictionaries (Nā Puke Wehewehe 'Ōlelo Hawai'i)

(www.wehewehe.com), *Place Names of Hawai'i* (Pukui et al. 1974), and *Hawai'i Place Names* (Clark 2002). Historic maps were obtained from the State Archives, State of Hawai'i Land Survey Division website (http://ags.hawaii.gov/survey/map-search/), UH-Mānoa Maps, Aerial Photographs, and GIS (MAGIS) website (http://guides.library.manoa.hawaii.edu/magis). Maps were geo-referenced for this report using ArcGIS 10.3. GIS is not 100% precise and historic maps were created with inherent flaws; therefore, geo-referenced maps should be understood to have some built-in inaccuracy.

While conducting the research, primary references included, but were not limited to: land use records, including the Hawaiian L.C.A. records from the Māhele 'Āina (Land Division) of 1848; the Boundary Commission Testimonies and Survey records of the Kingdom and Territory of Hawai'i; and historical texts authored or compiled by: David Malo (1987); Samuel M. Kamakau (1964, 1991, 1992); records of the American Board of Commissioners of Foreign Missions (A.B.C.F.M.) (1820–1860); Charles Wilkes (1845); Alexander & Preston (1892–1894); Abraham Fornander (1916–1919); and many other native and foreign writers. The study also includes several native accounts from Hawaiian language newspapers (primarily compiled and translated from Hawaiian to English by K. Maly), and historical records authored by nineteenth century visitors, and residents of the region.

Historical and archival resources were located in the collections of the Hawai'i State Archives, Survey Division, Land Management Division, Survey Division, and Bureau of Conveyances; the Bishop Museum Library and Archives; the Hawaiian Historical Society and the Hawaiian Mission Children's Society Library; University of Hawai'i-Hilo Mo'okini Library; the National Archives and Records Administration (NARA), Maryland; the Library of Congress, Washington D.C.; the National Oceanic and Atmospheric Administration National Library, Maryland; the Smithsonian Institution Natural History and National Anthropological Archives libraries, Washington, D.C.; the Houghton Library at Harvard; the United States Geological Survey (USGS) Library, Denver; the Paniolo Preservation Society and Parker Ranch collections; private family collections; and in the collection of Kumu Pono Associates LLC. This information is generally cited in categories by chronological order of the period depicted in the narratives.

M. P. Nogelmeier (2010) discusses the adverse impacts of methodology that fails to properly research and consider Hawaiian language resources. He strongly cautions against a mono-rhetorical approach that marginalizes important native voices and evidence from consideration, specifically in the field of archaeology. For this reason, Honua Consulting consciously employs a poly-rhetorical approach, whereby all data, regardless of language, is researched and considered. To fail to access these millions of pages of information within the Hawaiian language cache could arguably be a violation of Act 50, as such an approach would fundamentally fail to gather the best information available, especially considering the

voluminous amounts of historical accounts available for native tenants in the Hawaiian language.

Hawaiian culture views natural and cultural resources as largely being one and the same: without the resources provided by nature, cultural resources could and would not be procured. From a Hawaiian perspective, all natural and cultural resources are interrelated, and all natural and cultural resources are culturally significant. Kepā Maly (2001), ethnographer and Hawaiian language scholar, points out, "In any culturally sensitive discussion on land use in Hawai'i, one must understand that Hawaiian culture evolved in close partnership with its natural environment. Thus, Hawaiian culture does not have a clear dividing line of where culture ends and nature begins" (Maly 2001:1). As a leading researcher and scholars on Hawaiian culture, Maly, along with his wife, Onaona, have conducted numerous ground-breaking studies on cultural histories throughout Hawai'i. A substantial part of the archival research utilized in this study was previously compiled and published by Kepā and Onaona Maly, who have granted their permission to use this important work and are identified properly as associated authors and researchers to this study.

This study also specifically looks to identify intangible resources. Tangible and intangible heritage are inextricably linked (Bouchenaki 2003). Intangible cultural resources, also identified as intangible cultural heritage (ICH), are critical to the perpetuation of cultures globally. International and human rights law professor Federico Lenzerini notes that, "At present, we are aware on a daily basis of the definitive loss—throughout the world—of language, knowledge, knowhow, customs, and ideas, leading to the progressive impoverishment of human society" (Lenzerini 2011:12). He goes on to warn that:

> the rich cultural variety of humanity is progressively and dangerously tending towards uniformity. In cultural terms, uniformity means not only loss of cultural heritage—conceived as the totality of perceptible manifestations of the different human groups and communities that are exteriorized and put at the others' disposal—but also standardization of the different peoples of the world and of their social and cultural identity into a few stereotyped ways of life, of thinking, and of perceiving the world. Diversity of cultures reflects diversity of peoples; this is particularly linked to ICH, because such a heritage represents the living expression of the idiosyncratic traits of the different communities. Preservation of cultural diversity, as emphasized by Article 1 of the UNESCO Universal Declaration on Cultural Diversity, 'is embodied in the uniqueness and plurality of the identities of the groups and societies making up humankind'. Being a 'source of exchange, innovation and creativity', cultural diversity is vital to humanity and is inextricably linked to the safeguarding of ICH. Mutual recognition and respect for cultural diversity—and, *a fortiori*, appropriate safeguarding of the ICH of the diverse peoples making up the world—is essential for promoting harmony in intercultural relations, through fostering better appreciation and understanding of the differences between human communities. (Lenzarini 2011:103)

Therefore, tradition and practice, as elements of Hawaiian ICH, are essential to the protection of Hawaiian rights and the perpetuation of the Hawaiian culture.

2.1 Identifying Traditional or Customary Practices

It is within this context that traditional or customary practices are studied. The concept of traditional or customary practices can often be a challenging one for people to grasp. Traditional or customary practices can be defined as follows:

Figure 3. Diagram of elements that contribute to traditional or customary practices (Honua Consulting)

The first element is knowledge. This has been referred to as traditional ecological knowledge (TEK), Indigenous local knowledge (ILK), or ethnoscience. In the context of this study, it is the information, data, knowledge, or expertise Native Hawaiians or local communities possessed or possess about an area's environment. In a traditional context, this would have included information Hawaiians possessed in order to have the skills to utilize the area's resources for a range of purposes, including, but not limited to, travel, food, worship or habitation. This element is largely intangible.

The second element are the resources themselves. These are primarily tangible resources, either archaeological resources (i.e., habitation structures, walls, etc.) or natural resources (i.e., plants, animals, etc.). These can also be places, such as a sacred or culturally important sites or wahi pana. Sometimes these wahi pana are general locations, this does not diminish their importance or value. Nonetheless, it is important to recognize that potential eligibility as a "historic site" on the National Register of Historic Places (NRHP) would require identifiable boundaries of a site.

The third element is access. The first two elements alone are not enough to allow for traditional or customary practices to take place. The practitioners must have access to the resource in order to be able to practice their traditional customs. Access does not just mean the ability to physically access a location, but it also means access to resources. For example,

if a particular plant is used for medicinal purposes, there needs to be a sufficient amount of that plant available to practitioners for use. Therefore, an action that would adversely impact the population of a particular plant with cultural properties would impact practitioners' ability to access that plant. By extension, it would adversely impact the traditional or customary practice.

Traditional or customary practices are, therefore, the combination of knowledge(s), resource(s) and access. Each of these individual elements should be researched and identified in assessing any potential practices or impacts to said practices.

2.2 Traditional Knowledge, or Ethnoscience, and the Identification of Cultural Resources

The concept of ethnoscience was first established in the 1960s and has been defined "the field of inquiry concerned with the identification of the conceptual schemata that indigenous peoples use to organize their experience of the environment" (Roth 2019). Ethnoscience includes a wide range of subfields, includes, but is not limited to, ethnoecology, ethnobotany, ethnozoology, ethnoclimatology, ethnomedicine and ethnopedology. All of these fields are important to properly identify traditional knowledge within a certain area.

Traditional Native Hawaiian practitioners were scientists and expert natural resource managers by necessity. Without modern technological conveniences to rely on, Hawaiians developed and maintained prosperous and symbiotic relationships with their natural environment for thousands of years. Their environments were their families, their homes, and their laboratories. They knew the names of every wind and every rain. The elements taught and inspired. The ability of Indigenous people to combine spirituality and science led to the formation of unique land-based methologides that spurred unsurpassed innovation. Therefore, identifying significant places requires a baseline understanding of what made places significant for Hawaiians.

Hawaiians were both settlers and explorers. In *Plants in Hawaiian Culture,* B. Krauss explains: "Exploration of the forests revealed trees, the timber of which was valuable for building houses and making canoes. The forests also yielded plants that could be used for making and dying tapa, for medicine, and for a variety of other artifacts" (Krauss 1993). Analysis of native plants and resource management practices reveals the depth to which Hawaiians excelled in their environmental science practices:

> [Hawaiians] demonstrated great ability in systematic differentiation, identification, and naming of the plants they cultivated and gathered for use. Their knowledge of the gross morphology of plants, their habits of growth, and the requirements for greatest yields is not excelled by expert agriculturists of more complicated cultures. They worked out the procedures of cultivation for every locality, for all altitudes, for different

> weather conditions and exposures, and for soils of all types. In their close observations of the plants they grew, they noted and selected mutants (spores) and natural hybrids, and so created varieties of the plants they already had. Thus over the years after their arrival in the Islands, the Hawaiians added hundreds of named varietis of taro, sweet potatoes, sugarcane, and other cultivated plants to those they had brought with them from the central Pacific (Krauss 1993).

Thus, Native Hawaiians reinforced the biodiversity that continues to exist in Hawaiʻi today through their customary traditional natural resource management practices.

The present analyses of archival documents, oral traditions (oli or chants, mele or songs, and/or hula dances and haʻi moʻolelo or storytelling performances), and Hawaiian language sources including books, manuscripts, and newspaper articles, are focused on identifying recorded cultural resources present on the landscape, including: Hawaiian and non-Hawaiian place names; landscape features (ridges, gulches, cinder cones); archaeological features (kuleana parcel walls, house platforms, shrines, heiau [places of worship], etc.); culturally significant areas (viewsheds, unmodified areas where gathering practices and/or rituals were performed); and significant biological, physiological, or natural resources. This research also looks to document the wide range of Hawaiian science that existed within the geographic extent.

2.3 Moʻolelo ʻĀina: Native Traditions of the Land

Among the most significant sources of native moʻolelo are the Hawaiian language newspapers which were printed between 1838 and 1948, and the early writings of foreign visitors and residents. Most of the accounts that were submitted to the papers were penned by native residents of areas being described and noted native historians. Over the last 30 years, Kepā Maly has reviewed and compiled an extensive index of articles published in the Hawaiian language newspapers, with particular emphasis on those narratives pertaining to lands, customs, and traditions. Many traditions naming places around Hawaiʻi are found in these early writings. Many of these accounts describe native practices, the nature of land use at specific locations, and native moʻolelo (history, narrative, story). Thus, we are given a means of understanding how people related to their environment and sustained themselves on the land.

2.4 Historic Maps

There are also numerous, informative historic maps for the region. Surveyors of the eighteenth and nineteenth centuries were skilled in traversing land areas and capturing important features and resources throughout Hawaiʻi's rich islands. Historic maps were carefully studied, and the features detailed therein where aggregated and categorized to help identify

specific places, names, features, and resources throughout the study area. From these, among other documents, new maps were created that more thoroughly capture the range of resources in the area.

2.5 Archaeological Studies

A literature and field inspection has been completed by SCS.

2.6 Ethnographic Methodology

Information from lineal and cultural descendants is instrumental in procuring information about the project area's transformation over time and its changing uses. The present analyses of archival documents, oral traditions (including oli or chants, mele or songs), and/or hula dance), and Hawaiian language sources including books, manuscripts, and newspaper articles, are focused on identifying recorded cultural and archaeological resources present on the landscape, including: Hawaiian and non-Hawaiian place names; landscape features (ridges, gulches, cinder cones); archaeological features (kuleana parcel walls, house platforms, shrines, heiau or places of worship, etc.); culturally significant areas (viewsheds, unmodified areas where gathering practices and/or rituals were performed); and significant biocultural resources. The information gathered through research helped to focus interview questions on specific features and elements within the project area.

Information from lineal and cultural descendants are instrumental in procuring information about the project area's transformation through time and changing uses. A notice was placed in the *Ka Wai Ola*, published by the Office of Hawaiian Affairs (Figure 4).

Cultural Impact Assessment Notice: Waimānalo, Oʻahu

Honua Consulting, LLC, is conducting a Cultural Impact Assessment (CIA) for the Waimānalo Health Center (WHC), in Waimānalo, Oʻahu Island, TMK [1] 4-1-009:279. WHC is proposing to construct a new healthcare facility. The CIA team is seeking consultation with practitioners, Native Hawaiian Organizations, stakeholders, and other individuals. Specifically, consultation is sought on a) identification of an appropriate geographic extent of study, b) historic or existing cultural resources that may be impacted by the proposed project, c) historic or existing traditional practices and/or beliefs that may be impacted by the proposed project, and d) identification of individuals or organizations that should be sought out for consultation on the CIA. Individuals or organizations interested in participating can contact the CIA team at community@honuaconsulting.com or (808) 392-1617.

Figure 4. Copy of the public notice placed in the *Ka Wai Ola* in April 2022

3. Historic Background

The purpose of this section is to characterize the Hawaiian cultural landscape within which the project area is located; this includes a description of Waimānalo's relevant and representative inoa ʻāina (place names), moʻolelo (oral-historical accounts), wahi pana (legendary places), and other natural and cultural resources. A general (ahupuaʻa-wide) summary is followed by a project-area specific discussion.

3.1 Traditional Period

As depicted in Figure 5, the size and configuration of the ahupuaʻa of Waimānalo has changed from its traditional Hawaiian (or Oʻahuan) boundaries—which once included Maunalua Ahupuaʻa as an ʻili of Waimānalo (and, therefore, part of the moku of Koʻolaupoko), to its current extent. Writing in 1935, the University of Hawaiʻi demographer, John Wesley Coulter, described these changes:

> The land of Maunalua is an ili of the ahupuaa of Waimanalo and originally belonged to Koolaupoko district. Maps made as late as 1902 placed it in that district. It is situated on the south side of the Koolau range and should really be a part of Honolulu district. The many previous acts referring to the Oahu districts never did make this sufficiently clear, so in the . . . [1932 amendment to the] Revised Laws of Hawaii 1925 . . . the description of Honolulu and Koolaupoko districts clarified this point. (Sterling and Summers 1978:257)

Figure 6 is a 1929 map showing the (now outdated) Koʻolaupoko District boundary inclusive of Maunalua.

The current ahupuaʻa boundary of Waimānalo follows the ridgeline of the Koʻolau Range down to Makapuʻu (literally, "hill beginning" [with "maka" taking on the meaning of "source" or "origins"] or "bulging eye" [from a reference in the famous saga of Pele and Hiʻiakaikapoliopele]).[3] This current configuration—following the Koʻolau ridgeline—is more consistent with the physiographic characteristics of southeastern Oʻahu. In a real sense, Waimānalo's current configuration marks the start (or end) of the windward coast.

Waimānalo (literally, "potable water"), named after its single permanent stream, is associated with a number of Hawaiian accounts of pūnāwai (fresh-water springs), fishing villages and small settlements along the coast, a famous kahuna lapaʻau (traditional healer) named Kapoi, the locally-famous sea pond, Pāhonu, at the coastline named for honu (green sea turtles), the Pele and Hiʻiaka saga, and more (see below).

Waimānalo is blessed with other intangible resources that are highly-valued by many in the community, such as its unparalleled natural beauty and stunning physiography. Figure 7, an

[3] Unless stated otherwise, all place name translations/interpretations are from Pukui et al. (1974).

aerial image of Waimānalo from the south, illustrates its dramatic setting, nestled between the two-thousand foot pali (cliffs) of the Koʻolau ridgeline and the white sands of Waimānalo Bay. **Error! Reference source not found.** is a detail photograph of the prominent and unique face of the Koʻolau as seen from the center of the ahupuaʻa.

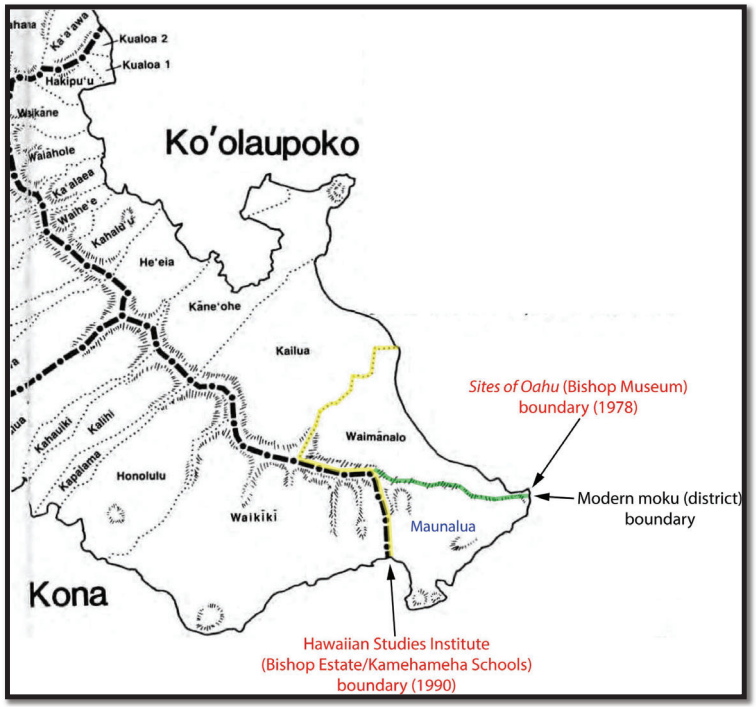

Figure 5. Variation in the southern boundary of Waimānalo Ahupuaʻa (and the districts of Koʻolaupoko and Kona [Honolulu]); the green line, as depicted in the Bishop Museum's *Sites of Oahu* (Sterling and Summers 1978), has been official for nearly the last century; the yellow line, which considers Maunalua as an ʻili of Waimānalo, is an older configuration (see, e.g., Snakenberg 1990, which is the source of this base map)

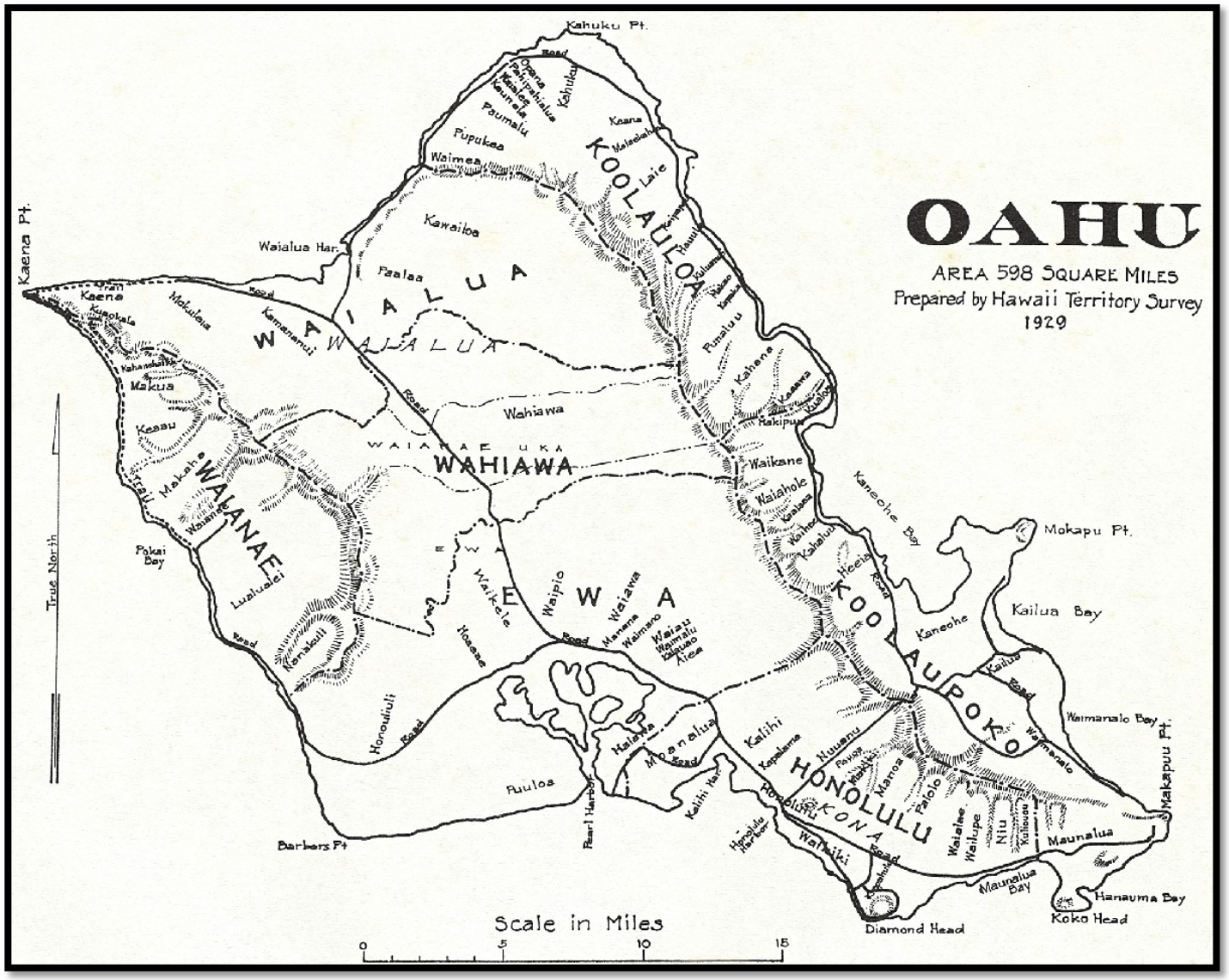

Figure 6. Map of O‘ahu Island from 1929 showing the Ko‘olaupoko District inclusive of Maunalua (source: frontispiece Sterling and Summers 1978)

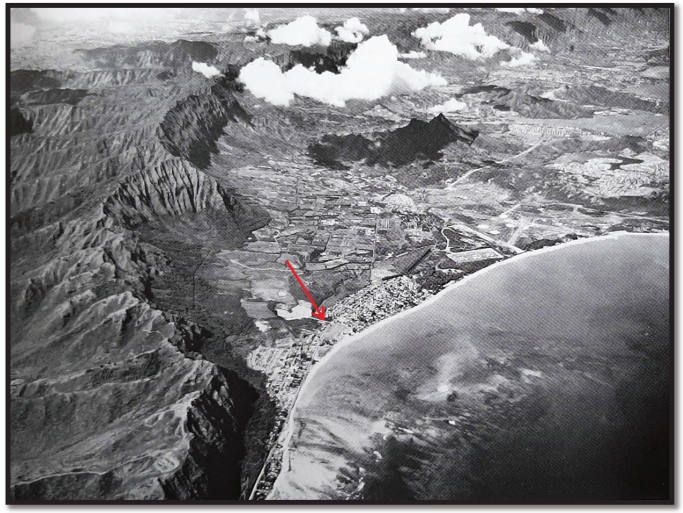

Figure 7. Undated aerial photograph of Waimānalo, bounded to the north by Kailua Ahupuaʻa (darkened peaks of Olomana along southern boundary of Kailua are in upper center of image); approximate location of current project area indicated by red arrow (base image source: Macdonald et al. 1983:437)

Although Waimānalo's landscape had been fundamentally altered by the time of E. S. Craighill Handy's ground-breaking study of traditional Hawaiian subsistence methods from the 1930s (commercial sugar cane agriculture since the late 1880s had taken its toll), Handy's observations (1940; Handy and Handy 1972) continue to provide valuable insights on traditional Hawaiian use of the land for settlement and subsistence purposes. And, despite the fact that Waimānalo has long been overshadowed by Kailua Ahupuaʻa relative to the latter's higher level of overall productivity and food-production, Handy had far more to say about Waimānalo than Kailua. Among the highlights of his presentation are the following selected passages from Handy and Handy (1972):

> . . . much of what was until recent years sugar-cane land had previously been planted to taro. There were evidences in 1935 of old *loʻi* much further inland, in a semicircle at the back of the broad valley [note, here, he is likely referring to an area about a mile and a half or so northwest of the current project area]. A *kamaʻaina* of the place at that time named nine such *loʻi* sections whose water came from springs. (ibid.:457)

> [attributing this to Mary Kawena Pukui's research in 1930 Hawaiian language newspaper *Hoku o Hawaii*] There are two peculiar springs at Waimanalo . . . The one called Kupunakane [Grandfather] is away up in the mountains. The spring called Kupunawahine [Grandmother] is a spring way down on the level land. The strange, strange thing about these two ponds was that on calm, sunny days they begin to cry out to each other. Their voices are soft and sounded very much like a woman mourning her husband. On days that were overcast with clouds in the sky, then the water of the mountain spring changed. The water of the mountain spring became warm and when you drank the water in the lowland spring it was cool, according to the legend.

Figure 8 depicts the primary, traditional Hawaiian settlement and loʻi kalo (irrigated taro) area in the northwest portion of the ahupuaʻa; this main subsistence area—centered on Waimānalo Stream and its floodplain.

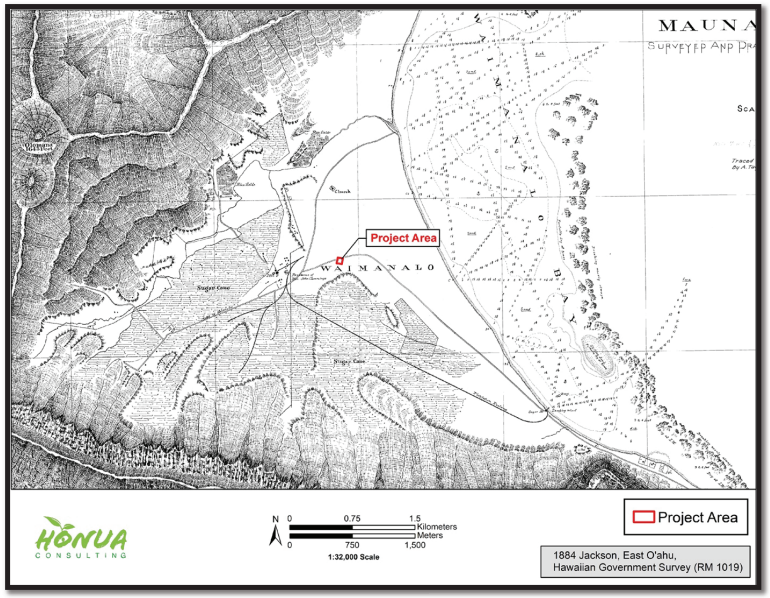

Figure 8. Primary area of traditional Hawaiian settlement and loʻi kalo (irrigated taro cultivation), centered on Waimānalo Stream, Project Area shown .

Waimānalo's several-miles-long bay, from Wailea (literally, "water of Lea," a goddess of canoe makers) Point bordering Kailua Ahupuaʻa to Makapuʻu Point (at its southern boundary with Maunalua Ahupuaʻa), was once a favored canoe-landing location for Hawaiians.

Oral-historical accounts including references to Waimānalo include the famous saga of the Hawaiian volcano goddess, Pele, and one of her sisters, Hiʻiaka (or Hiʻiaka-i-ka-poli-o-pele), whose inter-island travels resulted in commentary about the natural and cultural resources of many places. Hiʻiaka's epic narrative mentions landing at Makapuʻu, trading fish for vegetable foods with the people of Waimānalo, an old village known as Kapua, or according to Pukui et al. (1974:89), Kapuʻa ("the whistle"), and a stream known as Muliwaiʻōlena ("turmeric river" or "yellow river") (e.g., Emerson 1915:89; Fornander 1919:Vol. VI:343; Sterling and Summers 1978:248–249). According to *Sites of Oahu* (Sterling and Summers 1978:map following p. 256), this village (Kapuʻa) and stream mouth (Muliwaiʻōlena) were directly makai (more or less due northeast) of the current project area, just inland of the coast. Just inland of this village and stream mouth was another wahi pana known as Puʻu Molokaʻi, a place where people from that island settled and eventually became integrated into the greater Waimānalo community.

Some traditional accounts name the coastal area of central Waimānalo as ʻĀpuakea (ibid.:245), although Pukui et al. (1974:13) consider this place name to represent a land division in Kāneʻohe "probably named for a local rain . . . [literally] white fish basket."

Another famous place in Waimānalo—that can still be visited and experienced today—is Pāhonu. This fishpond-like structure along the shoreline of the southern Waimānalo coast was said to have been built for a chief who enjoyed the taste of honu (green sea turtle) meat (ibid.:249).

3.2 Historic Period

This section describes general land-use patterns and change in Waimānalo in the historic period, that is, following the disintegration of the traditional kapu system (circa 1820); some comments on how the project area, in particular, was affected by these changes; and historic maps and aerials that illustrate some of these temporal changes.

In the proto-historic period between the end of "pre-Contact" times and early historic times, Waimānalo was known as a famous canoe landing and departure place. For example, both Kahekili (the Maui ruler who conquered Oʻahu in the early 1780s) and Kamehameha the Great (in 1795) landed portions of their war fleet in Waimānalo.

From as early as the time of Kamehameha, Waimānalo Ahupuaʻa was considered Crown lands. Tulchin and McDermott (2010:13), citing public records from 1929, summarize this as follows:

> After Kamehameha's conquest of Oʻahu and his division of the island among his chiefs, Waimānalo was apparently retained as Kamehameha's personal property. This seems to be the case as, in 1845, when Kamehameha III,

> Kauikeaouli, who had "inherited" the land as a son of Kamehameha I, claimed the ahupuaʻa of Waimānalo "to be the private lands of his Majesty Kamehameha III, to have and to hold to himself, his heirs and successors, forever; and said lands shall be regulated and disposed of according to his Royal will and pleasure, subject only to the rights of tenants."

The middle nineteenth century legal and administrative process known as the Māhele resulted in the Land Commission Award (LCA 7713:ʻāpana 30, Royal Patent 4475) of the entire ahupuaʻa of Waimānalo to the Aliʻi Nui Victoria Kamāmalu, with the exception of commoners claims. According to Tulchin and McDermott (2010:13–14):

> The ahupuaʻa of Waimānalo was awarded to Victoria Kamāmalu, subject to the *kuleana* claims of the commoners. She received the third largest share of lands among the *aliʻi nui* (high chiefs) of the Kingdom of Hawaiʻi, including 47 *ahupuaʻa*-sized parcels in addition to Waimānalo. Approximately 113 *kuleana* land claims were awarded in Waimānalo. Nearly all of these Land Commission Awards (LCA) were located along Waimānalo Stream, or its upper tributaries, in the northwestern portion of the *ahupuaʻa* . . . While the Hawaiian population of Waimānalo was likely much larger and more dispersed in pre-contact times, it nevertheless appears that the traditional Hawaiian population of Waimānalo was always clustered along Waimānalo Stream and its upper tributaries, focused on wetland taro and sweet potato cultivation. Additional *kuleana* LCAs, primarily consisting of house lots, were scattered along the coastal areas of central and southeastern . . . No *kuleana* LCAs were located in the vicinity of the current project area.

The two most consequential macro-economic changes in greater Waimānalo that altered land use in the historic period were first ranching, starting around the time of the Māhele, and then commercial sugar cane.

Ranching in the ahupuaʻa was started by an Englishman, Thomas Cummins, who leased nearly the entire ahupuaʻa from Kamehameha III in 1850 (for 50 years). Cummins used this lease to establish a large cattle and horse ranch. Cummins was responsible for building a landing (wharf) at Waimānalo Bay. Many royals and other foreign- and native-born elites were entertained by Cummins in the latter half of the 1800s.

Chinese rice farmers by the 1870s were actively working some of the Waimānalo stream floodplain areas. As happened in many places on Oʻahu, most of these small rice-growing parcels were eventually converted to commercial sugar cane.

By around 1880, the Cummins family created the Waimānalo Sugar Co., building a sugar mill near the center of the old town, and a railway down to the landing (wharf). Tulchin and McDermott (2010:16–17) summarize this impactful period in Waimānalo's history:

John A. Cummins saw the potential of sugar production at Waimānalo. He organized the Waimanalo Sugar Company and began construction of a sugar mill in 1880. In 1890, J. A. Cummins renegotiated his father's original lease on the Waimānalo lands for an additional 30 years, and sublet the lands to the Waimanalo Sugar Company. The Waimanalo Sugar Company continued to buy sugar from the Chinese farmers until circa 1900, when the plantation began to do most of its own cultivation.

The Waimanalo Sugar Company continued to grow, with increasing lands being put under cultivation. As the plantation grew, former ranch lands were converted to cane fields. New irrigation ditches and railroad lines were constructed, and improvements were made to the mill and Waimanalo Landing.

In 1885, W.G. Irwin & Company (which later merged with C. Brewer & Company) became agents for the Waimanalo Sugar Company, with John Cummins remaining manager. John Cummins died in 1913 and his estate sold the remaining fee simple lands and the unexpired lease of Waimānalo lands to the Waimanalo Sugar Company.

Water was a continuous problem for most sugar companies, including the Waimanalo Sugar Company. Irrigation for the Waimānalo cane lands was developed from three sources: springs and water tunnels in neighboring Maunawili Valley; Kawainui Swamp in Kailua; and a swampy area near the mouth of Waimānalo Stream, known as the Waimānalo Lagoon . . . Water from these sources was transported to the Waimānalo cane lands via the Kailua Ditch, Maunawili Ditch, and the Pump Ditch, respectively.

The Waimanalo Sugar Company continued operations into the 1940s. However, facing rising operational costs and diminishing returns, the Waimanalo Sugar Company ceased operations in 1947.

3.2.2 Historic Maps and Aerial Images of the Project Area

This section discussed the historic maps and aeriel images of the Project Area as a means of demonstrating both the historic landscape and the changes to this region over time.

Figure 9, a portion of 1881 map of Oʻahu, shows the entire ahupuaʻa as Crown land consisting of approximately 8,000 acres. As described above, dozens of hoa ʻāina (or kuleana) parcels, or LCAs, were awarded in the northwestern portion of the ahupuaʻa, near its permanent streams and most extensive floodplain. These kuleana parcels are not depicted on this map, but the general area is illustrated as a network of branching streams and floodplain northwest of the current project area. Also shown on this map is the name J. Cummings, son of Thomas Cummins (the original leasee of most of Waimānalo starting around 1850 for ranching), who in the later 1800s helped convert these lands to commercial sugar cane.

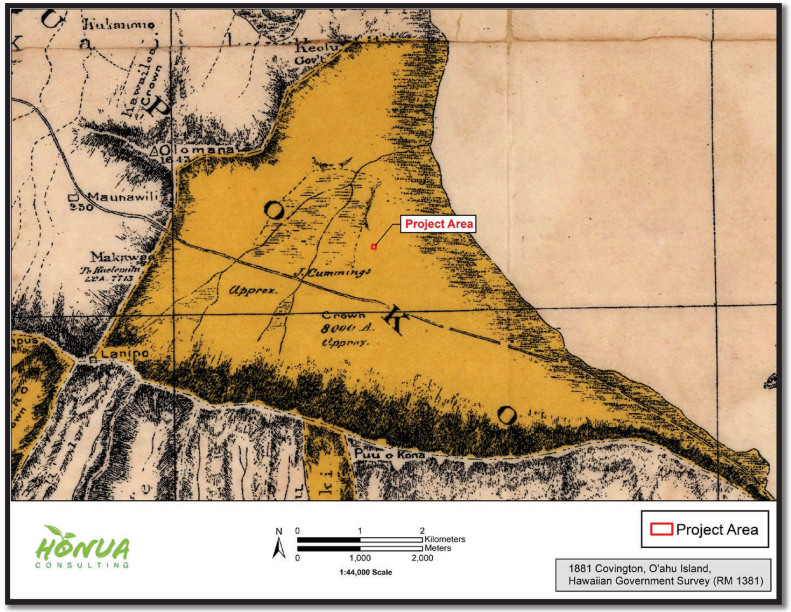

Figure 9. Portion of 1881 map of Oʻahu (Registered Map 1381) with project area location

Figure 10, a portion of 1884 coastal survey of southeastern Oʻahu, depicts extensive sugar-cane infrastructure throughout much of the ahupuaʻa, including a railway along the general right-of-way for today's Hīhīmanu Street leading down to landing (wharf) that was once located just south of today's "beach lots." The lateral extent of sugar-cane fields, as depicted on this 1884 map, extend partially into the northwestern portion of the current project area. A number of structures, such as the mill and residence of John Cummings, are depicted near the center of town. Finally, two small sections of "rice fields" are depicted along the north banks of the main stream, north of the center of town.

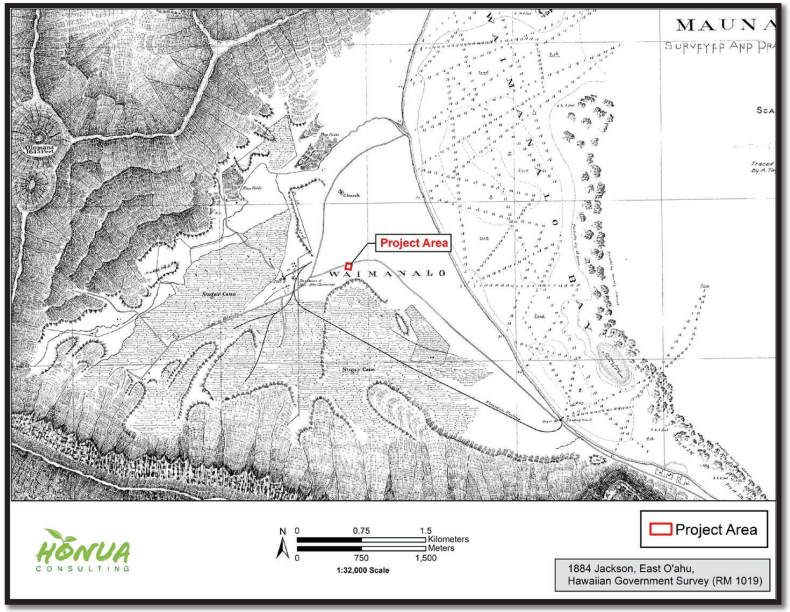

Figure 10. Portion of 1884 map of southeastern coast of O'ahu (Registered Map 1019) with project area location

Figure 11, a 1906 land-use map, show the project area on the margins of the prime sugar-cane lands of the Waimanalo Sugar Co. The project area is still depicted as being in Crown land (i.e., "Public Lands" on the map). An old road connecting Waimānalo with Maunawili—traversing the mauka (or inland) slopes of Olomana—is also shown.

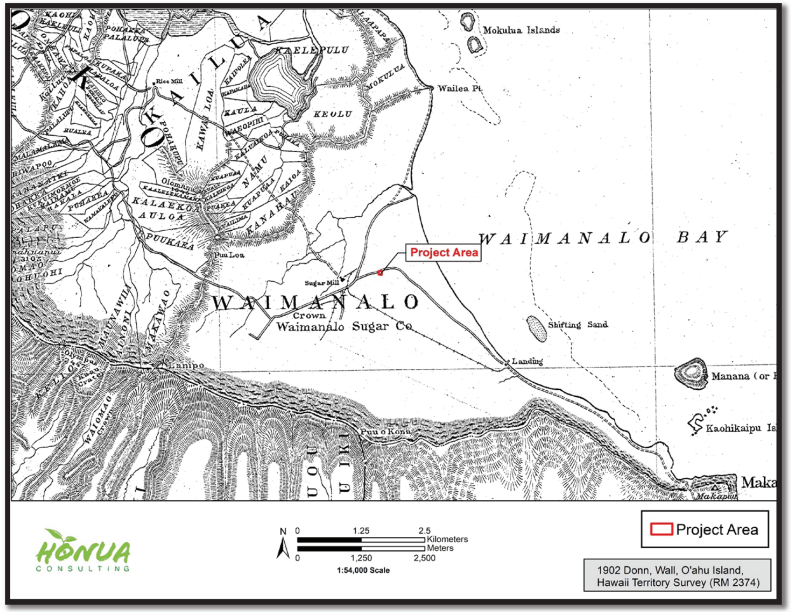

Figure 11. Portion of 1906 map of O'ahu (Registered Map 2374) with project area location

Figure 12, a 1952 USGS map, shows the Project Area within the area known as Waimānalo Village. The following figure, Figure 13, shows an 1952 aerial image of the Project Area, again showing the surrounding Waimānalo Village. Figure 14 is a 1956 Plat Map showing the Project Areas. Figure 15 is a 1963 aeriel image which Figure 16 is a 1969 USGS map showing the Project Area.

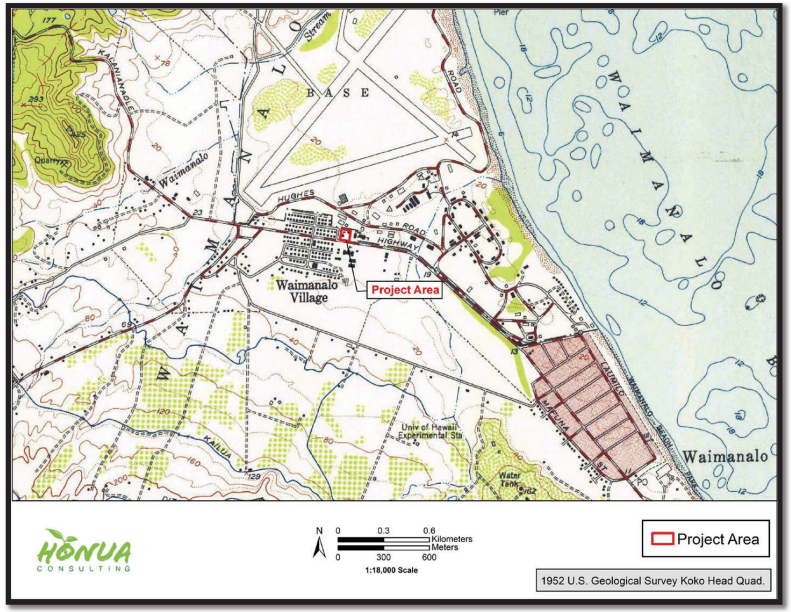

Figure 12. Portion of 1952 USGS topographic map (Koko Head quadrangle) with Project Area location.

Figure 13. Portion of 1952 aerial image with Project Area location.

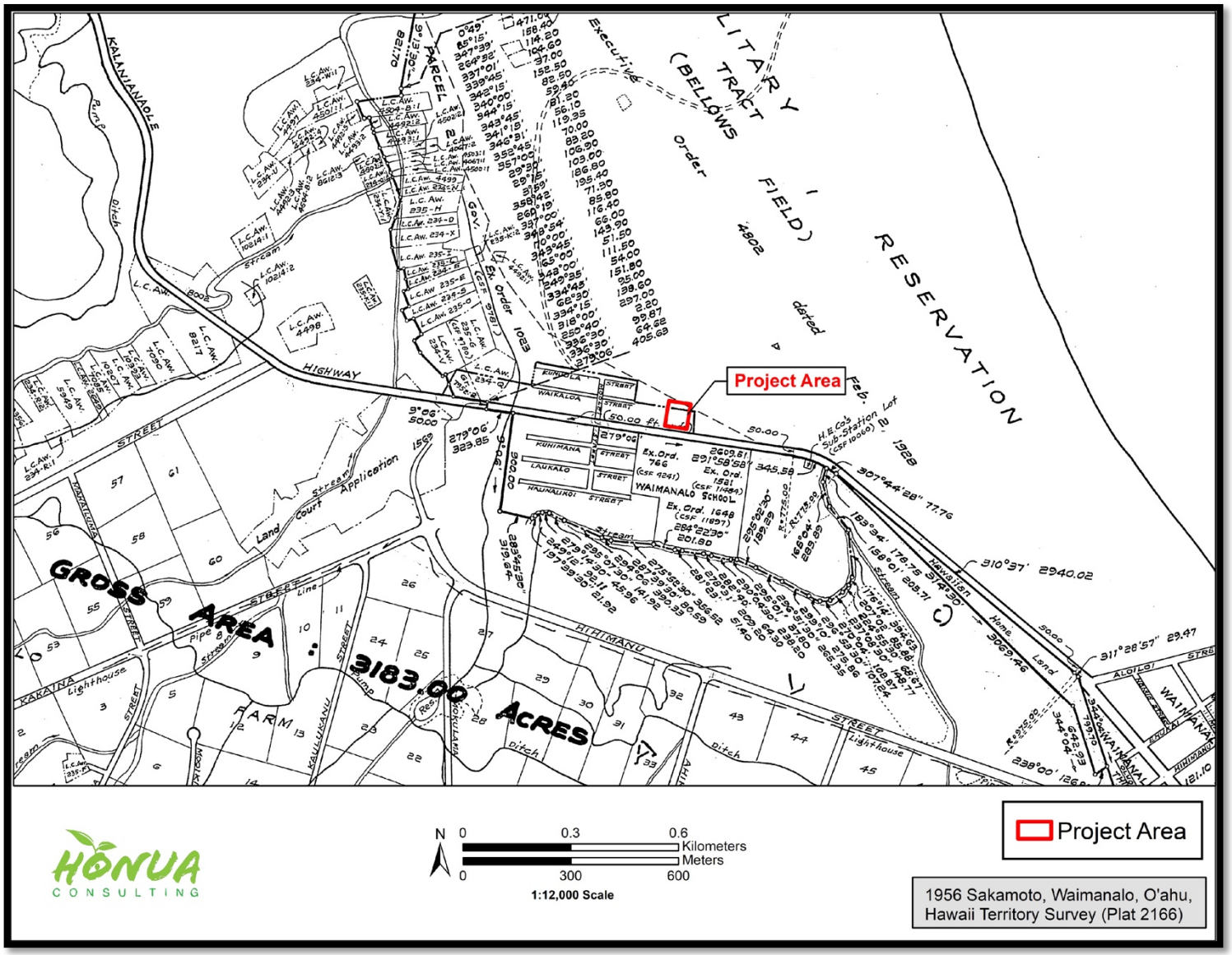

Figure 14. Portion of 1956 map of Waimānalo (Hawaii Territory Survey Plat 2166) with Project Area location.

Figure 15. Portion of 1963 aerial image with Project Area location.

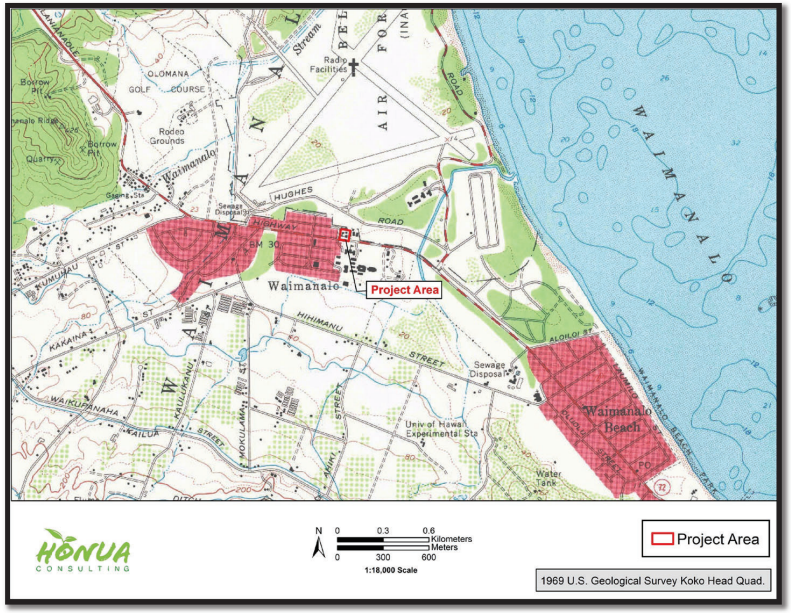

Figure 16. Portion of 1969 USGS topographic map (Koko Head quadrangle) with Project Area location.

Figure 17. Portion of 1968 aerial image with Project Area location.

4.0 Cultural Resources

This section characterizes archaeological studies and results in and around the project area environs, in order to identify resources that may be of significance to the community. The first subsection provides an overview of studies and results within about one-half mile of the current project area. This is followed by a project-area specific summary. The cultural resources in this section focus primarily on tangible resources and the built environment.

4.1 Cultural and Historic Sites

From an archaeological perspective, Waimānalo is perhaps best known for evidence uncovered in subsurface contexts at Bellows Air Force Station (BAFS), collected since at least the early 1970s, of very early Hawaiian settlement (the exact dates of which have been under review and debate for some time) and extensive cultural deposits with Hawaiian artifacts and features. For example, State Inventory of Historic Places (SIHP) # 50-80-15-4853 is a 42.5-ha (105.0-acre) discontinuous, stratified, subsurface cultural layer containing abundant traditional Hawaiian artifacts (e.g., adzes, fishhooks, ʻulu maika, hammerstones, coral abraders, and basalt flakes) and features (e.g., fire features, post molds, midden and artifact concentrations), as well as one human burial. A subsurface feature from this site (either an earth oven or fire pit) yielded the earliest radiocarbon date in all of the Hawaiian Islands, A.D. 380 660 (Streck and Watanabe 1988; Spriggs and Anderson 1993), although this specific date has been questioned by some archaeologists. Regardless, it is clear that SIHP # 4853 is probably one of the oldest cultural deposits in the islands. Numerous other burials have also been documented in BAFS.

SCS is conducting an archaeological inventory survey for the Project. All information on historic sites is primarily discussed in that documentation.

4.2 Natural Resources with Cultural Significance

Hawaiians, like most indigenous and local communities, ascribe great cultural value to the natural resources in the environment around them.

4.2.1 Wind

Winds, like rains, can be unique and distinctive to an individual location. The most famed of Hawaiian moʻolelo about winds is by Moses Kuaea Nakuina, *Moolelo Hawaii o Pakaa a me Ku-a-Pakaa, na Kahu Iwikuamoo o Keawenuiaumi, ke Alii o Hawaii, a o na Moopuna hoi a Laamaomao* (The Hawaiian Story of Pakaʻa and Kuapakaʻa, the Personal Attendants of Keawenuiaʻumi, the Chief of Hawaiʻi, and the Descendants of Laʻamaomao), published in Hawaiian in 1901. This moʻolelo was later translated into English as *The Wind Gourd of Laʻamaomao* by Sarah Nākoa and Esther T. Mookini (1992). Thus, this important moʻolelo has remained in print for over a century, and is an important cultural source text within the discourse on Hawaiian history and natural resource management. Many have written about

the gourd's mythical properties, which is believed to contain all the winds of Hawai'i. More than myth, the gourd itself exists in physical form and was last owned by King David Kalākaua. Today, it is held in the collection of the Bishop Museum (Error! Reference source not found.).

According to this mo'olelo, the descendants of La'amaomao, the wind god, used the wind gourd, Ka Ipu Makani o La'amaomao, to control the winds and cause the demise of their enemies. Pāka'a and his son Kūapāka'a, La'amaomao's descendants, control the winds by chanting the wind name, which recalls that particular wind from the gourd. Each wind name is associated with a specific ahupua'a or 'āina. Pāka'a passed on his knowledge of the wind names and the gourd to Kūapāka'a, who called on all of the winds to destroy the canoe fleet of Pāka'a's enemies in the Kaiwi Channel separating O'ahu and Moloka'i.

4.2.1.1 Limu-li-pu'upu'u

The mo'olelo *The Wind Gourd of La'amaomao* documents the wind names of Ko'olaupoko. There are two names from Waimānalo, Limu-li-pu'upu'u from Waimānalo and 'Alopali from Pāhonu. This section of the mo'olelo reads:

Holopali is of Ka'a'awa and Kualoa,
Kiliua is of Waikāne,
Mololani is of Kua'a'ohe,
Ulumano is of Kāne'ohe,
The wind is for Kaholoakeahole,
Puahiohio is the upland wind of Nu'uanu,
Malanai is of Kailua,
Limu-li-pu'upu'u comes ashore at Waimānalo,
'Alopali is of Pāhonu,
At Makapu'u the winds turn,
The Kona winds turn, the Ko'olau winds turn

LImulipu'upu'u is defined in the Parker revision of the Andrews dictionary (1922) as an ebible seaweed. This seaweed is also referred to as "līpu'upu'u."

4.2.2 Rain

In *Hānau Ka Ua: Hawaiian Rain Names* (2015), C.L. Akana and K. Gonzalez explain the significance of the wind and rain in Native Hawaiian culture:

> In the mind…of our Hawaiian kūpuna [ancestors], every being and everything in the universe was born. Our kūpuna respected nature because we, as kānaka, are related to all that surrounds us—to plants and creatures, to rocks and sea, to sky and earth, and to natural phenomena, including rain and wind. This worldview is evident in a birth chant for Queen Emma, "Hānau ke ali'i, hānau ka ua me ka makani" (The chiefess was born, the rain and wind, too, were born). Our kūpuna had an intimate relationship with the elements. They were keen observers of their environment, with all of its life-giving and life-taking forces. They had a nuanced understanding of the rains of their home. They knew that one place could have several different rains, and that each rain was distinguishable from another. They knew when a particular rain would fall, its color, duration, intensity, the path it would take, the sound it made on the trees, the scent it carried, and the effect it had on people. (Akana and Gonzalez 2015:xv)

To Native Hawaiians, no two rains are ever the same. Rain can be distinguished based on its intensity, the way it falls, and its duration, among other things. This section contains the results of research into rains associated with Waimānalo. The only rain identified to be associated with Waimānalo is the Nāulu Rain, which is the name of a sea breeze, commonly associated with coastal areas throughout the islands. It is likely that there were additional names for rains in Waimānalo, but some of this knowledge may have been lost over time.

4.2.3 Water

Fresh water (wai) is of tremendous significance to Native Hawaiians. It is closely associated with many Hawaiian gods. According to traditional accounts, Kāne and Kanaloa were the "water finders:" "Ka-ne and Kanaloa were the water-finders, opening springs and pools over all the islands, each pool known now as Ka-Wai-a-ke-Akua (The water provided by a god)" (Westervelt 1915:38). Kāne is widely known to be closely associated with all forms of water, as outlined in the mele "He Mele No Kane."

There was no element more important or precious than water. There was no god more powerful than Kāne. Pua Kanahele recounts the oli "'O Kāne, 'o wai ia ali'i o Hawai'i?" and notes of the oli: "The chant begins with Kāne and focuses on this deity as the connective force of all the po'e akua, or god family. All the entities mentioned in each paukū, or verse, are a manifestation of Kāne" (Kanahele 2011:24). The association between water and Kāne is logical considering certain interpretations of Hawaiian mythology identify Kāne as the most powerful of all the Hawaiian gods.

Further investigation into the relationship between Kāne and Pele would be appropriate and helpful. Some interpretations identify Kāne as Pele's father (Westervelt 1915). A full analysis of the different perspectives on Pele and Kāne would be helpful to refining an approach in developing community education programs for geothermal energy and culture. A brief analysis is provided below.

He Mele No Kāne

E ui aku ana au iā 'oe,	One question I ask of you:
Aia i hea ka Wai a Kāne?	Where flows the water of Kane?
Aia i lalo, i ka honua, i ka Wai hū,	Deep in the ground, in the gushing spring,
I ka wai kau a Kāne me Kanaloa-	In the ducts of Kane and Kanaloa,

He waipuna, he wai e inu,	A well spring of water, to quaff,
He wai e mana, he wai e ola,	A water of magic power- The water of life!
E ola no, ‘ea!	Life! O give us this life!

This mele and other moʻolelo are clear: Kāne is water. It is deeply valued among the Hawaiian people. The only exceptions may be mist, known to be associated with Lilinoe, and snow, associated with Poliʻahu. There is an extensive body of traditional knowledge about the expeditions of Kāne and Kanaloa during which Kāne drove his ʻōʻō (digging stick) into the earth in search of water.

4.2.4 Biological Resources

No biological assessment was provided for consideration as part of this CIA.

4.3 Intangible Cultural Resources

It is important to note that Honua Consulting’s unique methodology divides cultural resources into two categories: biocultural resources and built environment resources. We define biocultural resources as elements that exist naturally in Hawaiʻi without human contact. These resources and their significance can be shown, proven, and observed through oral histories and literature. We define built environment resources as elements that exist through human interaction with biocultural resources whose existence and history can be defined, examined, and proven through anthropological and archaeological observation. Utilizing this methodology is critical in the preparation of a CIA as many resources, such as those related to akua, do not necessarily result in material evidence, but nonetheless are significant to members of the Native Hawaiian community.

Hawaiian culture views natural and cultural resources as being one and the same: without the resources provided by nature, cultural resources could and would not be procured. From a Hawaiian perspective, all natural and cultural resources are interrelated, and all natural and cultural resources are culturally significant. Kepā Maly, ethnographer and Hawaiian language scholar, points out, “In any culturally sensitive discussion on land use in Hawaii, one must understand that Hawaiian culture evolved in close partnership with its natural environment. Thus, Hawaiian culture does not have a clear dividing line of where culture ends and nature begins” (Maly 2001:1).

4.3.1 ʻŌlelo Noʻeau

ʻŌlelo noʻeau are another source of cultural information about the area. ʻŌlelo noʻeau literally means “wise saying,” and they encompass a wide variety of literary techniques and multiple layers of meaning common in the Hawaiian language. Considered to be the highest form of cultural expression in old Hawaiʻi, ʻōlelo noʻeau bring us closer to understanding the everyday

thoughts, customs, and lives of those that created them. There are no identified ʻōlelo nōʻeau for the immediate project area.

4.3.2 Mele (Songs)

There are numerous mele composed for Waiʻanae in more contemporary times, some of which are included below.

The *Buke Mele Lahui* (Hawaiian National Songbook), published in 1895, is “the largest number of political and patriotic Hawaiian songs ever printed in one place,” featuring mele that “echo the steadfast resilience of Hawaiians of that time as they weathered the political turbulence of the 1880s and 1890s that completely altered their world” through the overthrow and establishment of a foreign-led provisional goverment and subsequent annexation to the U.S. (Nogelmeier and Stillman 2003:xii).

4.3.2.1 Hanohano No ʻO Waimanalo

Na (by): Kahoʻokeleholu Hannahs
Waipuna “Nāpili” 2014 Poki Records

This mele is a mele pana or a song written about a place. Waimanalo is a beautiful town on the southeastern shores of Oʻahu, and the composer wrote this song to honor the kanaka who live there and their loyalty to their home town. Within the Hawaiian community, Waimanalo is often referred to “Godʻs country” thus in the last verse a portion translates to “A land from God.”

Hanohano nō ʻo Waimānalo,	*Magnificent indeed, is Waimānalo*
Ka ʻāina hoʻopulapula ē	*The land of the homestead*
E ola, e nā pua o Waimānalo	*Live, O flowers of Waimānalo*
He ʻāina kaulana ē	*A famous land*
E ʻike aku i ka nani	*Behold the beauty*
O ka moku ʻo Mānana ē	*Of Mānana island*
A puni i ke kai hānupanupa	*Surrounded by the surging water*
Me ka nalu hālaʻi ē	*With the calm waves*
E kū haʻaheo, e nā kānaka	*Stand proudly, fellow citizens*
Mai ka ʻāina o Kalanianaʻole	*From the land of Kalaniana`ole*
Ka home nani o nā kānaka maoli	*The beautiful home of the native people*
Ka ʻāina hoʻopulapula ē	*The homestead land*
Eō mai e Waimānalo	*Answer this call, O Waimānalo*

Ka ʻāina mai ke akua ē	*The land from God*
E ola, e nā pua o Waimānalo	*Live, O blossoms of Waimānalo*
He ʻāina kaulana ē	*A famous land*

4.3.2.2 Kaulana ʻO Waimānalo

Na (by): Sam Naeʻole
Sunday Manoa "Guava Jam" 1969 Hula Records

This mele is another mele pana speaking of the beauty of Waimanalo and the residents of this area who cherish this land. The locals thrive in this community on their homestead land while treasuring the stunning views of the high sea cliffs, the bountiful ocean, and the famous surf spot of Makapuʻu which brings them great joy and love of this land.

Kaulana ʻo Waimānalo	*Famous is Waimānalo*
	For the cliffs of Makapuʻu
I ka pali o Makapuʻu	*For the whispering sea*
I ke kai hāwanawana	*Surrounded by cliffs*
Hoʻopuni ʻia e nā pali	
	Outstanding is Mānana
Hiehie a`o Mānana	*Standing strong in the sea*
Kūkilakila i ke kai	*Encircled always*
Pōʻai mau ʻia ana	*By the surging sea*
E ke kai hānupanupa	
	Look quickly
ʻAlawa iho ʻoe	*At the surfboards*
I nā papa heʻenalu	*Outstanding the stance*
Hiehie ke kūlana	*As they glide smoothly*
I ka heʻe mālie mai	
	Beautiful the yards and homes
ʻUi nā ʻāina home	*Of Waimānalo*
Aʻo Waimānalo	*Full of love*
Ua piha me ke aloha	*And great happiness*
A me ka nui hauʻoli	
	The story is told
Haʻina mai ka puana	*Famous is Waimānalo*
Kaulana ʻo Waimānalo	*For the cliffs of Makapuʻu*
I ka pali o Makapuʻu	*For the whispering sea*
I ke kai hāwanawana	

4.3.2.3 Hanauma

Mary Kawena Pukuʻi & Maddy K Lam
Kawai Cockett "A Traditional Hawaiian" 1998 Hula Records

Another mele pana speaking of the love for their home of Waimānalo, the relaxing sands of Sandy Beach, the calm gentle sea, the gentle cool breezes, and majestic mountains.

Mahalo aʻe ana au	*I am admiring*
I ka nani aʻo Hanauma	*The beauty of Hanauma*
Ke kai kūʻono hālaʻi	*A restful bay*
Pōʻai ʻia e nā pali	*Surrounded by cliffs*
Ua makemake nui ʻia	*Much do I enjoy*
Ke alanui kīkeʻekeʻe	*The winding road*
E iho aku ai i lalo	*That leads downward (to)*
I ke kaha one ākea	*The wide and sandy beach*
He kahua na ka lehulehu	*A place for the public*
E luana hauʻoli ai	*To relax happily*
E hoʻolono like aʻe ana	*To listen together*
I ka leo hone o ke kai	*To the pleasant sounds of the sea*
ʻOluʻolu i ka peʻahi	*Cooled by the fanning*
A ka makani aheahe	*Of a gentle breeze*
E hoʻoluli mālie nei	*That set in motion*
I nā lau aʻo ke kiawe	*The kiawe leaves*
Haʻina mai ka puana	*This ends my song (of praise)*
No ka nani aʻo Hanauma	*For the beauty of Hanauma*
Ke kai kūʻono hālaʻi	*A restful bay*
Pōʻai ʻia e nā pali	*Surrounded by cliffs*

4.3.2.4 Waimanalo Aina Kaulana

Traditional

Many of the songs of Waimanalo were written to honor the homestead lands that the Hawaiians were granted. This mele is is in honor of Kalanianaʻole who helped establish the Department of Hawaiian Homelands.

Uluwehi Waimānalo ʻāina hoʻopulapula Ipu ia like ala ona pua like ʻole	*Lush, Waimānalo, homestead land* *Its fragrant flowers, incomparable*
Hoʻokahi puʻuwai hoʻokahi manaʻo ʻĀina aloha o ka lehulehu	*One heart, one thought* *Land of love for the population*
Hanohano no ʻoe e Kalanianaʻole Hoʻoko kauoha ʻoe nā ka hana pololei	*You are the glory of Kalanianaʻole* *You fulfilled the trust with righteous deeds*
Haʻawi ka mae maʻi e ia Waimānalo Kokua like mai na mana Kahikolu	*Waimānalo gives health* *Help and power comes from Trinity*
Kū kilakila nā home uʻi Me ka kokua a nā mana lani	*Standing strong, the stalwart homes* *With help from the heavenly powers*
Haʻina kēia mele no Waimānalo ʻĀina hoʻopulapula no Kalanianaʻole	*Tell this song of Waimānalo* *Homestead land of Prince Kalanianaʻole*

4.3.2.5 Waimanalo Blues

Liko Martin & Thor Wold
Country Comfort "We Are The Children" 1992 Hana Ola Records

Originally, this song was written for Nanakuli "Nanakuli Blues", but when the group Country Comfort recorded this mele, it was changed to Waimānalo Blues and that has stuck with the Hawaiian community since then. This song is probably one of the most memorable songs in Hawaiʻi still to this day.

Wind's gonna blow, so I'm gonna go
Down on the road again
Starting where the mountains left me
I'm up where I began

Where I will go, the wind only knows
Good times around the bend
Get in my car, goin' too far
Never comin' back again

Tired and worn, I woke up this mornin'

Found that I was confused
Spun right around and found I had lost
The things that I couldn't lose

The beaches they sell to build their hotels
My father's and I once knew
Birds all along sunlight at dawn
Singing Waimanalo blues

Down on the road with mountains so old
Far on the country side
Birds on the wing forget in a while
So I'm headed for the windward side

All of your dreams, sometimes it just seems
That I'm just along for the ride
Some they will cry because they have pride
For someone who's loved here died

The beaches they sell to build their hotels
My father's and I once knew
Birds all along sunlight at dawn
Singing Waimanalo blues

5.0 Traditional or Customary Practices Historically in the Study Area and Surrounding Area

In traditional (pre-western contact) culture, named localities served a variety of functions, informing people about: (1) places where the gods walked the earth and changed the lives of people for good or worse; (2) heiau or other features of ceremonial importance; (3) triangulation points such as koʻa (fishing markers) for fishing grounds and fishing sites (4) residences and burial sites; (5) areas of planting; (6) water sources; (7) trails and trail side resting places (oʻioʻina), such as a rock shelter or tree shaded spot; (8) the sources of particular natural resources/resource collections areas, or any number of other features; or (9) notable events which occurred at a given area. Through place names knowledge of the past and places of significance was handed down across countless generations. There is an extensive collection of native place names recorded in the moʻolelo (traditions and historical accounts) published in Hawaiian newspapers.

This is not intended to be a comprehensive list of all the practices that historically or contemporaneously occur in Waimānalo. This is meant to show the range of traditional or customary practices that took place in the larger geographic extent. Many of these practitioners may not have taken place within the Study Area, and many of those that may have do not currently take place within the Study Area, although that may actively occur within the larger ahupuaʻa of Waimānalo.

5.1 Moʻolelo

Moʻolelo is the practice of storytelling and developing oral histories for the purpose of transmitting knowledge information and values intergenerationally. Moʻolelo are particularly critical in protecting and preserving traditional culture in that they are the primary form through which information was transmitted over many generations in the Hawaiian Islands and particularly in the Native Hawaiian community.

Storytelling, oral histories, and oration are widely practiced throughout Polynesia and important in compiling the ethnohistory of the area. The Native Hawaiian newspapers were particularly valued for their regular publication of different moʻolelo about native Hawaiian history. Were it not for the newspapers having the foresight to allow for the printing and publication of moʻolelo, far less information about the cultural history of the Hawaiian people would be available today.

There are numerous moʻolelo about Waiamānalo and the geographic extent. These moʻolelo are provided in **Sections 3.1 (Traditional Period)** and in **Section 4.0 (Cultural Resources)**.

5.2 Habitation

Hawaiians lived extensively throughout the islands. Handy, Handy, and Pukui (1991) identify how different kānaka and their ʻohana lived in accordance with what the authors termed "occupational contrasts" (286), meaning that based on occupation (i.e., planter or fisherman, for example), habitation systems differed. They describe, "The typical homestead or *kauhale*…

consisted of the sleeping or common house, the men's house, women's eating house, and storehouse, and generally stood in relative isolation in dispersed communities. It was only when topography or the physical character of an area required close proximity of homes that villages exist. There was no term for village. *Kauhale* meant homestead, and when there were a number of *kauhale* close together the same term was used. The old Hawaiians, in other words, had no conception of village or town as a corporate social entity. The terrain and the subsistence economy natural created the dispersed community of scattered homesteads" (284).

5.3 Travel and Trail Usage

The ability to travel was essential to Hawaiians and enabled their sustainability. Travel, and the freedom to move throughout different areas, had different names, including huakaʻi, kaʻapuni, or kaʻahele. Traveling by sea had distinct names as well, like ʻaumoana. Traveling through the mountains was sometimes referred to as hele mauna. Travel, and moving throughout various places and regions was an essential practice and way of life in traditional Hawaiʻi.

The freedom to travel safely was so important that Kamehameha I would come to pass a well-known law protecting travelers, Ke Kānāwai Māmalahoe (The Law of the Splintered Paddle). It is explained by the William S. Richardson School of Law as follows:

> As a young warrior chief, Kamehameha the Great came upon commoners fishing along the shoreline. He attacked the fishermen, but during the struggle caught his foot in a lava crevice. One of the fleeing fishermen turned and broke a canoe paddle over the young chief's head. The fisherman's act reminded Kamehameha that human life was precious and deserved respect, and that it is wrong for the powerful to mistreat those who may be weaker.
>
> Years later when Kamehameha became ruler of Hawaiʻi, he declared one of his first laws, *Ke Kānāwai Māmalahoe* (the Law of the Splintered Paddle), which guaranteed the safety of the highways to all. This royal edict was law over the entire Hawaiian kingdom during the reign of Kamehameha the Great. Considered one of the most important *kānāwai* (royal edict), the law gave the Hawaiian people an era of freedom from violent assault (William S. Richardson School of Law 2021).

The kānāwai (law) reads:

E nā kānaka	O my people
E mālama ʻoukou i ke akua	Honor thy god
A e mālama hoʻi	Respect alike, the rights of
Ke kānaka nui a me kānaka iki	All men great and humble

E hele ka ʻelemakule	See to it that our aged,
Ka luahine, a me ke kama	Our women, and children
A moe i ke ala	Lie down to sleep by the roadside
Aʻohe mea nana e hoʻopilikia	Without fear of harm
Hewa no, make	Disobey, and die

The law would have such long-lasting resonance that it would be expressly incorporated into the Hawaiʻi State Constitution.[4]

As traveling through traditional trails was the primary means by which people traveled on land throughout most of Hawaiian history, the traditional trail system is particularly important throughout the Hawaiian Islands. Throughout the islands, there were numerous trails that allowed for people to access different locations. This trail system was critical not only for maintaining a healthy population and managing this population, but it was also important for the traditional economic system of bartering. The trail system allowed for different localized communities to engage and interact. This also allowed for the trade of goods throughout island communities.

Native informants speak to trails that existed in Waimānalo. In *Sites of Oahu*, an account from Charles Alona given in 1939 is provided, "Just beyond Pali-o-Kau was an old trail that led up to the top fo the hills. The trail was good and not too hard to ascend. Farther on was another tail that went far up inland but required hard climbing" (Sterling and Summers 1978: 249).

The contemporaneous Waimānalo Trailhead is mauka and west of the project area. The proposed action would have no impact on this exsiting trail usage.

5.4 Loko Iʻa (Fishponds) and Loko Paʻakai-Kula Āliialia (Salt Making Beds)

Fishponds sites have always been highly valued features of the landscape. Writing about loko iʻa, Kamakau (1976) observed:

> Fishponds, *loko iʻa*, were things that beautified the land, and a land with many fishponds was called a "fat" land (*ʻaina momona*). They date from very ancient times. Some freshwater ponds, *loko wai*, were made when the earth was made, but most of the *loko iʻa* and the shore ponds, *loko kuapa*, were made by *ka poʻe kahiko*.[25] The making of the walls (*kuapa*) of the shore ponds was heavy work, and required the labor of more than ten thousand men. Some of these fishponds covered an area of sixty or seventy acres, more or less. Walls had to

[4] Article IX. Section 10 of the Hawaii State Constitution reads: "The law of the splintered paddle, mamala-hoe kanawai, decreed by Kamehameha I--Let every elderly person, woman and child lie by the roadside in safety--shall be a unique and living symbol of the State's concern for public safety."

> be made on the seaward side sometimes in deep water and sometimes in shallow, and many stones were needed.
>
> Many *loko kuapa* were made on Oahu, Molokai, and Kauai, and a few on Hawaii and Maui. This shows how numerous the population must have been in the old days, and how they must have kept the peace, for how could they have worked together in unity and made these walls if they had been frequently at war and in opposition one against another? If they did not eat the fruit of their efforts how could they have let the *awa* fish grow to a fathom in length; the *ʻanae* to an *iwilei* (yard); the *ulua* to a meter or a *muku* (four and one half feet); the *aholehole* until its head was hard as coral (*koʻa ka lae*); and the *ʻoʻopu* until their scales were like the *uhu*? Peace in the kingdom was the reason that the walls could be built, the fish could grow big, and there were enough people to do this heavy work... (Kamakau 1976:47)

Numerous practitioners interviewed for this CIA are also kiaʻi loko iʻa (fishpond caretakers). Those activities would not be impacted by the proposed action and are not near the project area.

5.5 Farming

Since poi was the staple food for Native Hawaiians, it was of the utmost priority for the first settlers to establish loʻi. Kalo's prominence in the Hawaiian diet derived from its nutritional value, but even more so from its mythological significance. According to Hawaiian traditions, the first human (male) was born from the taro plant:

> The first born son of Wakea and Papa was of premature birth and was given the name Haloa-naka. The little thing died, however, and its body was buried in the ground at one end of the house. After a while, a taro plant shot up from the child's body, the leaf of which was named lau-kapa-lili, quivering leaf; but the steam was given the name Haloa.
>
> After that another child was born to them, whom they called Haloa, from the stalk of the taro. He is the progenitor of all the peoples of the earth. (Malo 1951:244)

As discussed in **Section 3.2 (Traditional Period) and 3.3 (Historic Period)**, the area has an extensive history of farming that extends well back into the pre-European contact era. Farming continues in and around the project area.

5.6 Traditional Clothing (Clothes Making, Dyeing, and Lei Making)

Kapa (commonly known as barkcloth) was the traditional material made through a traditional method of gathering, treating, and beating plant fibers, often, but not limited to, wauke (*Broussonetia papyrifera*) to make fabric that was used to make lole (clothing). Pacific and Hawaiian kapa was known for its wide range of colors and the application of watermarks.

One article describes the process for making kapa:

> The finest kapa came from the paper of the mulberry tree. These trees were cultivated on plantations and grew to heights of more than twelve feet. As the tree grew, the branches were nipped off along the main trunk, insuring a long piece of bark which was easily peeled from the tree.
>
> The manufacture of kapa was an important occupation for women. After the bark had been peeled from the tree, the inner bark was separated and soaked in sea water to make it soft and pulpy. The softened bark was placed on an anvil and beaten with a cylindrical wooden beater. The first beating separted the fibers and produced strips about eight or nine feet long and ten to fourteen inches wide. These strips could be dried and stored until needed. When needed, the strips were soaked in water, placed in layers between banana leaves, and left for about ten days to mature by "retting" which is the decomposition and removal of softened tissues, leaving the finer fibers. These partially decomposed layered strips were beaten a second time with specially carved four-sided beaters. The patterns carved on the beaters were functional as they produced the necessary characteristics in the kapa for its end use. These carved designs left the equivalent of a watermark on the kapa.
>
> Kapa which was to be extremely soft and pliable, such as that used for the malo or loincloth, was subjected to an additional softening process. This process, which produced a finely ribbed fabric, was done by dampening the cloth, stretching it over a grooved board, and running a wooden grooving tool along the indentations in the board. When the cloth dried, permanent ribs remained. The hand was very similar to our crinkle gauze of today (Furer 1981:109-110).

In Waimānalo, it is likely that these activities were once pervasive throughout the area. One 1847 description of Waimānalo that appeared in the Hawaiian language newspaper notes:

> At that time, it seemed that the valley was filled with breadfruit, mountain apples, kukui and coconut trees. There was taro patches, with banks covered with ti and wauke plants. Grass houses occuried the dry lands, a hundred of them here and sweet potatoes and sugar cane were much grown. It was a great help toward their

> livelihood.... The whole ahupuaa of Waimanalo was leased to white men expect the native kuleanas and because the cattle wandered over them, they were compelled to build fences for protection. The taro patches that were neatly built in the time when chiefs ruled over the people and the land, were broken up. The sugar cane, ti, and wauke plants were destroyed. The big trees that grew in those days, deid because the roots could not get moister. The valley became a place for animals (Sterling and Summers 1978: 244).

Hawaiians were skilled at utilizing plants and materials to dye their clothing and other materials. Different methods would be employed to hō‘awa, extract dye colors from their source material(s). These dyes would be placed in a cup, known as a kā kāpala. Even foreign or exotic plants were utilized for this practice. Hawaiians used different words for the various types of dyeing activities and methods.

- We‘a – a red dye or to print or dye red
- Hili – bark dye, as hili kukui, hili kōlea, hili noni; also kapa dyed with bark or the name for dyeing with the use of bark
- Kūhili – to dye (or stain) by soaking in water containing mashed bark, such as used for nets; also mulberry bark before it is beat into kapa
- Kūpenu – to dye by dipping material
- Ki‘olena – to dye kapa
- Hōlei –native tree (*Ochorosia compta*) related to the hao (*Rauvolfia*), which yields a yellow dye for kapa
- Kīhe‘ahe‘a pala‘ā – dye made from the pala‘ā (Sphenomeria chinensis syn. chusana) fern; pala‘ā also references a kapa made from the māmaki (*Pipturus spp.*) bark which is then dyed a brownish-red with pala‘ā fern

Hawaiians also had a lexicon for the various colors that could be achieved through this traditional practice.

- ‘Ōlenalena – yellow
- Hili – Dark-brown dye made from bark
- Puakai – red
- Nao – dark red
- Pōkohukohu – color made from the noni (*Morinda citrifolia*) root
- ‘Ākala – color made from raspberry or thimbleberry juice
- ‘Ōma‘oma‘o – light green color made from ma‘o leaves

Similarly, lei making was a regular occurance in traditional Hawaii. Anderson-Fung and Maly (2009) write about the traditional practice:

In old Hawai‘i, lei could have important ceremonial functions, such as in religious offerings and for chiefly regalia, but lei were also enjoyed as personal adornment by Hawaiians of all levels of society. The ali‘i (chiefs) and the maka‘ainäna (the common people who tended the land) all wore lei. Even the akua (gods, deities, spirits), it was believed, sometimes wore lei when they walked the land in human form. The following observation by the French botanist Gaudichaud, who visited the islands in 1819, paints a picture of Hawai‘i as a place where the lei was an integral part of everyday life:

> "It is indeed rare to encounter one of the natives of this archipelago who does not have an ornamental plant on his head or neck or some other part of his body…[The] women … change [the plants they wear] according to the seasons, [and for them] all the fragrant plants, all flowers, and even the colored fruits, serve as attire, one after another. …The young girls of the people, those of the island of Hawai‘i especially, seem to be fond of the [kou, Cordia subcordata], a tree very abundant in all the cultivated areas… The young girls of the mountains, who live near the forests, give their preference to the flowers of the [Erythrina (wiliwili) and a species of Canavalia, called ‘awikiwiki], the lively color of which makes magnificent garlands. Such natural attire is much more rich, much more striking, than all the dazzling creations of the elegant European ladies."

This account and others like it suggest that lei worn for personal adornment were fashioned from the favorite plant materials that were readily available and abundant in the lei maker's environment (4).

Lei making continues as an important practice today, as the making and giving of lei as an expression of aloha to loved ones still regularly occurs throughout the Hawaiian Islands. Practitioners of these crafts actively practice in the Waimānalo ahupua‘a, although there is no indicator that the Study Area is currently used for any of these practices, these practices likely occurred for these purposes and may be used for these purposes again under the Master Plan.

5.7 Lā‘au Lapa‘au

Lā‘au lapa‘au is the practice of traditional Hawaiian medicine. For centuries, native Hawaiians relied upon the environment around them to provide them medicine. It is still actively taught and practiced today. Medicinal experts or healers have intimate knowledge about plants and other resources to cure ailments illnesses and sicknesses. Traditional medicine is practiced by native peoples and local communities around the world. Similarly, Native Hawaiians, over

many generations, have learned how to properly care for, utilize, and prepare plants to maintain the community's health.

It was important to not only have plants and have access to plants but to ensure that these plants were healthy and in good condition. In the list of biological resources, plants with medicinal capacity and components are identified. These resources are cultural resources. They are critical to the ongoing practice of traditional medicine and healing within the Native Hawaiian community. There are still many traditional medicine practitioners in the Hawaiian community and throughout the Hawaiian Islands today. It is a practice that is still taught to the younger generation, and it is a practice that is still honored and utilized in many Hawaiian households throughout the state.

It was important that medicinal plants existed throughout the Hawaiian Islands so that when people traveled throughout different places on in the islands, they would always have access to the medicine they needed. In some cases, some plants were extremely rare, and, in those cases, it was particularly important to make sure that these populations were well protected and well cared for. An identification of plants of cultural value for medicinal purposes that grow naturally within the project area is included in **Section 4.3**. There were also numerous gods associated with health, healing, and medicine. They are listed in **Table 4**.

Table 1. Hawaiian Gods Associated with Health, Healing and Medicine

Hawaiian gods associated with health, healing, and medicine (Pukui, 1971)
Hi‘iakaikapolioPele
Lonopūhā
Ma‘iola
Hi‘iakaikapua‘ena‘ena
Hauwahine
Hina
Hina‘ea
Hinalaulimukala
Kamakanui‘ahu‘ilono
Kanaloa
Kū
Kūkeolo‘ewa
Mauliola
‘Ōpeluhuikauha‘ailo

Waimānalo has an active community of healing practitioners. These practitioners actively practice in the Waimānalo ahupua‘a and are actively engaged with CTAHR.

5.8 Kilo

Kilo are observational traditions and people who examine, observe, or forecast are identified as kilo and serve as traditional climate and weather experts. Kilo "references a Hawaiian observation approach which includes watching or observing [the] environment and resources by listening to the subtleties of place to help guide decisions for management and pono practices" ('Āuamo Portal 2021). The practice of kilo is seeing a resurgence on Hawai'i Island and in the Hawaiian Islands.

Kilo hōkū are traditional astronomers, or those who study the stars. A hale kilo or hale kilo hōkū were observatories or star observatories respectfully. Kilo makani were those who traditionally observed the winds. Kilo moana were traditionally oceanographers. Kilo 'uhane were those who observed and communicated with spirits.

Traditionally the practice of kilo or observation was critical to the management of traditional Hawaiian landscapes. This practice is very closely tied to traditional or customary access as observers would require access to specific vistas viewsheds or areas in order to observe environmental phenomenon.

As illustrated in the proceeding section, Native Hawaiians created a wide range of terms for the environment and understanding the ecosystems around them. These terms were often quite specific, and many were tied closely to a specific geographic area. This level of specify illustrated the close kinship Hawaiians shared to their surrounding environment. The ability to observe and understand all elements of their ecosystem was essential to both the successful care of natural resources and the survival of the Hawaiian people.

The ability to effectively and accurately read weather phenomena was essential to the ability of Hawaiian people who farm, fish, navigate, and conduct any number of practices in a sustainable and successful manner. The knowledge Hawaiians acquired about their environment around them, including weather phenomena were the result of multi-generational observations that comprised an extensive body of information passed down through oral traditions. The following Hawaiians names and their descriptions of weather phenomena include words for clouds, rains, and winds that are utilized by kilo to help guide activities and practices:

- ao akua – godly cloud, figurative representative of a rainbow.
- ao loa – long cloud or high, distant cloud. Status cloud along the horizon.
- ao 'ōnohi – cloud with rainbow, 'ōnohi, colors contained within it.
- ao pua'a – cumulus clouds of various sizes piled together, like a mother pig with piglets clustered around her. The Kona coast is famous for ao pua'a, a sign of good weather and no impending storms.
- ao pehupehu – continually growing cumulus typical of summer. Drifting with the tradewinds, these clouds pick up moisture and darken at their base, finally releasing their rain on the windward mountain cliffs.

- ho'omalumalu – sheltering cloud.
- ho'oweliweli – threatening cloud.
- ānuenue – rainbow, a favorable omen.
- ua loa – extended rainstorm.
- ua poko – short rain spell.

5.9 Ceremonial Practices

The ceremonial practices of traditional Hawaiians are extensive. Throughout the course of Hawaii's history, traditional Hawaiians have integrated religious, spiritual, and ceremonial practices in their daily lifestyle. Traditional or customary practices are then not distinct ceremonial practices but rather a part of their way of life. Therefore, it is challenging to define in discrete terms ceremonial practices associated with traditional Hawaiian customs. For the purpose of this section, the ceremonial practices discussed here focus primarily on customs carried out by general populations of Hawaiians, as opposed to activities or rituals carried out by trained and recognized specialists, kahuna. Those practices are discussed in a separate section.

Ceremonial practices are incorporated throughout numerous, if not all, of the activities identified in this section. For example, there is a great level of ceremonial practice and ritual associated with the care of the dead, burial remains, and funerary objects. Native Hawaiians as with most Iindigenous people integrated ceremony into most of their practices especially those that occurred out in the natural landscape or related to their way of life. There was no specific site or materials required for ceremony *per se*.

Nonetheless, shrines were sometimes associated with ceremonial practices. Shrines for the purpose of this assessment are distinct from heiau, which were places of worship. Again, the distinction is the nature in which these features or sites were created. Heiau required the advice and guidance of a kahuna, who would help ali'i determine the best location in which to erect a heiau. Conversely, shrines were erected by maka'āinana (working class) as part of their daily or occupational functions.

Makahiki is one example of a practice that has taken place prior to contact and continues post-contact and involves ceremonial elements. One of these elements is the akua loa, described by Malo as "the image of the Makahiki god, Lono-makua … This work was called ku-i-ke-pa-a" (Malo 1951: 143). Further described by Malo:

> 22. This Makahiki idol was a stick of wood having a circumference of about ten inches and a length of about two fathoms. In form, it was straight and staff-like, with joints carved at intervals and resembling a horse's leg; and it had a figure carved at its upper end.

> 23. A cross piece was tied to the neck of this figure, and to this cross piece, kea, were bound pieces of the edible pala[5] fern. From each end of this cross piece were hung feather lei that fluttered about, also feather imitations of the kaupu bird[6], from which all the flesh and solid parts had been removed.
>
> 24. The image was also decorated with a white tapa cloth made from wauke[7] kakahi[8], such as was grown at Kuloli[9]. ... One end of this tapa was basted to the cross piece, from which it hung down in one piece to a length greater than that of the pole. The width of this tapa was the same as the length of the cross piece, about sixteen feet.
>
> 25. The work of fabricating this image, I say, was called kuikepaa. The following night the chiefs and people bore the image in grand procession, and anointed it with cocoanut (sic) oil. Such was the making of the Makahiki god. It was called Lono-makua (father Lono), also the akua loa. This name was given it because it made the circuit of the land (Malo, 1951: 144-145).

The akua loa was taken to each ahupuaʻa. This custom was important to the care, stewardship, and worship of the gods. These practices were intimately tied to the proper care and sustainable stewardship of all cultural and natural resources. Ethnographic data indicates that such practices take place within the Project Area or Study Area.

As with many concepts of traditional Hawaiian living and practices, the contemporaneous concept of the kahuna has been largely influenced by Western thought. The roles and responsibilities of the kahuna are well explained by Professor Terry Kanalu Young in his text, *Rethinking the Native Hawaiian Past*, in which he writes:

> As recipients of hana lawelawe[10], the Aliʻi Nui were themselves serves of a sort. They were responsible for maintaining a positive spiritual relationship with the Akua through pono conduct. Pono was defined for individuals of that era within the context of a particular task specialty. Kahuna who functioned as experts in specific skill areas like medicinal healing, canoe building, or spiritual advising were consulted by leaders. The experts were looked to as responses for what was considered pono in their respective realms of knowledge (Young 1998).

[5] Native fern (*Marattia douglasii)* used for medicinal purposes as well as in ceremony.
[6] Laysan albatross (*Diomedea immutabilis*), written with diacritical markings as kaʻupu.
[7] Paper mulberry (*Broussonetia papyrifera*)
[8] Meaning outstanding or of high quality, as in reference to the white kapa (tapa) made from these fibers.
[9] Likely a reference to the place in Pelekunu Valley at Kamalō, Molokaʻi, located between the peaks of Kaunuohua and Pēpēʻōpae.
[10] Hana lawelawe are defined by Young as "service tasks" by which kaukau aliʻi (lower ranked chiefs) served the Aliʻi Nui (high chiefs). These hana lawelawe were critical to the ability of the Aliʻi Nui to effective govern (Young 1989).

Kahuna were critical to traditional Hawaiian lifeways as their extensive expertise helped to provide sound and strategic advice to aliʻi and other leaders on proper spiritual, cultural, and ecological management. There are numerous types of kahuna in Hawaiian traditions. including, but not limited to:

kahuna ʻanāʻanā - sorcerer who practices black magic and counter sorcery

kahuna aʻo - teaching preacher, minister, sorcerer.

kahuna hāhā - an expert who diagnoses, as sickness or pain, by feeling the body.

kahuna haʻiʻōlelo - preacher, especially an itinerant preacher.

kahuna hoʻohāpai keiki - medical expert who induced pregnancy.

kahuna hoʻopiʻopiʻo - malevolent sorcerer, as one who inflicts illness by gesture.

kahuna hoʻoulu ʻai - agricultural expert.

kahuna hoʻoulu lāhui - priest who increased population by praying for pregnancy.

kahuna hui - a priest who functioned in ceremonies for the deification of a king.

kahuna kālai - carving expert, sculptor.

kahuna kālai waʻa - canoe builder.

kahuna kiʻi - caretaker of images, who wrapped, oiled, and stored them, and carried them into battle ahead of the chief.

kahuna kilokilo - priest or expert who observed the skies for omens.

kahuna lapaʻau - medical doctor, medical practitioner, healer. Lit., curing expert.

kahuna makani - a priest who induced spirits to possess a patient so that he might then drive the spirits out.

kahuna nui - high priest and councilor to a high chief; office of councilor.

kahuna poʻo - high priest.

kahuna pule - preacher, pastor, minister, parson, priest. clergyman. Lit., prayer expert.

kahuna pule kaʻahele - preacher

kahuna pule wahine - priestess

5.10 Haku Mele, Haku Oli, and Hula

This practice is related to the composition of song and chants. this is a practice that has existed for many centuries in the Hawaiian culture. When the Hawaiian culture primarily relied on an oral tradition to pass on knowledge and information, the ability to create songs and chants was essential to pass information from one generation to the next. As Donaghy (2013) notes, Hawaiians had hundreds of terms associated with this practice.

Songs and chants are largely influenced by the environment around them. As a pedagogical device it was important if not imperative that these songs or chants effectively captured data from the environment around the composer and passed on this information for others to utilize when managing natural resources. In a very real sense, the land and natural resources act as a muse for composers. The category of songs that provide information on or speak to natural resources are called mele ʻāina (songs of the land). As shown in the previous section, there are numerous traditional chants and songs about the project area and its surrounding landscape.

Much like mele and oli, hula serves as a way of both honoring place and telling the story of place. Many hula, especially those based on mele ʻāina, require intimate understanding of the place where the mele was composed, including the natural elements of that ʻāina. Hula hālau will regularly take huakaʻi, or journeys, to visit and honor the place a particular mele speaks of. The ability to visit the place and learn about it is important to the practice of hula.

Hula, as well as mele or oli, are also offered as gifts to kupuna or gods. This practice also requires access to traditional sites. Associated with hula would have been the practices of lei making and the use of plants to dye clothing.

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6.0 Ethnographic Data

As discussed previously in **Section 2.6 (Ethnographic Methodology)**, information was collected from a wide range of individuals and sources. The findings of those efforts are discussed in this section. Ethnographic data is utilized to supplement the other research methods utilized. It is one in a range of research tools employed to gather information about the project area.

Honua Consulting was tasked with gathering information from individuals with lineal and cultural ties to the area and its vicinity regarding regional biocultural resources, potential impacts to these biocultural resources, and mitigation measures to minimize and/or avoid these impacts.

The bulk of the information available from practitioners and kūpuna were drawn from native testimonies and Hawaiian language sources and integrated into the cultural and historic overview section of this assessment. Those sources, along with responses to this project, were considered when researching the traditional or customary practices discussed in a previous section. Interviews were conducted with four (4) individuals. One individual contacted Honua in response to the public notice. The other three individuals are known community leaders and practioners in Waimānalo and were selected by Honua to be interviewed based on their cultural knowledge and relationship to Waimānalo. All individuals approached to be interviewed agreed to be interviewed. This data helped to identify additional resources and practices in the area; this information also helped to confirm research conducted for this report.

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6.1 Interview with Kimeona Kane

Interviewer: Mathew Sproat
Interviewee: Troy Allen Kimeona Kane
Date: 6/23/2022
Location: via telephone

Biography

Mr. Kane works in conservation and preservation. He is the director of community outreach with 808Cleanup. He is also the chair for the Waimānalo neighborhood board. Mr. Kane was born and raised in Waimānalo, where he currently lives.

Overview

As a lifelong resident of Waimānalo, Mr. Kane brings perspective and robust knowledge on Waimānalo and the project site. He believes that the expanded health center will greatly benefit the community and provide critical services.

General Discussion

Mr. Kane is associated with the project area through his lifelong residency in Waimānalo and the area. He uses the health center today and used it also as a child. Further, as the chair for the Waimānalo Neighborhood Board, he has worked with the health center. Mr. Kane noted that the project area is next to some of the archaeological space near Bellows. As such, there may be archaeological resources outside, but near, the main project area. Finally, Mr. Kane explained that the health center has been a fixture of the community for a long time, and has been a place to bring back Native Hawaiian culture. The project will ensure that the needs of the community are being met.

Cultural Resources

Mr. Kane mentioned that there is a lāʻau lapaʻau garden and hula space that is utilized currently at the site. He does not have information on who maintains the lāʻau garden today, but he does believe the garden is still present.

Traditions and Customs

Mr. Kane said that it is his understanding that a space on the project area was used for hula, at least before COVID. There also used to be a Hawaiian language offered there, as well as a breastfeeding class.

Impacts

Mr. Kane noted that there are no natural resources that should be impacted by the project. He did note that the project will require the local farmers market to relocate. Mr. Kane also explained that there are large monkeypod trees on the premises that are a fixture of the community.

Regarding traditions and customs, Mr. Kane is not aware of anything that would be impacted. However, the nearby Waimānalo Village Homes may host cultural events.

Mitigation Measures and Recommendations

Mr. Kane explained that the community of Waimānalo is hypersensitive when it comes to construction work. As such, he said that people will be on edge if during construction there are no cultural monitors present. If remains are found, he recommended that the community be engaged.

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6.2 Interview with Pilialoha Callahan

Interview with Pilialoha Callahan

Interviewer: Mathew Sproat
Interviewee: Pilialoha Callahan
Date: 5/26/2022
Location: via telephone

Biography

Ms. Callahan is currently a stay at home mom. She was born and raised in Kāneohe, and currently lives in Waimānalo.

General Discussion

Ms. Callahan is associated with the project area by being a community member, and uses the health center herself. She was not aware of any associated stories with the project area.

Cultural Resources

Ms. Callahan is not aware of any cultural resources in the project area.

Traditions and Customs

Ms. Callahan is not aware of any traditions or customs that take place in the project area.

Impacts

Ms. Callahan did not believe that the project would impact any cultural resources, traditions, or customs.

Mitigation Measures and Recommendations

Ms. Callahan believes that any project should have a cultural monitor or practitioner on site in case anything were to happen. Ms. Callahan noted that she was not aware of the project until she saw something on social media. She expressed that she would have liked to know about the project earlier on.

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6.3 Interview with Kukana Kama-Toth

Interviewer: Mathew Sproat
Interviewee: Kukana Kama-Toth
Date: 6/22/2022
Location: via telephone

Biography

Currently, Ms. Kama-Toth is a program specialist with Alu Like Incorporated. She is also a community advocate in Waimanalo, and an educator at Waimanalo Intermediate School. Ms. Kama-Toth was raised in Waimanalo on the Hawaiian Homestead.

General Discussion

Ms. Kama-Toth is associated with the project area through her life and role in the community. Ms. Kama-Toth explained that the health center has been very important for the community.

Cultural Resources

Ms. Kama-Toth explained that the area used to get really wet before the dredging along the river edges occurred. This allowed certain species to thrive. However, she could not name any specific cultural resources in the boundary of the health center.

Traditions and Customs

Ms. Kama-Toth was not aware of any customs or traditions that took place within the project area. That said, she did note that there is an area where people can plant laʻau.

Impacts

Ms. Kama-Toth does not believe the project will impact an cultural resources, traditions, or customs.

Mitigation Measures and Recommendations

Ms. Kama-Toth recommended that every moving vehicle or mechanical machinery should have a cultural monitor present. If any iwi are found, they should follow the proper protocol.

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6.4 Interview with Dr. Mary Francis Oneha

Interviewer: Mathew Sproat
Interviewee: Mary Francis Oneha
Date: 6/27/2022
Location: via telephone

Biography

Dr. Mary Frances Oneha was born in Honolulu, and she currently lives in Kaimukī. She is the CEO of the Waimānalo Health Center. Dr. Oneha has been the Chief Executive Officer of Waimānalo Health Center since March 2012. Her experience with community health centers and serving Native Hawaiian communities started in 1992. Dr. Oneha also conducts community-based research. Her studies have focused on improving the health and well-being of Native Hawaiians. She serves on the Institutional Review Board of the Association of Asian Pacific Community Health Organizations.

She holds a PhD in Nursing from the University of Colorado Health Sciences Center, a Master of Nursing from the University of Washington, and a Bachelor of Science from the University of Hawai‘i. She is a member of Nā Limahana o Lonopūhā Native Hawaiian Health Consortium, an American Academy of Nursing Fellow (class of 2018), a 2014 PBN Women Who Mean Business Non-Profit Finalist, and a 2013 White House AAPI Woman Champion of Change.

General Discussion

Dr. Oneha is associated with the project area through her role as CEO of Waimānalo Health Center. She noted that one of the older buildings on the site is likely one of the oldest buildings in the general area.

Cultural Resources

Dr. Oneha is not aware of any cultural resources in the project area. There is a garden for lā‘au lapa‘au in an area near the project area.

Traditions and Customs

Dr. Oneha is not aware of any traditions or customs that take place in the project area.

Impacts

Dr. Oneha does not believe that the project will impact any cultural resources, traditions, or customs. That said, they will need to find a new place in the facility for lā‘au lapa‘au classes.

Mitigation Measures and Recommendations

Dr. Oneha did not have any recommendations.

7.0 *Ka Pa‘akai* Analysis

It has long been the law of the land that the State of Hawai‘i has an “obligation to protect the reasonable exercise of customary and traditionally exercised rights of Hawaiians to the extent feasible” *Public Access Shoreline Hawai‘i v. Hawai‘i County Planning Commission (“PASH”)* 79 Hawai‘i 425, 450 n. 43, 903 P.2d 1246, 1271 n. 43 (1995). In 2000, in the *Ka Pa‘akai* decision, the Court established a framework “to help ensure the enforcement of traditional and customary Native Hawaiian rights while reasonably accommodating competition private development interests.” 94 Hawai‘i 31, 35, 7 P.3d 1068, 1972 (2000). This analysis is used here to fulfill the goal of this CIA (**Section 1.4**).

It is also imperative to emphasize that the State may not delegate their obligations under the *Ka Pa‘akai* decision to another party, including but not limited to the federal government. While the *Ka Pa‘akai* decision was specific to a private developer, the facts of that case would be applicable to the situation at hand because the Court’s reasoning for this decision and applicable precedent apply – the issue being that another entity would not have the same public accountability as the State. That is the case herein, the public accountability of the federal government is not equal to that of the State of Hawai‘i. More specifically, the federal government is not bound to the obligations of the State as set forth under the Hawai‘i State Constitution, which is the document from which the rights protected under *Ka Pa‘akai* emanate.

Based on the guidelines set forth in *Ka Pa‘akai*, the Hawai‘i Supreme Court provided government agencies an analytical framework to ensure the protection and preservation of traditional and customary Native Hawaiian rights while reasonably accommodating competing private development, or other, interests. The Court has stated: “that in order to fulfill its duty to preserve and protect customary and traditional Native Hawaiian rights to the extent feasible, as required by Article XII, Section 7 of the Hawai‘i Constitution, an administrative agency must, at minimum, make specific findings of fact and conclusions of law as to the following:

1) The identification of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area.
2) The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action; and
3) The feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist. *Ka Pa‘akai*, 94, Hawaii at 47, 7 P.3d at 1084. Cited in *Matter of Contested Case Hearing Re Conservation District Use Application (CDUA) HA-3568 for the Thirty Meter Telescope at the Mauna Kea Science Reserve, Ka‘ohe Mauka, Hāmākua, Hawai‘i*, 143 Hawai‘i 379, 431 P.3d 752 (2018) (“*Mauna Kea II*”).

In order to complete a thorough CIA that complies with statutory and case law, it is necessary to fully consider information available from, and provided by, Native Hawaiian cultural practitioners and cultural descendants from the project area.

The *Ka Pa'akai* analysis is largely a legal analysis, as the applicable tests are legal standards. Therefore, a strong analysis will be conducted by someone with sufficient legal training. Additionally, at the core of a thoughtful *Ka Pa'akai* analysis is a comprehensive understanding of traditional and customary practices. In breaking down the Court's tests, it is important to the different elements that contribute to each test.

The first test - "The identification of valued cultural, historical, or natural resources in the project area, including the extent to which traditional and customary Native Hawaiian rights are exercised in the project area" – actually consists of two separate elements. First, the simple identification and existence of valued cultural, historical, or natural resources. These resources are tangible in nature. They can include sacred places, culturally valuable plants, or a religious or historic site. This assessment how sought to exhaustively identified the great multitude of resources that may exist in the project area or adjacent areas.

As to this test, this assessment shows there are cultural practices that occur within the project area, largely as beneficial impact of WHC's work. An archaeological assessment was completed, but was not provided to Honua Consulting, therefore, Honua Consulting has no information regarding any other potential tangible cultural resources in the project area.

The second element of this first test is access. Access requires two things to occur. One is the existence of a resource. Whether a plant, an animal, a place, or site, the resource must exist in order a practitioner to access it. The second thing is physical access. This includes, but it is not limited to, the ability to physically access a plant, animal, site, or location associated with a particular practice. This can also include the traditional and customary route or path taken to access the resource. This can also include cultural protocols that existed in accessing a resource. These are often temporal, in that access protocols can be at a certain time of day or year. Makahiki would be a good example of a traditional custom that has specific cultural protocols associated with access. In the case of Makahiki, the custom takes place at a certain time of year.

Therefore, the first test under *Ka Pa'akai* should include not only a listing of resources, but the identification of ways in which those resources are accessed and utilized in association with a traditional and customary practice. Informants indicate that practitioners regularly make use of the Iā'au lapa'au garden, which was created by WHC for traditional use. This is expected to continue at WHC. Informants also identify that hula and language classes occur at WHC. These are all beneficial to traditional and customary practices.

Therefore, the second test – "The extent to which those resources—including traditional and customary Native Hawaiian rights—will be affected or impaired by the proposed action" – also looks at two separate elements. The first, does the proposed action and its alternatives have an adverse impact on the existence of resources? This would include the alteration, destruction, modification, or harm of sites, including biological resources, sacred places, burial sites, etc. It also includes a loss of species. Any adverse impact or harm to resources is alone an affect or impairment caused by the proposed action.

Under this element, adverse impacts to historic sites or culturally utilized plants would all be identified adverse impacts. Under this same element, any indirect or cumulative effects would create an adverse impact under *Ka Pa'akai* if those actions harmed resources.

In addition to this, any action that impacts traditional and customary access to resources, even if there is not direct adverse impact to the resource itself, would result in an affect or impairment resulting from the proposed action. Therefore, the limitations on access that could result from development or use of the project area could create an adverse impact under *Ka Pa'akai.*

There was concern expressed by informants that the project about the construction that will take place during the project. Completion of a satisfactory archaeological survey would be beneficial, and WHC is encouraged to work with the numerous practitioners in the area to inform them of any findings. Should cultural monitoring be needed, area practitioners are extensively experienced in this and should be engaged. Informants recommended having cultural monitors present for all ground disturbing work.

Construction is not expected to otherwise impact traditional or customary practices in the area.

The third part of the *Ka Pa'akai* framework aims to identify "[t]he feasible action, if any, to be taken to reasonably protect Native Hawaiian rights if they are found to exist." Determining whether or not action has been suitably "feasible" is a matter for the State. These feasible actions could include continued access to the project as needed to conduct cultural practices.

Based on the information available, the potential for effect or impairment of traditional or customary practices is negligible. Nonetheless, best management practices should be implemented to ensure that no unanticipated affects to cultural resources occur and that there is a mechanism in place for practitioners to report any such potential occurrences to the project. A cultural monitoring program is also recommended, but this can be an on-call program in which practitioners are notified in the event of an inadvertent find.

8.0 Impact Assessment and Conclusion

Based on the information gathered and the ethnographic data, the proposed project has the potential to have a beneficial impact to cultural resources and traditional or customary practices in the area. This would be primarily achieved through the ongoing work WHC does with the Native Hawaiian Community. It should also be noted that all respondants were generally supportive of the project and appreciate the work the Center does for the Native Hawaiian community.

Table 2. OEQC compliance requirements and their corresponding sections in this CIA

OEQC notes that in addition to the content requirements for the Draft EIS, which are set out in HAR Chapter 11-200.1 et seq., the CIA should address, but not necessarily be limited to, the following matters:	
A. A discussion of the methods applied and results of consultation with individuals and organizations identified by the preparer as being familiar with cultural practices and features associated with the project area, including any constraints or limitations which might have affected the quality of the information obtained.	A detailed methodology section is provided in **Section 2**, *Methodology*.
B. A description of methods adopted by the preparer to identify, locate, and select the persons interviewed, including a discussion of the level of effort undertaken.	A discussion of the effort to gather into from persons familiar with the area or other stakeholders is provided in **Section 2.6**, *Ethnographic Methodology*.
C. Ethnographic and oral history interview procedures, including the circumstances under which the interviews were conducted, and any constraints or limitations which might have affected the quality of the information obtained.	A discussion of procedures, including constraints or limitations, is provided in **Section 2.6**.
D. Biographical information concerning the individuals and organizations consulted, their expertise, and their historical and genealogical relationship to the project area, as well as information concerning the persons submitting information or interviewed, their particular knowledge and cultural expertise, if any, and their historical and genealogical relationship to the project area.	Biographical information was provided in and through the interviews, which are included with the individual interview summaries in **Section 6.0**.

E. A discussion concerning historical and cultural source materials consulted, the institutions and repositories searched and the level of effort undertaken. This discussion should include, if appropriate, the perspective of the authors, any opposing views, and any other relevant constraints, limitations or biases.	A discussion of the materials consulted is provided in **Section 2**. An extensive cultural and historical overview, which uses both Hawaiian and English language resources is also provided in **Section 2**.
F. A discussion concerning the cultural resources, practices and beliefs identified, and, for resources and practices, their location within the broad geographical area in which the proposed action is located, as well as their direct or indirect significance or connection to the project site.	In addition to the cultural and historical overview, an extensive discussion concerning cultural resources, practice and beliefs are provided throughout the document by subfield, specifically in **Section 3** and **Section 4.**.
G. A discussion concerning the nature of the cultural practices and beliefs, and the significance of the cultural resources within the project area affected directly or indirectly by the proposed project.	A thorough discussion concerning the nature of traditional or customary practices and the significance of the cultural resources affected directly or indirectly by the proposed alternatives are provided in **Section 8**, *Impact Assessment*.
H. An explanation of confidential information that has been withheld from public disclosure in the assessment.	There has no confidential information withheld from public disclosure, except for personal emails, addresses, or phone numbers.
I. A discussion concerning any conflicting information regarding identified cultural resources, practices and beliefs.	There was no conflicting information regarding cultural resources, practices, or beliefs.
J. An analysis of the potential effect of any proposed physical alteration on cultural	A thorough analysis is provided in **Section 7**.

resources, practices or beliefs; the potential of the proposed action to isolate cultural resources, practices or beliefs from their setting; and the potential of the proposed action to introduce elements which may alter the setting in which cultural practices take place.	
K. A bibliography of references and attached records of interviews which were allowed to be disclosed.	References are included in **Section 9**. Surveys are included in the appendices.

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Appendix I: Glossary of Hawaiian Terms

The following list of terms were used frequently throughout this report. All definitions were compiled using Pukui and Elbert's *Hawaiian Dictionary* (1986).

Ahupuaʻa	Land division usually extending from the uplands to the sea, so called because the boundary was marked by a heap (ahu) of stones surmounted by an image of a pig (puaʻa), or because a pig or other tribute was laid on the altar as tax to the chief.
ʻĀina	Land, earth. *Lit.* That which feeds.
Akua	1. God, goddess, spirit, ghost. 2. Divine, supernatural, godly.
Ala	Path, road, trail.
Aliʻi	1. Chief, chiefess, ruler, monarch. 2. Royal, regal. 3. To act as chief, reign.
ʻAumakua	Family or personal gods, deified ancestors who might assume the shape of sharks, owls, hawks, dogs, plants, etc. A symbiotic relationship existed; mortals did not harm or eat them, and the ʻaumakua warned or reprimanded mortals in dreams, visions, and calls.
ʻAumākua	Plural of ʻaumakua.
ʻAuwai	Irrigation ditch, canal, waterway.
Hālau	1. Long house, as for canoes or hula instruction; meeting house. 2. Large, numerous; much.
Hale pili	House thatched with pili grass.
Heiau	Pre-Christian place of worship, shrine. Some heiau were elaborately constructed stone platforms, other simple earth terraces.
Hoʻi	1. To leave, go or come back; to cause to come back. 2. To enter, as an institution or last resting place. 3. A parting chant to which hula dancers dance as they leave the audience. 4. Marriage of a chief with the daughter of a brother or sister; to do so (a means of increasing offspring).
Hula	A Hawaiian dance form accompanied by chant or song.
ʻIli	Land section, next in importance to ahupuaʻa and usually a subdivision of an ahupuaʻa.
ʻIli kū	Shorted form of ʻili kūpono.
ʻIli kūpono	A nearly independent ʻili land division within an ahupuaʻa, paying tribute to the ruling chief and not to the chief of the ahupuaʻa. Transfer of the ahupuaʻa from one chief to another did not include the ʻili kūpono located within its boundaries. Sometimes shorted to ʻili kū.

Kanaka	Human being, person, individual, party, humankind, population; often used for man.
Kānaka	Plural of kanaka.
Kāne	Male, husband, male sweetheart, man; brother-in-law of a woman.
Kanikau	1. Dirge, lamentation, chant of mourning, lament. 2. To chant, wail, mourn.
Kapu	1. Taboo, prohibition. 2. Special privilege or exemption from ordinary taboo. 3. Sacredness, prohibited, forbidden, sacred, holy, consecrated. 4. No trespassing, keep out.
Kuleana	Right, privilege, concern, responsibility, title, business, property, estate, portion, jurisdiction, authority, liability, interest, claim, ownership, tenure, affair, province.
Kupuna	Grandparent, ancestor, relative or close friend of the grandparent's generation, grandaunt, granduncle.
Kūpuna	Plural of kupuna.
Limu	A general name for all kinds of plants living under water, both fresh and salt, also algae growing in any damp place in the air, as on the ground, on rocks, and on other plants; also mosses, liverworts, lichens.
Loʻi	Irrigated terrace, especially for taro, but also for rice and paddy.
Loko iʻa	Traditional Hawaiian fishpond.
Makai	On the seaside, toward the sea, in the direction of the sea.
Mālama	To take care of, tend, attend, care for, preserve, protect, beware, save, maintain.
Mauka	Inland, upland, towards the mountain.
Mele	1. Song, anthem, or chant of any kind. 2. Poem, poetry. 3. To sing, chant.
Mele mākaʻikaʻi	Travel chant.
Mōʻī	King, sovereign, monarch, majesty, ruler, queen.
Moku	1. District, island, islet, section, forest, grove, clump, fragment. 2. To be cut, severed, amputated, broken in two.
Moʻo	Lizard, reptile of any kind, dragon, serpent.
Moʻolelo	Story, tale, myth, history, tradition, literature, legend, journal, log, yard, fable, essay, chronicle, record, article.
Moʻowahine	Female lizard deity.
Nīʻaupiʻo	Offspring of the marriage of a high-born brother and sister, or half-brother and half-sister.
ʻŌlelo noʻeau	Proverb, wise saying, traditional saying.
Oli	Chant that was not danced to, especially with prolonged phrases chanted in one breath, often with a trill at the end of each phrase; to chant thus.
Piʻo	Marriage of full brother and sister of nīʻaupiʻo rank, presumably the highest possible rank. Their offspring had the rank of naha, which is less

	than piʻo but probably more than nīʻaupiʻo. Later piʻo included marriage with half-sibling.
Pueo	Hawaiian short-eared owl (*Asio flammeus sandwichensis*), regarded often as a benevolent ʻaumakua.
ʻŪniki	Graduation exercises, as for hula, lua fighting, and other ancient arts (probably related to niki, to tie, as the knowledge was bound to the student).
Wahi pana	A legendary place; a place made special celebrated in stories associated with it. Often sacred.
Wahine	Woman, lady, wife; sister-in-law, female cousin-in-law of a man, female.
Wao	1. Realm. 2. A general term for inland region usually forested but not precipitous and often uninhabited.

Appendix E

Traffic Impact Analysis Report (by SSFM International)

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Waimanalo Health Center – Parcel 279

[TMK (1) 4-1-09:279]

Traffic Impact Analysis Report

Waimanalo, Island of Oahu

September 2022

Prepared for

Erskine Architects Inc.

Prepared by

SSFM INTERNATIONAL

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I. PROJECT DESCRIPTION

The Waimanalo Health Center (WHC) is a non-profit, Federally-Qualified Health Center that provides primary and preventative health services, focusing on Native Hawaiians and medically underserved populations. The WHC is located in Waimanalo on the windward side of the island of Oahu. Figure 1 shows the project location map. The State of Hawaii, Department of Land and Natural Resources (DLNR) owns land parcels 279 (TMK 4-1-09:279) and 282 (TMK 4-1-09:282) which the WHC facilities are located on (see Figure 2). "WHC West," located on "Parcel 279," has five existing buildings offering medical services, four of which are proposed for demolition and construction of a single replacement facility as a part of this project. "WHC East," located on Parcel 282, includes a newly constructed outpatient medical clinic that opened in May 2019. St. George Church and the Waimanalo Fire Station are located on parcels that separate WMC West and WMC East and are located across Kalanianaole Highway from Waimanalo Elementary and Intermediate Schools and the Waimanalo Library.

Figure 1. Project Location Map

Figure 2. WHC Parcel Maps

WHC West currently includes five separate buildings, totaling 17,698 square feet, that offer services including administration, open-air assembly space, dental, and WHC conferencing. The hours of operation are limited to weekdays from 8:00 AM to 5:00 PM (closed for lunch from 12:00 PM to 1:00 PM) and Saturdays (medical only) from 8:00 AM to 12:00 PM. Most staff and patients travel to and from WHC by passenger vehicle, with some reporting travel by the City and County of Honolulu (C&C) public bus (TheBus).

Access to WHC West is provided through a single bi-directional driveway off Kalanianaole Highway, hereinafter referred to as WHC West Driveway. The existing driveway and parking lot for WHC West will also be reconstructed as a part of the project. The project site plan shows the new building location and parking layout that includes 34 parking spaces, including three accessible stalls (see Figure 3). Traffic within the parking lot will operate in a one-way clockwise circulation so as to accommodate right turns into the driveway from SU-30 Single-Unit Trucks traveling westbound on Kalanianaole Highway. A detailed floor plan of the proposed WHC West building is shown in Figure 4.

This traffic impact analysis report (TIAR) was completed to assess the impacts of the proposed building demolition/reconstruction, parking lot, and driveway at WHC West on Parcel 279. Construction is scheduled to start in August of 2023 and scheduled to be completed by March 2024.

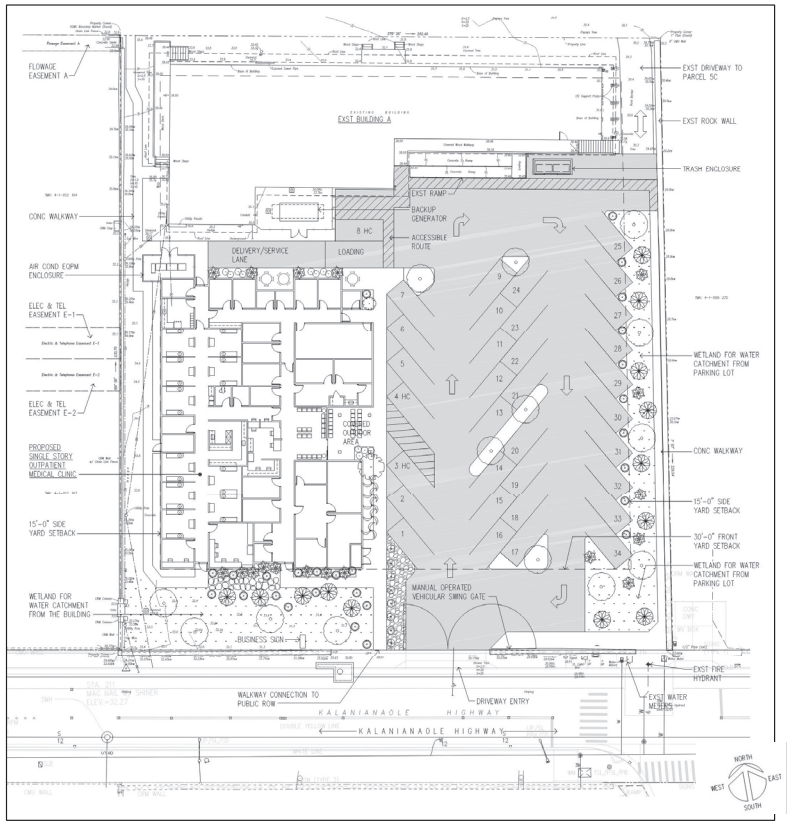

Figure 3. Project Site Plan

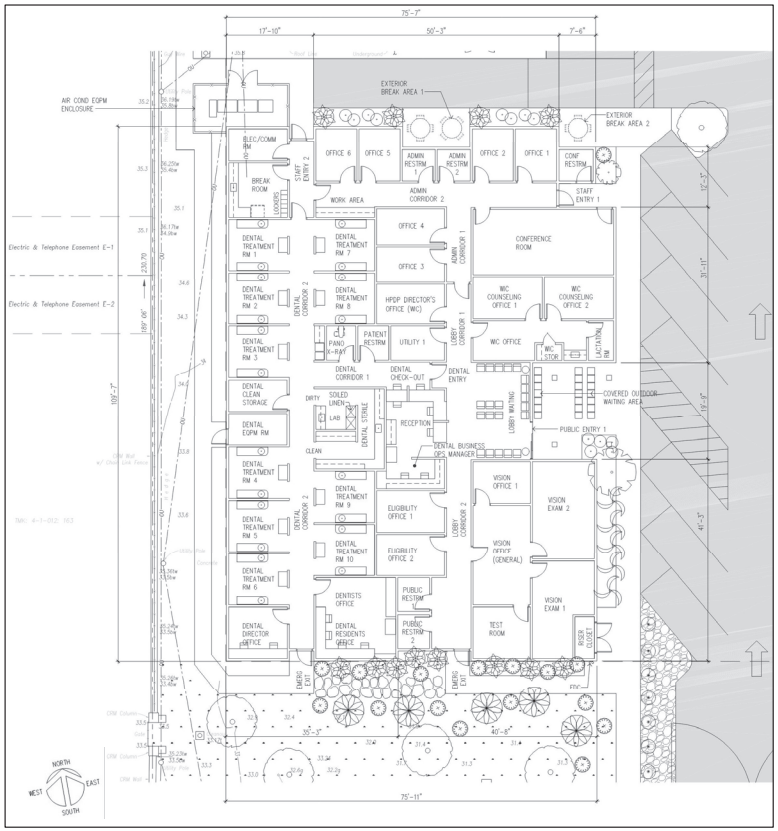

Figure 4. WHC West Building Floor Plan

II. EXISTING CONDITIONS

A. Geometric Configuration

1. Roadway Configuration

Kalanianaole Highway (State Highway Route 72) is classified as a principal arterial. Kalanianaole Highway provides the only highway connection between the residential communities of Kailua and Hawaii Kai. There are two signalized intersections at each end of the highway, which occur at Kailua Road (State Highway Route 61) near Adventist Health Castle Hospital, and at Ainakoa Avenue. At Ainakoa Avenue, Kalanianaole Highway transitions into Interstate H-1. The portion of Kalanianaole Highway in the study corridor is an undivided, two-lane roadway with 10.5-foot travel lanes, four to six-foot shoulders, and no dedicated turn lanes. The surrounding area is considered small, urbanized. The posted speed limit along Kalanianaole Highway adjacent to the project is 25 mph.

Since January 3, 2022, ongoing construction improvements have been underway along Kalanianaole Highway, as part of the Kalanianaole Highway Improvements, Phase 2 (Kal Hwy Improvements) including the installation of additional concrete sidewalks, curb and gutter, and curb ramps, as well as pavement resurfacing, and various pedestrian crossing modifications. Following reconstruction, Kalanianaole Highway will include 11-foot travel lanes, 5-foot shoulders, and 6-8 foot wide sidewalks on either side.

In the project area, there are two bus pullouts on the north side of Kalanianaole Highway, for westbound traveling buses, one fronting St. George Church, east of WHC West, and the other east of WHC East that includes a shelter. A bus stop with shelter exists for eastbound traveling buses, east of the entrance driveway for Waimanalo Elementary School. A second bus stop exists for eastbound traveling buses west of the intersection with Inoaole Street.

B. Study Intersections

As a part of this project, five study intersections were analyzed. The study intersection existing lane configurations are shown in Figure 5.

1. Kalanianaole Highway at Moole Street

Kalanianaole Highway at Moole Street is a four-leg, two-way stop-controlled (TWSC) intersection, with stop signs for the Moole Street approaches. Moole Street primarily serves residential traffic and has a curb-to-curb width of 28 feet. Marked crosswalks exist across Moole Street on either side of Kalanianaole Highway. A marked crosswalk with school crossing warning signs, and pedestrian-activated rectangular rapid flashing beacons (RRFBs), exists for the uncontrolled west leg approach along Kalanianaole Highway.

2. Kalanianaole Highway at WHC West Driveway

Kalanianaole Highway at WHC West Driveway is a three-leg intersection, TWSC, with a stop sign for the WHC West Driveway approach. This two-way driveway serves as the main access point to WHC West.

Proposed Kal Hwy Improvements include the relocation and reconstruction of the WHC West Driveway and the construction of raised concrete sidewalks on both sides of Kalanianaole Highway. There is a marked crosswalk with a pedestrian push-button activated traffic signal about 40-feet east of the driveway, for crossing Kalanianaole Highway.

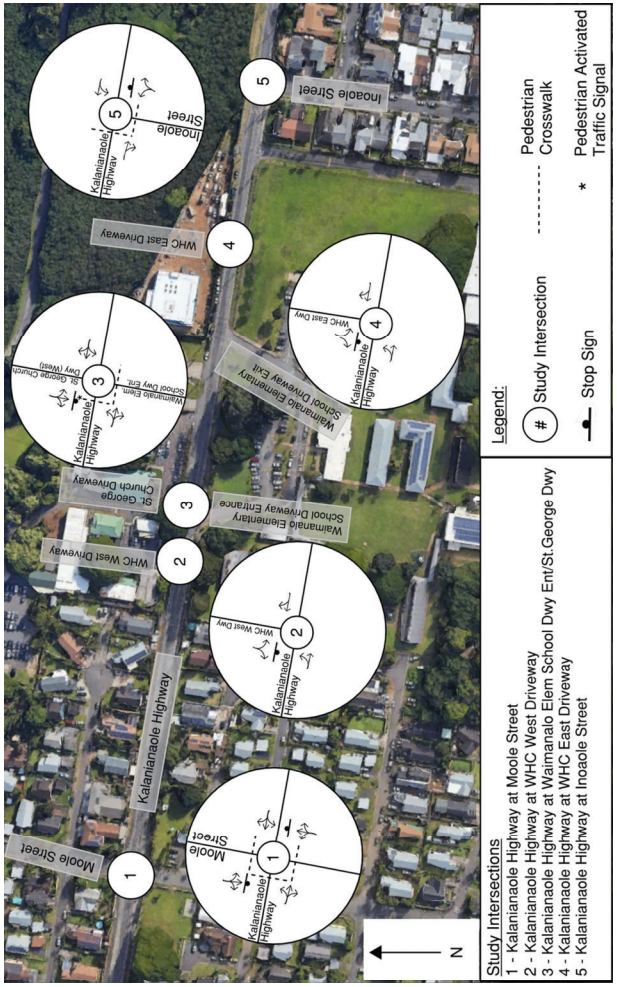

Figure 5. Existing Lane Configuration

3. Kalanianaole Highway at Waimanalo Elementary School Entrance/St. George Driveway

Kalanianaole Highway at Waimanalo Elementary School Driveway Entrance/St. George Church Driveway is a four-leg intersection. This intersection is a TWSC, with a stop sign exiting the St. George Church Driveway, offset slightly to the east of the Waimanalo Elementary School Entrance Driveway. The St. George Church office is open Tuesday to Friday from 9:00 AM to 12:00 PM. Additional church services are offered throughout the day, Monday through Sunday, at varying times.

The Waimanalo Elementary and Intermediate Schools and Waimanalo Library utilize the same driveway entrance. The driveway is a one-way, leading to a semi-circle parking lot that operates counterclockwise, with the egress located through a driveway further east. There is a marked crosswalk crossing the entrance driveway. The elementary school hours are from 7:45 AM to 2:05 PM on Monday, Tuesday, Thursday, and Friday; Wednesday hours are from 7:45 AM to 1:15 PM. The intermediate school hours are from 7:50 AM to 2:05 PM on Monday, Tuesday, Thursday, and Friday; Wednesday hours are from 7:50 AM to 1:15 PM. The Waimanalo Library operating hours are 9:00 AM to 12:00 PM and 1:00 PM to 4:00 PM on Tuesday, Wednesday, Thursday, and Saturday; and Friday from 12:00 PM to 4:00 PM.

Proposed Kal Hwy Improvements at the intersection include the construction of raised concrete sidewalks on both sides of the roadway. On the west leg, adjacent to the school driveway entrance, a crosswalk with a pedestrian-activated traffic signal exists. There are pedestrian push-buttons on either side of Kalanianaole Highway with no existing vehicle traffic signal heads for the minor approaches. Therefore, this traffic signal functions as a mid-block traffic signal by only providing control for vehicles traveling along Kalanianaole Highway and crossing pedestrians. Bus stops are located approximately 50-feet east of St. George Church Driveway and Waimanalo Elementary School driveway on either side of Kalanianaole Highway.

4. Kalanianaole Highway at WHC East Driveway

Kalanianaole Highway at WHC East Driveway is a three-legged intersection operating under TWSC, with a stop sign at the WHC East Driveway.

Proposed Kal Hwy Improvements at the intersection include the construction of raised concrete sidewalks on both sides of the roadway. There are no marked crosswalks or curb ramps in the vicinity of the intersection.

5. Kalanianaole Highway at Inoaole Street

Kalanianaole Highway at Inoaole Street is a three-leg intersection operating under TWSC, with a stop sign on Inoaole Street. Inoaole Street, which primarily serves residential traffic, is 40-foot-wide curb-to-curb roadway. Street parking is available along Inoaole Street, with the posted speed limit of 25 mph. There are raised sidewalks along the southern side of Kalanianaole Highway and on both sides of Inoaole Street. Additionally, there are marked crosswalks on the west and south legs of the intersection, with curb ramps on either side of Inoaole Street and the southern side of the west leg.

Proposed Kal Hwy Improvements at the intersection include the construction of a raised concrete sidewalk on the north side of Kalanianaole Highway, on either side of Inoaole Street. New curb ramps and a marked crosswalk will also be included.

C. Vehicle Volumes

1. 24-Hour Volume

Hawaii Department of Transportation (HDOT) historical volume counts between 2015 and 2020 were available at the Waimanalo Stream Bridge, located west of the project, and at the Inoaole Stream Bridge, located east of the project, along Kalanianaole Highway. On Thursday, January 20, 2022, tube counts were collected over 24-hours at the same locations. The historical HDOT and recent 2022 Average Daily Traffic (ADT) counts are shown in Tables 1 and 2. The annual growth rate was calculated from 2015 to 2022. The historical HDOT traffic counts and the 2022 24-hour count are included in Appendix A.

Traffic volumes at the Waimanalo Bridge shows significant fluctuations in results over the years, including those recently taken in 2022 which were significantly greater than the prior four years. It is noted that the Kal Hwy Improvements project had begun construction before the 2022 traffic counts were taken, potentially impacting traffic volumes in the area. Additional, construction on the Pali Highway has been ongoing and may have affected traffic patterns between Windward Oahu and Honolulu. However, the exact reason for the significant increase in traffic volume in 2022 was not determined. Although the 2020 data is shown in Tables 1 and 2, because of the impacts of Covid-19 on traffic volumes, it was not included in the growth rate calculation. Discussion of the pandemic impacts will be analyzed in a later section.

Table 1. Kalanianaole Highway Average Daily Traffic at Waimanalo Stream Bridge (West of Project)

Roadway	Station	Location	Year	AADT	Annual Growth Rate
Kalanianaole Highway	B72 0072 00251	Waimanalo Stream Bridge	2015	17,400	1.28%
			2017	10,200	
			2018	11,100	
			2019	12,000	
			2020	15,300	
			2022*	19,023	

* 2022 is a 24-Hour Count; not AADT; Source: *Historical Traffic Station Maps (HDOT)*

Table 2. Kalanianaole Highway Average Daily Traffic at Inoaole Stream Bridge (East of Project)

Roadway	Station	Location	Year	ADT	Annual Growth Rate
Kalanianaole Highway	B72 0072 00388	Inoaole Stream Bridge	2015	14,000	0.94%
			2016	14,700	
			2017	13,900	
			2018	14,100	
			2019	15,200	
			2020	11,100	
			2022*	14,948	

* 2022 is a 24-Hour Count (not AADT); Source: *Historical Traffic Station Maps (HDOT)*

Figure 6 shows the 2022 hourly volumes at the Inoaole Bridge location and Figure 7 shows the 24-hour 2019 HDOT volume compared to the 2022 24-hour volume on Kalanianaole Highway at Inoaole Stream Bridge. The Historic HDOT volumes and 2022 volumes show that the westbound vehicular volumes are higher in the AM peak hour, while the eastbound vehicular volumes are higher in the PM peak hour.

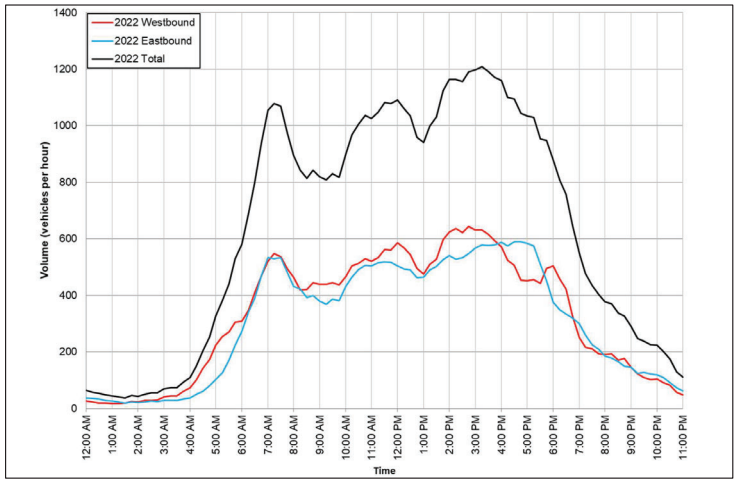

Figure 6. 2022 Eastbound & Westbound 24-Hour Volumes - Kalanianaole Highway at Inoaole Stream Bridge

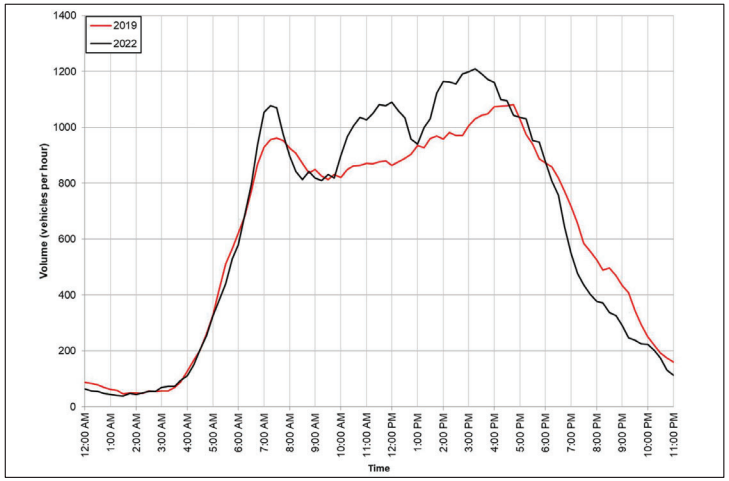

Figure 7. 24-Hour Volume Distribution on Kalanianaole Highway at Inoaole Stream Bridge

a) Covid-19 Traffic Impacts

The Covid-19 pandemic led to a mandatory 14-day quarantine for any incoming travelers and the closure of non-essential businesses in the State of Hawaii beginning in March 2020. This ultimately alleviated much of the roadway traffic, primarily essential workers. Schools were also closed during this time, making learning necessary to become virtual at-home learning. Near the end of 2020, businesses began reopening, and non-essential employees started going back to work as Covid-19 restrictions were lifted. Additionally, tourism slowly began to return to Hawaii. Furthermore, at the beginning of the 2021-2022 school year, Hawaii public schools reinstated in-person learning.

Since the 2022 count was higher than the historic counts, the 2022 data can be assumed to represent typical travel patterns (or worse/higher), and therefore, no Covid-related adjustments were made.

2. Intersection Peak Turning Movement Counts

Turning movement counts were taken at the five study intersections on Thursday, January 13, 2022, from 7:00 to 11:00 AM and from 2:00 to 6:00 PM. The traffic counts included separate tallies of passenger vehicles, heavy vehicles (buses, trucks, vehicles with trailers), bicycles, and pedestrians. The AM and PM peak hours occurred between 7:25 AM to 8:25 AM and 2:05 to 3:05 PM, respectively.

The adjacent schools were in session at the time the counts were taken. In addition to passenger vehicles, two school buses drop off and pick up students through the semi-circle driveway. The morning peak hour overlaps with the start of school, although the afternoon peak hour falls after the end of the regular school hours. Figure 8 shows the AM and PM peak hour volumes at the five study intersections. Appendix B includes traffic count data at the study intersections.

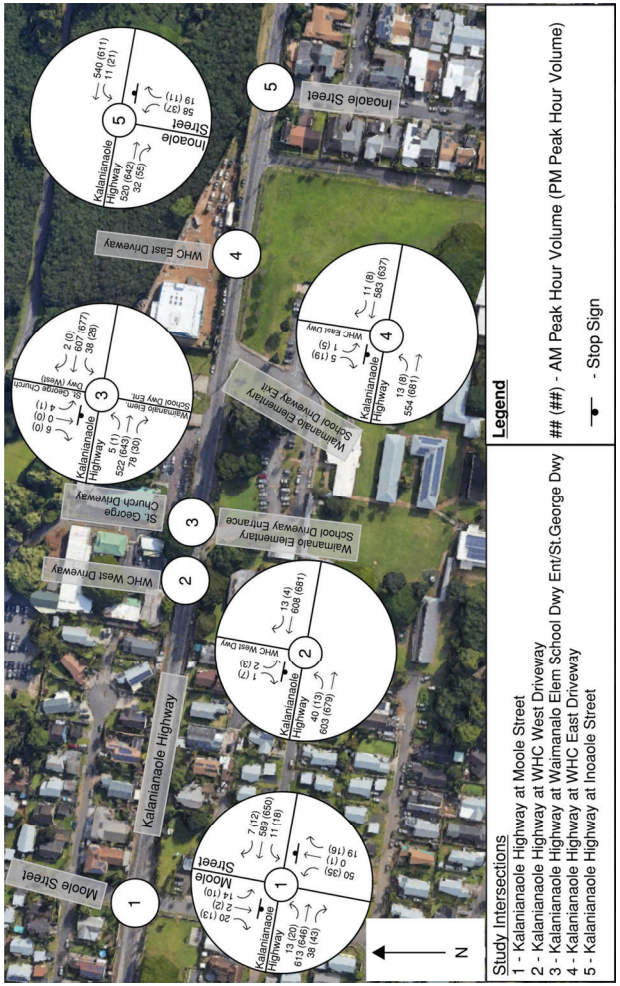

Figure 8. 2022 Peak Hour Volumes

3. Transit Facilities

The City and County of Honolulu bus transit service, TheBus, runs several routes, Route 67, Route 69, and Route 89, along the Kalanianaole Highway project area. There are six bus stops along Kalanianaole Highway in the study area:

- Bus Stop ID 1150 – Kalanianaole Highway + Moole Street (eastbound)
- Bus Stop ID 1151 – Kalanianaole Highway + Waimanalo Intermediate School (eastbound)
- Bus Stop ID 1152 – Kalanianaole Highway + Inoaole Street (eastbound)
- Bus Stop ID 1244 – Kalanianaole Highway + OPP Inoaole Street (westbound)
- Bus Stop ID 1245 – Kalanianaole Highway + OPP Waimanalo Intermediate School (westbound)
- Bus Stop ID 1246 – Kalanianaole Highway + Moole Street (westbound)

The closest stops to the project are approximately 140-feet east of the project driveway (Bus Stop IDs 1151 and 1245), fronting St. George Church and Waimanalo Elementary and Intermediate Schools and the Library.

Route 67, "Honolulu – Kailua – Waimanalo", runs via the Pali Highway to Kailua/Waimanalo and town bound to Ala Moana Center. The Kailua bound runs from 4:45 AM to 12:01 AM, with stops at Alakea & King twice an hour between 4:45 AM to 3:38 PM. The westbound Nakini & Ala Koa stop is serviced inconsistently between 5:33 PM and 12:01 AM. The town bound bus runs from 4:46 AM to 11:39 PM, with stops at Kalanianaole & Nalu 4 times between 6:00-7:00 AM, once an hour from 7:04-10; 19 PM, and twice an hour during other operational hours.

Route 69, Kaneohe – Waimanalo – Sea Life Park, runs westbound to Kaneohe and eastbound to Sea Life Park. The westbound bus runs from 6:30 AM to 10:10 PM during the weekday, stopping twice an hour between 2:00-4:00 PM and once an hour during other operational hours. The eastbound bus runs from 6:08 AM to 10:14 PM daily, with two stops at Kawa Mehana Mauka before 7:00 AM and a stop once an hour between 7:38 AM to 9:38 PM.

Route 89, Waimanalo Express, makes one roundtrip on the weekdays (including state holidays) from Waimanalo to Downtown Honolulu (Downtown Express) between 5:40 AM to 6:30 AM and from Downtown Honolulu to Waimanalo (Waimanalo Express) between 4:45 PM to 5:50 PM.

TheBus volumes along Kalanianaole Highway during the peak hours are shown in Table 3. See Figure 9 for The Bus Route stops near the project area. Appendix C includes the detailed bus route schedules for the routes that transverse through the corridor.

Table 3. TheBus Peak Hour Volumes on Kalanianaole Highway near Project

Roadway	Direction	AM	PM
Kalanianaole Highway	Eastbound	3	2
	Westbound	3	2

Figure 9. Bus Route Impact to Project Area

4. Pedestrian and Bicycle Volumes

Peak hour intersection pedestrian and bicycle volumes were taken at the existing study intersections on Thursday, January 13, 2022, from 7:00 AM to 11:00 AM and from 2:00 PM to 6:00 PM. Pedestrian counts include pedestrians crossing side-streets and driveways along Kalanianaole Highway as well as those that cross Kalanianaole Highway. The Kalanianaole Highway and WHC West intersection having the highest number of pedestrian volumes in the AM peak hour. The overall pedestrian crossing count was the highest in the PM peak at Moole Street. Likewise, bicycle volumes are generally higher in the AM peak hours at all study intersections, with the Kalanianaole Highway and Moole Street intersection having the highest bicycle count. Table 4 summarizes the pedestrian and bicycle counts during the peak hours.

Table 4. Peak Hour Pedestrian and Bicycle Volumes

Intersection	Pedestrian		Bicycle	
	AM Peak	PM Peak	AM Peak	PM Peak
Kalanianaole Hwy & Moole St.	9	25	8	2
Kalanianaole Hwy & WHC West Dwy.	19	17	5	1
Kalanianaole Hwy & Waimanalo Elem Dwy. Ent/St. George Dwy.	15	10	6	2
Kalanianaole Hwy & WHC East Dwy.	14	9	3	0
Kalanianaole Hwy & Inoaole St.	2	3	2	1

D. Existing Level of Service

1. Methodology

Level of service (LOS) is a rating system used in traffic engineering to measure the effectiveness of roadway operating conditions. There are six LOS ratings, ranging from A to F. LOS A is defined as being the least interrupted flow conditions with little or no delays, whereas LOS F is defined as conditions where extreme

delays exist. Guidelines state that LOS D or better is an appropriate rating for studying intersections and movements. Intersection LOS and delay were determined for the AM and PM peak hours using Synchro Version 10.0 traffic analysis software.

As stated in the Highway Capacity Manual 6th Edition (*HCM6*) (TRB, 2016), LOS at a TWSC intersection is determined by the measured control delay (see Table 5). Delay at a TWSC intersection is defined by each minor movement and not by the major movements of the intersection. The delay is determined by vehicles traveling along the major, free-flow road of a TWSC intersection proceeding through with minimal delay. The vehicles approaching the intersection along the minor movement (side-street) are controlled by a stop sign and thus experience delay attributable to the volume of vehicles passing along the free-flow road and the gaps available.

Table 5. LOS Criteria for Unsignalized Intersections

Average Control Delay (s/veh)	LOS by v/c Ratio	
	<=1.0	>1.0
≤ 10.0	A	F
>10 and ≤15	B	F
>15 and ≤25	C	F
>25 and ≤35	D	F
>35 and ≤50	E	F
>50	F	F

Source: *HCM6* (TRB, 2016)

The average total vehicle delay determines the LOS analysis for signalized intersections based on the methodologies of the *HCM6* (TRB, 2016), shown in Table 6. High numbers of vehicles passing through the intersection, long cycle lengths, inappropriate signal phasing, or poor signal progression can result in long delays and poor LOS.

Table 6. LOS Criteria for Signalized Intersections

Average Control Delay (s/veh)	LOS by v/c Ratio	
	<=1.0	>1.0
≤ 10.0	A	F
> 10 and ≤ 20	B	F
> 20 and ≤ 35	C	F
> 35 and ≤ 55	D	F
> 55 and ≤ 80	E	F
> 80	F	F

Source: *HCM6* (TRB, 2016)

Another measure of intersection operation is the volume to capacity (v/c) ratio. The v/c ratio compares the traffic volume utilizing the intersection to the maximum volume of vehicles that the intersection can accommodate during a specific period. A v/c ratio under 0.85 means the intersection is operating under capacity, and excessive delays are not experienced. An intersection operates near its capacity when v/c ratios range from 0.85 to 0.95. Unstable flows are expected when the v/c ratio is between 0.95 and 1.0. Any v/c ratio greater or equal to 1.0 indicates that the intersection is operating at or above capacity, resulting in LOS F per the *HCM* (TRB, 2016). A traffic movement can have a poor LOS but low v/c, which suggests that

the traffic volumes along that movement are low but have to wait a long time to make the intended movement. Poor LOS and low v/c are common for low-volume protected turn movements or side streets that wait through a long cycle length for their phase to come up.

2. Existing Intersections LOS Results

Existing intersection movements LOS, delay (in seconds per vehicle), and v/c were determined for the AM and PM peak hours using Synchro 10 traffic analysis software. The results are shown in Table 7, and Synchro reports in Appendix D. Movements that operate at a LOS E or worse are highlighted in yellow.

Table 7. Existing (2022) LOS

Intersection Movements	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Kalanianaole Hwy. at Moole St.	**Unsignalized (TWSC)**			**Unsignalized (TWSC)**		
Kalanianaole EB Approach	9.1	0.017	A	9.2	0.025	A
Kalanianaole WB Approach	9.4	0.016	A	9.3	0.023	A
Moole NB Approach	100.1	0.747	F	63.4	0.491	F
Moole SB Approach	36.9	0.276	E	34.0	0.180	D
Kalanianaole Hwy. at WHC West Dwy.	**Unsignalized (TWSC)**			**Unsignalized (TWSC)**		
Kalanianaole EB Approach	9.3	0.052	A	9.9	0.004	A
WHC West SB Approach	28.0	0.022	D	20.2	0.044	C
Kalanianaole Hwy. at Waimanalo Elementary Dwy./St. George Dwy.	**Unsignalized (TWSC)**			**Unsignalized (TWSC)**		
Kalanianaole EB Approach	9.1	0.007	A	11.6	0.002	B
Kalanianaole WB Approach	9.3	0.051	A	9.3	0.035	A
St. George SB Approach	22.2	0.053	C	55.1	0.015	F
Kalanianaole Hwy. at WHC East Dwy.	**Unsignalized (TWSC)**			**Unsignalized (TWSC)**		
Kalanianaole EB Approach	9.0	0.016	A	9.0	0.009	A
WHC East SB Approach	15.8	0.020	C	17.5	0.082	C
Kalanianaole Hwy. at Inoaole St.	**Unsignalized (TWSC)**			**Unsignalized (TWSC)**		
Kalanianaole WB Approach	8.9	0.013	A	9.4	0.027	A
Inoaole NB Approach	30.5	0.383	D	35.8	0.311	E

a) Kalanianaole Highway at Moole Street

At Kalanianaole Highway and Moole Street, the northbound approach to the intersection operates at a LOS F during both peak hours with v/c of 0.747 in the AM and 0.491 in the PM. The southbound approach operates at a LOS E with a v/c of 0.276 in the AM peak and a LOS D in the PM peak. The eastbound and westbound approaches operate at LOS A in peak AM and PM hours.

b) Kalanianaole Highway at WHC West Driveway

All movements at the intersection operate at a LOS D or better and v/c<1.0 during both peak hours at WHC West Driveway and Kalanianaole Highway.

c) Kalanianaole Highway at Waimanalo Elem. Driveway Entrance/St. George Church Driveway

At Kalanianaole Highway and the Waimanalo Elementary Driveway Entrance/St. George Church Driveway, all movements operate at a LOS C or better and v/c<1.0 during AM peak hour. During the PM peak hour, the southbound approach operates at a LOS F with a v/c of 0.015, while the other intersection movements operate at a LOS B or better.

d) Kalanianaole Highway at WHC East Driveway

All movements at the intersection operate at LOS C or better and v/c<1.0 during both peak hours at WHC East Driveway and Kalanianaole Highway.

e) Kalanianaole Highway at Inoaole Street

All movements operate at the intersection of Inoaole Street and Kalanianaole Highway at a LOS D or better and v/c<1.0 during AM peak hour. During the PM peak hour, the northbound approach operates at LOS E with v/c of 0.311, while the other intersection movements operate at LOS A.

3. Mitigation Existing (2022) Condition

Traffic signal warrants were analyzed for intersections that had movements that operate at LOS E or worse. The signalization of a TWSC intersection can allow motorists approaching from minor streets to more easily cross during times of heavy cross-traffic as well as allow for pedestrians to have a signal. Ultimately reducing delay on the minor streets will add delay to vehicles traveling along the major street that otherwise would not exist in a TWSC intersection.

a) Traffic Signal Warrant Methodology

Per standard traffic engineering practice, before the signalization of an intersection, an engineering study of traffic conditions, pedestrian characteristics, and physical characteristics of the location shall be performed to determine whether the installation of the traffic signal is justified.

The *Manual on Uniform Traffic Control Devices for Streets and Highways (MUTCD)* (FHWA, 2009) lists eight warrants for consideration of providing a traffic signal at an intersection. Vehicular volumes are the primary factor considered during future planning purposes. Therefore, eight-hour, four-hour, and peak-hour traffic signal warrants were evaluated with the traffic volume data available. The Waimanalo Census – Designated Place (CDP) listed the population as less than 10,000 in 2010. A 70% volume factor is appropriate for the signal warrant analysis due to the population of the area, according to the MUTCD. For minor-street approaches with one lane, 60 vehicles per hour is the lower threshold for considering a four-hour traffic signal warrant. In comparison, 75 vehicles per hour are the lower threshold for considering a peak hour traffic signal warrant.

The eight-hour, four-hour, and peak-hour traffic signal warrants for the unsignalized study intersections did not pass for all intersections (see Table 8). Appendix D includes the details of the traffic signal warrant analysis.

Table 8. Existing (2022) Intersection Traffic Signal Warrant

Unsignalized Intersection	Satisfy Traffic Signal Warrant?			
	Peak Hour	Eight Hour	Four Hour	Result
Kalanianaole Hwy. at Moole St.	No	No	No	No
Kalanianaole Hwy. at Waimanalo Elementary Dwy. Entrance/St. George Church Dwy.	No	No	No	No
Kalanianaole Hwy. at Inoaole St.	No	No	No	No

Per the *Waimanalo Health Center Expansion TIAR* (SSFM, 2013) on WHC East, it was noted that historically the community has preferred to retain a rural feel along Kalanianaole Highway and not include additional turn lanes or traffic signals. To mitigate delay, it is common for drivers along Kalanianaole Highway to slow down to allow vehicles to turn in front of them that otherwise would have had to wait for an appropriate gap in traffic. With Kal Hwy Improvements proceeding without the addition of new turn lanes at these locations, it is not expected that turn lanes would be a desired mitigation.

In addition to the unsignalized intersections not passing the traffic signal warrants, the v/c is generally low for the movements with poor LOSs, which suggests the movements have additional capacity. It is common for the minor approaches with a stop sign intersecting a high-volume road to have an increased delay during peak hours. However, this is not necessarily a cause for needed mitigation since this problem is not typically prevalent during off-peak hours.

III. FUTURE WITHOUT PROJECT CONDITIONS

Construction for WHC West is scheduled to be completed by March 2024. Therefore, Future (2024) conditions with and without project will be analyzed.

A. Upcoming Planned Projects

1. STIP

Information on future projects was compiled on June 1, 2022, using the *Statewide Transportation Improvements Program* (STIP) FY 2019-2022 website. The STIP is a four-year forecast identifying state and county transportation projects funded with Federal Highway and Federal Transit funds.

- Kalanianaole Highway (Route 72) Improvements, Olomana Golf Course to Vicinity of Makai Pier (Phase 1 & 2)
    - Improvements include road resurfacing, pavement reconstruction, upgrading existing guardrails, curbs, gutters, sidewalks, bus pullouts, walkway resurfacing, pavement marking and signage, drainage, and other improvements. Phase II of the project started on January 3, 2022, impacting the study area with improvements to the sidewalks. The improvement project is anticipated to be completed in the Fall of 2022. Improvements made in the study area were discussed in Section II.B, Study Intersections. Traffic volumes are not expected to change post-construction as no vehicular capacity improvements are being added.

2. ERP

Information on future projects was compiled on June 1, 2022, using the State of Hawaii *Environmental Review Program* (ERP) website. The ERP website provides Environmental Impact Statement (EIS) and Environmental Assessments (EA) available to the public. Projects from the ERP website in the surrounding area from 2016 to 2021 were reviewed. There were no projects listed that impacted the project area.

3. 2019 Oahu Bike Plan (City DTS, December 2019)

The *2019 Oahu Bike Plan* proposes a 2.22-mile shoulder bikeway (Priority 2 Project: Kalanianaole 2-72) from Flamingo Street to Wailea Street. Priority 2 projects will be implemented after Priority 1 projects are completed. Priority 1 projects are expected to be completed within 5 years from the publication of the *2019 Oahu Bike Plan*, and therefore this project is not considered to be included as a part of the future conditions.

B. Volumes

1. Background Growth

Table 1 shows a 1.28% annual growth rate at the Waimanalo Bridge HDOT Station from 2015-2022. Table 2 shows a 0.94% annual growth rate at the Inoaole Bridge HDOT Station from 2015-2022.The *Waimanalo Health Center Expansion TIAR* (SSFM, 2013) used a 1.2% annual growth rate based on the assumptions discussed in the *Waimanalo Bay Beach Park Master Plan TIAR* (C&C, 2011).

A 1.2% annual growth rate was calculated at the Waimanalo Bridge HDOT Station and projected as a part of other reports in the area and thus is considered representative of anticipated growth in the area. Therefore, this growth rate was applied to the through traffic along Kalanianaole Highway to adjust for future background growth. Other projects not identified in the STIP and ERP are assumed to be included in the 1.2% annual growth rate.

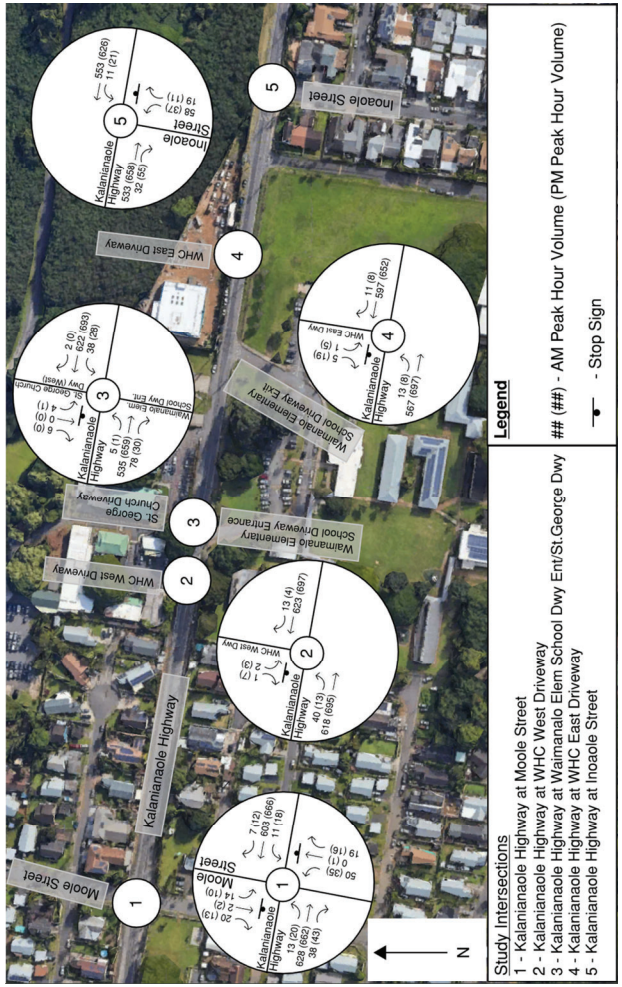

Figure 10. Future (2024) Without Project Peak Hour Volume

C. Future Without Project Level of Service

1. Future (2024) Without Project Conditions

The Future (2024) Without Project volume is shown in Figure 10 with a 1.2% annual growth rate from 2022.

The Future (2024) Without Project intersection movements LOS, delay (in seconds per vehicle), and v/c were determined for the AM and PM peak hours using Synchro 10 traffic analysis software. The results are shown in Table 9, and Synchro reports are in Appendix E. Movements that operate at a LOS E or worse or v/c>1.0 are highlighted in yellow.

Table 9. Future (2024) Without Project LOS

Intersection Movements	AM Peak			PM Peak		
	Delay (sec/veh)	v/c	LOS	Delay (sec/veh)	v/c	LOS
Kalanianaole Hwy. at Moole St.	**Unsignalized (TWSC)**			**Unsignalized (TWSC)**		
Kalanianaole EB Approach	9.2	0.018	A	9.2	0.025	A
Kalanianaole WB Approach	9.5	0.016	A	9.4	0.023	A
Moole NB Approach	110.6	0.782	F	70.2	0.523	F
Moole SB Approach	39.3	0.292	E	35.7	0.189	E
Kalanianaole Hwy. at WHC West Dwy.	**Unsignalized (TWSC)**			**Unsignalized (TWSC)**		
Kalanianaole EB Approach	9.3	0.053	A	10.0	0.005	B
WHC West SB Approach	29.1	0.023	D	20.7	0.046	C
Kalanianaole Hwy. at Waimanalo Elementary Dwy./St. George Dwy	**Unsignalized (TWSC)**			**Unsignalized (TWSC)**		
Kalanianaole EB Approach	9.1	0.007	A	11.7	0.002	B
Kalanianaole WB Approach	9.4	0.052	A	9.3	0.036	A
St. George SB Approach	23.0	0.055	C	58.8	0.016	F
Kalanianaole Hwy. at WHC East Dwy.	**Unsignalized (TWSC)**			**Unsignalized (TWSC)**		
Kalanianaole EB Approach	9.0	0.016	A	9.0	0.010	A
WHC East SB Approach	16.1	0.021	C	18.0	0.085	C
Kalanianaole Hwy. at Inoaole St.	**Unsignalized (TWSC)**			**Unsignalized (TWSC)**		
Kalanianaole WB Approach	9.0	0.014	A	9.4	0.027	A
Inoaole NB Approach	32.0	0.397	D	38.0	0.326	E

The northbound approach along Moole Street at Kalanianaole Highway operates at a LOS F (v/c of 0.782 and 0.523) during the AM and PM peak hours. Also, the southbound approaches operate at a LOS E (v/c of 0.292 and 0.189) during the AM and PM peak hours, respectively. The southbound approach from St. George Church to Kalanianaole Highway operates at a LOS F (v/c of 0.016) in the PM peak hour. The northbound approach from Inoaole Street to Kalanianaole Highway operates at a LOS E (v/c of 0.326) in the PM peak hour.

a) Mitigation Future (2024) Without Project

The Future (2024) Without Project will experience poor LOS and low v/c at the various movements. Although it is common for the minor approach to a stop sign-controlled intersection with a high-volume road to have an increased delay during the peak hours, the low v/c suggests that the movements have capacity. The volume from the minor street approaches did not increase, and (2024) Future Without Project traffic

volumes will not satisfy the traffic signal warrants. Consequently, traffic signals are not recommended for Future (2024) Without Project conditions.

IV. FUTURE WITH PROJECT CONDITIONS

WHC West currently offers medical services in five buildings, totaling 18,000 sf GFA, four of which are proposed for demolition as a part of this project. This project also proposes the construction of a single replacement facility which will result in a total 17,050 sf GFA, 950 sf GFA less than exists. The overall WHC services provided to the public are not expected to change significantly after the completion of the project in March 2024. Some services from WHC West will be provided at WHC East during construction.

A. Future With Project Generated Volumes

1. Project Related Volumes

The overall floor area will slightly decrease. However, the WHC West and WHC East uses are expected to be similar to their existing uses. No additional trips are anticipated with the completion and opening of the project. Future trips were assumed to be captured in the existing traffic count. The standard traffic methodology of analyzing the trip generation, trip distribution, trip assignment, and modal choice was not done.

2. Future With Project Peak Hour Volumes

Future with Project traffic volumes will be similar to Future Without Project traffic volumes.

B. Future With Project Level of Service

1. Future (2024) With Project Conditions

Future (2024) With Project intersection movements LOS, delay (in seconds per vehicle), and v/c are expected to be similar to the Future (2024) Without Project condition. No mitigation is recommended for Future (2024) With Project conditions.

V. SUMMARY AND RECOMMENDATIONS

WHC West currently offers medical services in five buildings, totaling 18,000 sf GFA, four of which are proposed for demolition as a part of this project. This project also proposes the construction of a single replacement facility which will result in a total 17,050 sf GFA, 950 sf GFA less than exists. In addition, the existing driveway access to the WHC campus will be reconstructed and a parking lot with up to 34 parking stalls with one-way clockwise circulation will be built. Construction is expected to be completed by March 2024.

Post-construction, the overall WHC services provided to the public is expected to remain similar to existing conditions. It is therefore assumed that the future projected traffic volumes accessing WHC West and WHC East are captured by the existing traffic volumes.

Based on the existing and future traffic analysis, the project driveway and the other minor street approaches within the study corridor will operate at poor LOS during the peak hours with relatively low v/c. None of the unsignalized intersections passed the 8-Hour, 4-Hour and Peak Hour traffic signal warrant for the existing conditions, and the peak hour warrant for the Future (2024) conditions. No mitigations are recommended for the study intersections. Intersection operations should be monitored, and improvements made if necessary.

In conclusion, the new facility and site improvements will have little impact on traffic delays along Kalanianaole Highway. At the intersection of the project driveway, the two-way driveway will work acceptably.

VI. REFERENCES

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APPENDIX A

Historical HDOT & 24-Hour Counts

Station East of Inoaole Stream Bridge

Historical HDOT & 24-Hour Counts

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200388
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location:

Town: Oahu
Count Type: CLASS
DATE: 02-OCT-18

DIR 1: +MP
Counter Type: Tube

DIR 2: -MP

Final AADT: 14100
Route No: 72

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	458	486	944
AM - K FACTOR(%)			6.64
AM - D(%)	48.52	51.48	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	478	496	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:30 PM to 5:30 PM		
PM - PEAK HR VOLUME	599	501	1,100
PM - K FACTOR(%)			7.74
PM -D(%)	54.45	45.55	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:30 PM to 5:30 PM	3:15 PM to 4:15 PM	
PM - PEAK HR VOLUME	599	503	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 AM to 08:15 AM		
AM - PEAK HR VOLUME	458	478	944
AM - K FACTOR(%)			6.64
AM - D(%)	48.52	51.48	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:30 PM to 5:30 PM		
PM - PEAK HR VOLUME	599	599	1,100
PM - K FACTOR(%)			7.74
PM -D(%)	54.45	45.55	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	1:45 PM to 2:45 PM		
PEAK HR VOLUME	425	495	920
DIRECTIONAL PEAK			
PEAK HR TIME	2:00 PM to 3:00 PM	1:30 PM to 2:30 PM	
PEAK HR VOLUME	438	516	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	2,275	2,697	4,972
AM 12-HR PERIOD (00:00-12:00)	2,541	3,134	5,675
PM 6-HR PERIOD (12:00-18:00)	2,839	2,890	5,729
PM 12-HR PERIOD (12:00-24:00)	4,393	4,148	8,541
24-HR PERIOD (12:00-24:00)	6,934	7,282	14,216
D%	48.78	51.22	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	10	12	22

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	51	90	141

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	99	116	215

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	113	108	221

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

12:15 - 12:30	13	6	19
12:30 - 12:45	18	10	28
12:45 - 01:00	10	10	20
01:00 - 01:15	8	6	14
01:15 - 01:30	9	8	17
01:30 - 01:45	3	4	7
01:45 - 02:00	5	5	10
02:00 - 02:15	6	6	12
02:15 - 02:30	3	5	8
02:30 - 02:45	11	8	19
02:45 - 03:00	7	6	13
03:00 - 03:15	3	6	9
03:15 - 03:30	5	9	14
03:30 - 03:45	6	4	10

06:15 - 06:30	62	78	140
06:30 - 06:45	43	110	153
06:45 - 07:00	90	85	175
07:00 - 07:15	81	120	201
07:15 - 07:30	89	149	238
07:30 - 07:45	116	118	234
07:45 - 08:00	128	109	237
08:00 - 08:15	125	110	235
08:15 - 08:30	109	128	237
08:30 - 08:45	95	130	225
08:45 - 09:00	108	89	197
09:00 - 09:15	117	101	218
09:15 - 09:30	101	117	218
09:30 - 09:45	89	112	201

12:15 - 12:30	83	124	207
12:30 - 12:45	119	107	226
12:45 - 01:00	87	102	189
01:00 - 01:15	105	124	229
01:15 - 01:30	95	124	219
01:30 - 01:45	103	135	238
01:45 - 02:00	92	121	213
02:00 - 02:15	74	130	204
02:15 - 02:30	132	130	262
02:30 - 02:45	127	114	241
02:45 - 03:00	105	107	212
03:00 - 03:15	98	121	219
03:15 - 03:30	148	120	268
03:30 - 03:45	134	127	261

06:15 - 06:30	151	78	229
06:30 - 06:45	122	77	199
06:45 - 07:00	112	107	219
07:00 - 07:15	103	84	187
07:15 - 07:30	105	86	191
07:30 - 07:45	79	78	157
07:45 - 08:00	80	77	157
08:00 - 08:15	74	67	141
08:15 - 08:30	71	50	121
08:30 - 08:45	52	60	112
08:45 - 09:00	68	54	122
09:00 - 09:15	65	43	108
09:15 - 09:30	64	45	109
09:30 - 09:45	53	39	92

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200388
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location:

Town: Oahu
Count Type: CLASS
DATE: 03-OCT-18

DIR 1: +MP
Counter Type: Tube

DIR 2: -MP

Final AADT: 14100
Route No: 72

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	487	482	969
AM - K FACTOR(%)			6.6
AM - D(%)	50.26	49.74	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	07:00 AM to 08:00 AM	
AM - PEAK HR VOLUME	487	508	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:00 PM to 5:00 PM		
PM - PEAK HR VOLUME	551	528	1,079
PM - K FACTOR(%)			7.35
PM -D(%)	51.07	48.93	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:45 PM to 5:45 PM	4:00 PM to 5:00 PM	
PM - PEAK HR VOLUME	593	528	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	487	487	969
AM - K FACTOR(%)			6.6
AM - D(%)	50.26	49.74	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:00 PM to 5:00 PM		
PM - PEAK HR VOLUME	551	593	1,079
PM - K FACTOR(%)			7.35
PM -D(%)	51.07	48.93	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	1:45 PM to 2:45 PM		
PEAK HR VOLUME	468	539	1,007
DIRECTIONAL PEAK			
PEAK HR TIME	2:00 PM to 3:00 PM	1:45 PM to 2:45 PM	
PEAK HR VOLUME	472	539	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	2,297	2,698	4,995
AM 12-HR PERIOD (00:00-12:00)	2,556	3,144	5,700
PM 6-HR PERIOD (12:00-18:00)	3,013	2,904	5,917
PM 12-HR PERIOD (12:00-24:00)	4,581	4,394	8,975
24-HR PERIOD (12:00-24:00)	7,137	7,538	14,675
D%	48.63	51.37	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	10	11	21

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	46	91	137

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	113	99	212

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	101	109	210

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

12:15 - 12:30	10	14	24	06:15 - 06:30	65	101	166	12:15 - 12:30	124	100	224	06:15 - 06:30	115	119	234
12:30 - 12:45	11	10	21	06:30 - 06:45	59	89	148	12:30 - 12:45	94	126	220	06:30 - 06:45	105	111	216
12:45 - 01:00	10	7	17	06:45 - 07:00	78	95	173	12:45 - 01:00	102	118	220	06:45 - 07:00	106	101	207
01:00 - 01:15	11	8	19	07:00 - 07:15	72	126	198	01:00 - 01:15	131	94	225	07:00 - 07:15	85	127	212
01:15 - 01:30	10	8	18	07:15 - 07:30	106	139	245	01:15 - 01:30	106	131	237	07:15 - 07:30	93	99	192
01:30 - 01:45	14	8	22	07:30 - 07:45	133	125	258	01:30 - 01:45	118	122	240	07:30 - 07:45	68	97	165
01:45 - 02:00	4	10	14	07:45 - 08:00	114	118	232	01:45 - 02:00	103	149	252	07:45 - 08:00	90	74	164
02:00 - 02:15	6	8	14	08:00 - 08:15	116	104	220	02:00 - 02:15	105	128	233	08:00 - 08:15	77	58	135
02:15 - 02:30	1	3	4	08:15 - 08:30	124	135	259	02:15 - 02:30	129	134	263	08:15 - 08:30	74	43	117
02:30 - 02:45	10	7	17	08:30 - 08:45	119	129	248	02:30 - 02:45	131	128	259	08:30 - 08:45	77	76	153
02:45 - 03:00	5	6	11	08:45 - 09:00	107	115	222	02:45 - 03:00	107	124	231	08:45 - 09:00	65	72	137
03:00 - 03:15	5	7	12	09:00 - 09:15	110	91	201	03:00 - 03:15	134	129	263	09:00 - 09:15	50	46	96
03:15 - 03:30	4	11	15	09:15 - 09:30	90	111	201	03:15 - 03:30	107	131	238	09:15 - 09:30	95	50	145
03:30 - 03:45	11	10	21	09:30 - 09:45	104	101	205	03:30 - 03:45	139	100	239	09:30 - 09:45	67	54	121

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

03:45 - 04:00	7	6	13	09:45 - 10:00	98	121	219	03:45 - 04:00	151	103	254	09:45 - 10:00	58	55	113
04:00 - 04:15	2	12	14	10:00 - 10:15	78	102	180	04:00 - 04:15	129	143	272	10:00 - 10:15	38	36	74
04:15 - 04:30	9	17	26	10:15 - 10:30	84	104	188	04:15 - 04:30	157	138	295	10:15 - 10:30	52	26	78
04:30 - 04:45	16	22	38	10:30 - 10:45	107	121	228	04:30 - 04:45	111	136	247	10:30 - 10:45	41	31	72
04:45 - 05:00	16	37	53	10:45 - 11:00	105	122	227	04:45 - 05:00	154	111	265	10:45 - 11:00	32	31	63
05:00 - 05:15	14	39	53	11:00 - 11:15	78	111	189	05:00 - 05:15	140	118	258	11:00 - 11:15	23	25	48
05:15 - 05:30	15	40	55	11:15 - 11:30	91	110	201	05:15 - 05:30	160	109	269	11:15 - 11:30	22	11	33
05:30 - 05:45	30	69	99	11:30 - 11:45	97	115	212	05:30 - 05:45	139	122	261	11:30 - 11:45	17	20	37
05:45 - 06:00	28	76	104	11:45 - 12:00	116	122	238	05:45 - 06:00	129	111	240	11:45 - 12:00	17	19	36

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200388
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location:

Town: Oahu
Count Type: CLASS
DATE: 24-SEP-19

DIR 1: +MP
Counter Type: Tube

DIR 2: -MP

Final AADT: 15200
Route No: 72

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM		
AM - PEAK HR VOLUME	460	489	949
AM - K FACTOR(%)			6.64
AM - D(%)	48.47	51.53	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 to 08:30 AM	07:00 to 08:00 AM	
AM - PEAK HR VOLUME	480	499	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 to 05:30 PM		
PM - PEAK HR VOLUME	602	504	1,106
PM - K FACTOR(%)			7.73
PM -D(%)	54.43	45.57	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 to 05:30 PM	04:00 to 05:00 PM	
PM - PEAK HR VOLUME	602	507	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM		
AM - PEAK HR VOLUME	460	480	949
AM - K FACTOR(%)			6.64
AM - D(%)	48.47	51.53	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 to 05:30 PM		
PM - PEAK HR VOLUME	602	602	1,106
PM - K FACTOR(%)			7.73
PM -D(%)	54.43	45.57	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM		
PEAK HR VOLUME	488	477	965
DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM	01:30 to 02:30 PM	
PEAK HR VOLUME	488	518	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	2,291	2,710	5,001
AM 12-HR PERIOD (00:00-12:00)	2,558	3,149	5,707
PM 6-HR PERIOD (12:00-18:00)	2,856	2,908	5,764
PM 12-HR PERIOD (12:00-24:00)	4,420	4,174	8,594
24-HR PERIOD (12:00-24:00)	6,978	7,323	14,301
D%	48.79	51.21	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	11	12	23
12:15 - 12:30	13	6	19

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	54	90	144
06:15 - 06:30	62	78	140

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	99	116	215
12:15 - 12:30	83	127	210

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	115	108	223
06:15 - 06:30	151	78	229

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

12:30 - 12:45	18	10	28	06:30 - 06:45	43	110	153	12:30 - 12:45	122	107	229	06:30 - 06:45	122	77	199
12:45 - 01:00	10	10	20	06:45 - 07:00	90	88	178	12:45 - 01:00	87	102	189	06:45 - 07:00	112	109	221
01:00 - 01:15	8	6	14	07:00 - 07:15	85	120	205	01:00 - 01:15	105	124	229	07:00 - 07:15	106	84	190
01:15 - 01:30	9	8	17	07:15 - 07:30	89	149	238	01:15 - 01:30	95	126	221	07:15 - 07:30	105	86	191
01:30 - 01:45	3	4	7	07:30 - 07:45	116	118	234	01:30 - 01:45	106	135	241	07:30 - 07:45	79	78	157
01:45 - 02:00	5	5	10	07:45 - 08:00	128	112	240	01:45 - 02:00	94	123	217	07:45 - 08:00	80	80	160
02:00 - 02:15	6	6	12	08:00 - 08:15	127	110	237	02:00 - 02:15	74	130	204	08:00 - 08:15	77	67	144
02:15 - 02:30	3	5	8	08:15 - 08:30	109	128	237	02:15 - 02:30	132	130	262	08:15 - 08:30	71	50	121
02:30 - 02:45	11	8	19	08:30 - 08:45	95	130	225	02:30 - 02:45	127	114	241	08:30 - 08:45	52	60	112
02:45 - 03:00	7	6	13	08:45 - 09:00	108	89	197	02:45 - 03:00	105	109	214	08:45 - 09:00	68	57	125
03:00 - 03:15	3	6	9	09:00 - 09:15	117	103	220	03:00 - 03:15	101	121	222	09:00 - 09:15	67	43	110
03:15 - 03:30	5	9	14	09:15 - 09:30	104	117	221	03:15 - 03:30	148	120	268	09:15 - 09:30	64	45	109
03:30 - 03:45	6	4	10	09:30 - 09:45	89	112	201	03:30 - 03:45	134	127	261	09:30 - 09:45	53	39	92
03:45 - 04:00	8	6	14	09:45 - 10:00	112	116	228	03:45 - 04:00	142	117	259	09:45 - 10:00	41	35	76

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

04:00 - 04:15	4	5	9	10:00 - 10:15	92	99	191	04:00 - 04:15	122	142	264	10:00 - 10:15	42	39	81
04:15 - 04:30	8	21	29	10:15 - 10:30	75	132	207	04:15 - 04:30	119	118	237	10:15 - 10:30	23	22	45
04:30 - 04:45	13	21	34	10:30 - 10:45	111	101	212	04:30 - 04:45	144	119	263	10:30 - 10:45	21	22	43
04:45 - 05:00	18	30	48	10:45 - 11:00	95	105	200	04:45 - 05:00	172	128	300	10:45 - 11:00	21	22	43
05:00 - 05:15	12	39	51	11:00 - 11:15	95	145	240	05:00 - 05:15	149	130	279	11:00 - 11:15	31	14	45
05:15 - 05:30	19	50	69	11:15 - 11:30	91	128	219	05:15 - 05:30	137	127	264	11:15 - 11:30	16	20	36
05:30 - 05:45	31	62	93	11:30 - 11:45	112	119	231	05:30 - 05:45	138	121	259	11:30 - 11:45	23	18	41
05:45 - 06:00	36	100	136	11:45 - 12:00	92	111	203	05:45 - 06:00	121	95	216	11:45 - 12:00	24	13	37

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200388 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 15200
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 72
Location: **DATE: 25-SEP-19**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 to 08:30 AM		
AM - PEAK HR VOLUME	489	484	973
AM - K FACTOR(%)			6.59
AM - D(%)	50.26	49.74	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 to 08:30 AM	07:00 to 08:00 AM	
AM - PEAK HR VOLUME	489	512	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 to 05:00 PM		
PM - PEAK HR VOLUME	554	528	1,082
PM - K FACTOR(%)			7.33
PM -D(%)	51.2	48.8	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:45 to 05:45 PM	04:00 to 05:00 PM	
PM - PEAK HR VOLUME	596	528	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 to 08:30 AM		
AM - PEAK HR VOLUME	489	489	973
AM - K FACTOR(%)			6.59
AM - D(%)	50.26	49.74	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 to 05:00 PM		
PM - PEAK HR VOLUME	554	596	1,082
PM - K FACTOR(%)			7.33
PM -D(%)	51.2	48.8	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:15 to 03:15 PM		
PEAK HR VOLUME	507	518	1,025
DIRECTIONAL PEAK			
PEAK HR TIME	02:15 to 03:15 PM	01:45 to 02:45 PM	
PEAK HR VOLUME	507	541	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	2,309	2,711	5,020
AM 12-HR PERIOD (00:00-12:00)	2,568	3,157	5,725
PM 6-HR PERIOD (12:00-18:00)	3,029	2,923	5,952
PM 12-HR PERIOD (12:00-24:00)	4,610	4,420	9,030
24-HR PERIOD (12:00-24:00)	7,178	7,577	14,755
D%	48.65	51.35	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	10	11	21
12:15 - 12:30	10	14	24

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	46	91	137
06:15 - 06:30	65	101	166

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	113	99	212
12:15 - 12:30	124	103	227

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	104	109	213
06:15 - 06:30	115	119	234

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

12:30 - 12:45	11	10	21
12:45 - 01:00	10	7	17
01:00 - 01:15	11	8	19
01:15 - 01:30	10	8	18
01:30 - 01:45	14	8	22
01:45 - 02:00	4	10	14
02:00 - 02:15	6	8	14
02:15 - 02:30	1	3	4
02:30 - 02:45	10	7	17
02:45 - 03:00	5	6	11
03:00 - 03:15	5	7	12
03:15 - 03:30	4	11	15
03:30 - 03:45	11	10	21
03:45 - 04:00	7	6	13

06:30 - 06:45	59	89	148
06:45 - 07:00	78	95	173
07:00 - 07:15	72	126	198
07:15 - 07:30	108	141	249
07:30 - 07:45	133	125	258
07:45 - 08:00	114	120	234
08:00 - 08:15	118	104	222
08:15 - 08:30	124	135	259
08:30 - 08:45	119	129	248
08:45 - 09:00	107	118	225
09:00 - 09:15	113	91	204
09:15 - 09:30	90	111	201
09:30 - 09:45	104	101	205
09:45 - 10:00	98	121	219

12:30 - 12:45	96	126	222
12:45 - 01:00	102	118	220
01:00 - 01:15	131	94	225
01:15 - 01:30	108	133	241
01:30 - 01:45	118	122	240
01:45 - 02:00	103	149	252
02:00 - 02:15	105	130	235
02:15 - 02:30	132	134	266
02:30 - 02:45	131	128	259
02:45 - 03:00	107	127	234
03:00 - 03:15	137	129	266
03:15 - 03:30	107	131	238
03:30 - 03:45	139	100	239
03:45 - 04:00	151	106	257

06:30 - 06:45	105	111	216
06:45 - 07:00	106	103	209
07:00 - 07:15	88	127	215
07:15 - 07:30	93	99	192
07:30 - 07:45	68	97	165
07:45 - 08:00	90	74	164
08:00 - 08:15	77	60	137
08:15 - 08:30	77	43	120
08:30 - 08:45	77	76	153
08:45 - 09:00	65	72	137
09:00 - 09:15	50	48	98
09:15 - 09:30	97	50	147
09:30 - 09:45	67	54	121
09:45 - 10:00	58	55	113

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

04:00 - 04:15	2	12	14	10:00 - 10:15	78	106	184	04:00 - 04:15	132	143	275	10:00 - 10:15	38	36	74
04:15 - 04:30	9	17	26	10:15 - 10:30	86	104	190	04:15 - 04:30	157	138	295	10:15 - 10:30	52	26	78
04:30 - 04:45	16	22	38	10:30 - 10:45	107	121	228	04:30 - 04:45	111	136	247	10:30 - 10:45	41	31	72
04:45 - 05:00	16	37	53	10:45 - 11:00	105	122	227	04:45 - 05:00	154	111	265	10:45 - 11:00	32	31	63
05:00 - 05:15	14	39	53	11:00 - 11:15	78	113	191	05:00 - 05:15	143	121	264	11:00 - 11:15	23	25	48
05:15 - 05:30	15	40	55	11:15 - 11:30	94	110	204	05:15 - 05:30	160	109	269	11:15 - 11:30	22	11	33
05:30 - 05:45	30	69	99	11:30 - 11:45	97	115	212	05:30 - 05:45	139	122	261	11:30 - 11:45	17	20	37
05:45 - 06:00	28	76	104	11:45 - 12:00	116	122	238	05:45 - 06:00	129	114	243	11:45 - 12:00	19	20	39

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200388
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location:

Town: Oahu
Count Type: CLASS
DATE: 02-MAR-20

DIR 1: +MP
Counter Type: Tube

DIR 2: -MP

Final AADT: 11100
Route No: 72

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 to 08:45 AM		
AM - PEAK HR VOLUME	336	383	719
AM - K FACTOR(%)			5.57
AM - D(%)	46.73	53.27	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:45 to 09:45 AM	07:00 to 08:00 AM	
AM - PEAK HR VOLUME	355	398	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 to 04:15 PM		
PM - PEAK HR VOLUME	518	486	1,004
PM - K FACTOR(%)			7.78
PM -D(%)	51.59	48.41	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 to 04:30 PM	03:15 to 04:15 PM	
PM - PEAK HR VOLUME	520	486	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:30 to 12:30 PM		
AM - PEAK HR VOLUME	451	460	911
AM - K FACTOR(%)			7.05
AM - D(%)	46.73	53.27	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:15 to 04:15 PM		
PM - PEAK HR VOLUME	518	486	1,004
PM - K FACTOR(%)			7.78
PM -D(%)	51.59	48.41	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM		
PEAK HR VOLUME	491	497	988
DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM	02:30 to 03:30 PM	
PEAK HR VOLUME	491	508	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	2,092	2,318	4,410
AM 12-HR PERIOD (00:00-12:00)	2,333	2,707	5,040
PM 6-HR PERIOD (12:00-18:00)	2,826	2,726	5,552
PM 12-HR PERIOD (12:00-24:00)	3,935	3,938	7,873
24-HR PERIOD (12:00-24:00)	6,268	6,645	12,913
D%	48.54	51.46	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	4	14	18
12:15 - 12:30	6	9	15

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	38	77	115
06:15 - 06:30	54	64	118

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	108	111	219
12:15 - 12:30	109	112	221

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	96	94	190
06:15 - 06:30	100	108	208

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

12:30 - 12:45	5	11	16	06:30 - 06:45	69	91	160	12:30 - 12:45	112	86	198	06:30 - 06:45	63	90	153
12:45 - 01:00	8	9	17	06:45 - 07:00	68	68	136	12:45 - 01:00	114	119	233	06:45 - 07:00	86	91	177
01:00 - 01:15	6	5	11	07:00 - 07:15	70	101	171	01:00 - 01:15	106	88	194	07:00 - 07:15	60	78	138
01:15 - 01:30	8	1	9	07:15 - 07:30	70	114	184	01:15 - 01:30	105	130	235	07:15 - 07:30	70	61	131
01:30 - 01:45	5	3	8	07:30 - 07:45	85	88	173	01:30 - 01:45	112	119	231	07:30 - 07:45	60	98	158
01:45 - 02:00	6	7	13	07:45 - 08:00	86	95	181	01:45 - 02:00	99	112	211	07:45 - 08:00	64	70	134
02:00 - 02:15	6	6	12	08:00 - 08:15	84	90	174	02:00 - 02:15	122	114	236	08:00 - 08:15	69	60	129
02:15 - 02:30	5	1	6	08:15 - 08:30	77	99	176	02:15 - 02:30	133	128	261	08:15 - 08:30	54	62	116
02:30 - 02:45	5	2	7	08:30 - 08:45	89	99	188	02:30 - 02:45	106	131	237	08:30 - 08:45	38	46	84
02:45 - 03:00	3	7	10	08:45 - 09:00	93	80	173	02:45 - 03:00	116	128	244	08:45 - 09:00	50	59	109
03:00 - 03:15	3	10	13	09:00 - 09:15	85	76	161	03:00 - 03:15	112	117	229	09:00 - 09:15	40	36	76
03:15 - 03:30	6	10	16	09:15 - 09:30	80	92	172	03:15 - 03:30	120	132	252	09:15 - 09:30	36	26	62
03:30 - 03:45	10	4	14	09:30 - 09:45	97	98	195	03:30 - 03:45	143	120	263	09:30 - 09:45	26	32	58
03:45 - 04:00	3	17	20	09:45 - 10:00	78	90	168	03:45 - 04:00	131	113	244	09:45 - 10:00	32	27	59

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

04:00 - 04:15	8	21	29	10:00 - 10:15	111	100	211	04:00 - 04:15	124	121	245	10:00 - 10:15	28	34	62
04:15 - 04:30	6	12	18	10:15 - 10:30	104	104	208	04:15 - 04:30	122	115	237	10:15 - 10:30	29	27	56
04:30 - 04:45	13	17	30	10:30 - 10:45	103	114	217	04:30 - 04:45	128	107	235	10:30 - 10:45	23	19	42
04:45 - 05:00	15	27	42	10:45 - 11:00	103	133	236	04:45 - 05:00	123	97	220	10:45 - 11:00	20	30	50
05:00 - 05:15	16	25	41	11:00 - 11:15	124	100	224	05:00 - 05:15	116	116	232	11:00 - 11:15	24	24	48
05:15 - 05:30	26	49	75	11:15 - 11:30	90	108	198	05:15 - 05:30	131	110	241	11:15 - 11:30	14	25	39
05:30 - 05:45	36	60	96	11:30 - 11:45	108	129	237	05:30 - 05:45	116	103	219	11:30 - 11:45	12	9	21
05:45 - 06:00	32	62	94	11:45 - 12:00	126	108	234	05:45 - 06:00	118	97	215	11:45 - 12:00	15	6	21

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200388 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 11100
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 72
Location: **DATE: 03-MAR-20**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 to 08:45 AM		
AM - PEAK HR VOLUME	402	406	808
AM - K FACTOR(%)			5.8
AM - D(%)	49.75	50.25	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:45 to 08:45 AM	07:15 to 08:15 AM	
AM - PEAK HR VOLUME	402	421	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 to 04:45 PM		
PM - PEAK HR VOLUME	536	525	1,061
PM - K FACTOR(%)			7.62
PM -D(%)	50.52	49.48	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 to 04:00 PM	03:45 to 04:45 PM	
PM - PEAK HR VOLUME	540	525	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:30 to 12:30 PM		
AM - PEAK HR VOLUME	487	515	1,002
AM - K FACTOR(%)			7.2
AM - D(%)	49.75	50.25	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 to 04:45 PM		
PM - PEAK HR VOLUME	536	525	1,061
PM - K FACTOR(%)			7.62
PM -D(%)	50.52	49.48	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:15 to 03:15 PM		
PEAK HR VOLUME	505	516	1,021
DIRECTIONAL PEAK			
PEAK HR TIME	12:45 to 01:45 PM	11:45 to 12:45 PM	
PEAK HR VOLUME	531	517	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	2,266	2,423	4,689
AM 12-HR PERIOD (00:00-12:00)	2,548	2,820	5,368
PM 6-HR PERIOD (12:00-18:00)	3,052	2,930	5,982
PM 12-HR PERIOD (12:00-24:00)	4,232	4,323	8,555
24-HR PERIOD (12:00-24:00)	6,780	7,143	13,923
D%	48.7	51.3	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	7	9	16
12:15 - 12:30	13	7	20
12:30 - 12:45	5	5	10
12:45 - 01:00	5	11	16
01:00 - 01:15	18	2	20
01:15 - 01:30	6	6	12
01:30 - 01:45	5	4	9
01:45 - 02:00	4	2	6
02:00 - 02:15	5	3	8
02:15 - 02:30	6	3	9
02:30 - 02:45	6	2	8
02:45 - 03:00	7	6	13
03:00 - 03:15	5	4	9
03:15 - 03:30	5	11	16
03:30 - 03:45	6	6	12
03:45 - 04:00	12	10	22

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	52	68	120
06:15 - 06:30	49	75	124
06:30 - 06:45	64	91	155
06:45 - 07:00	81	66	147
07:00 - 07:15	61	90	151
07:15 - 07:30	77	108	185
07:30 - 07:45	80	115	195
07:45 - 08:00	103	105	208
08:00 - 08:15	91	93	184
08:15 - 08:30	106	104	210
08:30 - 08:45	102	104	206
08:45 - 09:00	78	96	174
09:00 - 09:15	101	87	188
09:15 - 09:30	98	106	204
09:30 - 09:45	101	105	206
09:45 - 10:00	116	102	218

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	108	131	239
12:15 - 12:30	131	140	271
12:30 - 12:45	100	107	207
12:45 - 01:00	146	107	253
01:00 - 01:15	117	127	244
01:15 - 01:30	125	128	253
01:30 - 01:45	143	109	252
01:45 - 02:00	103	121	224
02:00 - 02:15	121	129	250
02:15 - 02:30	125	137	262
02:30 - 02:45	127	122	249
02:45 - 03:00	128	123	251
03:00 - 03:15	125	134	259
03:15 - 03:30	127	104	231
03:30 - 03:45	146	106	252
03:45 - 04:00	142	123	265

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	115	112	227
06:15 - 06:30	115	106	221
06:30 - 06:45	77	82	159
06:45 - 07:00	98	86	184
07:00 - 07:15	68	80	148
07:15 - 07:30	67	84	151
07:30 - 07:45	46	103	149
07:45 - 08:00	47	99	146
08:00 - 08:15	53	85	138
08:15 - 08:30	65	71	136
08:30 - 08:45	45	65	110
08:45 - 09:00	58	35	93
09:00 - 09:15	36	51	87
09:15 - 09:30	47	48	95
09:30 - 09:45	44	42	86
09:45 - 10:00	30	46	76

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

04:00 - 04:15	7	15	22	10:00 - 10:15	122	113	235	04:00 - 04:15	125	147	272	10:00 - 10:15	30	41	71
04:15 - 04:30	9	21	30	10:15 - 10:30	108	121	229	04:15 - 04:30	118	132	250	10:15 - 10:30	24	36	60
04:30 - 04:45	12	21	33	10:30 - 10:45	116	117	233	04:30 - 04:45	151	123	274	10:30 - 10:45	23	23	46
04:45 - 05:00	16	23	39	10:45 - 11:00	107	101	208	04:45 - 05:00	129	122	251	10:45 - 11:00	23	26	49
05:00 - 05:15	12	48	60	11:00 - 11:15	100	110	210	05:00 - 05:15	122	110	232	11:00 - 11:15	17	20	37
05:15 - 05:30	24	50	74	11:15 - 11:30	105	102	207	05:15 - 05:30	125	127	252	11:15 - 11:30	24	25	49
05:30 - 05:45	36	62	98	11:30 - 11:45	117	105	222	05:30 - 05:45	149	107	256	11:30 - 11:45	13	14	27
05:45 - 06:00	51	66	117	11:45 - 12:00	131	139	270	05:45 - 06:00	119	114	233	11:45 - 12:00	15	13	28

Type of report: Tube Count - Volume Data

LOCATION: Kalanianaole Hwy east of Inoaole St **QC JOB #:** 15674011
SPECIFIC LOCATION: **DIRECTION:** EB, WB
CITY/STATE: Waimanalo, HI **DATE:** Jan 20 2022 - Jan 20 2022

Start Time	Mon	Tue	Wed	Thu 20 Jan 22	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 AM				19		19			19	
12:15 AM				18		18			18	
12:30 AM				12		12			12	
12:45 AM				15		15			15	
01:00 AM				12		12			12	
01:15 AM				15		15			15	
01:30 AM				6		6			6	
01:45 AM				11		11			11	
02:00 AM				8		8			8	
02:15 AM				13		13			13	
02:30 AM				15		15			15	
02:45 AM				7		7			7	
03:00 AM				15		15			15	
03:15 AM				18		18			18	
03:30 AM				15		15			15	
03:45 AM				21		21			21	
04:00 AM				19		19			19	
04:15 AM				18		18			18	
04:30 AM				36		36			36	
04:45 AM				37		37			37	
05:00 AM				59		59			59	
05:15 AM				71		71			71	
05:30 AM				86		86			86	
05:45 AM				110		110			110	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 1/24/2022 5:54 AM SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Quality Counts DATA THAT DRIVES COMMUNITIES

Type of report: Tube Count - Volume Data

LOCATION: Kalanianaole Hwy east of Inoaole St
QC JOB #: 15674011
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Waimanalo, HI
DATE: Jan 20 2022 - Jan 20 2022

Start Time	Mon	Tue	Wed	Thu 20 Jan 22	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 AM				114		114			114	
06:15 AM				131		131			131	
06:30 AM				174		174			174	
06:45 AM				161		161			161	
07:00 AM				223		223			223	
07:15 AM				239		239			239	
07:30 AM				**314**		**314**			**314**	
07:45 AM				278		278			278	
08:00 AM				247		247			247	
08:15 AM				231		231			231	
08:30 AM				218		218			218	
08:45 AM				200		200			200	
09:00 AM				193		193			193	
09:15 AM				202		202			202	
09:30 AM				248		248			248	
09:45 AM				176		176			176	
10:00 AM				183		183			183	
10:15 AM				224		224			224	
10:30 AM				235		235			235	
10:45 AM				257		257			257	
11:00 AM				252		252			252	
11:15 AM				262		262			262	
11:30 AM				265		265			265	
11:45 AM				247		247			247	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 1/24/2022 5:54 AM
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Kalanianaole Hwy east of Inoaole St
QC JOB #: 15674011
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Waimanalo, HI
DATE: Jan 20 2022 - Jan 20 2022

Start Time	Mon	Tue	Wed	Thu 20 Jan 22	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
12:00 PM				274		274			274	
12:15 PM				295		295			295	
12:30 PM				262		262			262	
12:45 PM				259		259			259	
01:00 PM				244		244			244	
01:15 PM				269		269			269	
01:30 PM				186		186			186	
01:45 PM				241		241			241	
02:00 PM				303		303			303	
02:15 PM				301		301			301	
02:30 PM				278		278			278	
02:45 PM				282		282			282	
03:00 PM				302		302			302	
03:15 PM				294		294			294	
03:30 PM				**313**		**313**			**313**	
03:45 PM				289		289			289	
04:00 PM				313		313			313	
04:15 PM				277		277			277	
04:30 PM				292		292			292	
04:45 PM				278		278			278	
05:00 PM				253		253			253	
05:15 PM				272		272			272	
05:30 PM				241		241			241	
05:45 PM				269		269			269	
Day Total										
% Weekday Average										
% Week Average										
AM Peak 15-min Vol										
PM Peak 15-min Vol										

Comments:

Report generated on 1/24/2022 5:54 AM
SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Kalanianaole Hwy east of Inoaole St
QC JOB #: 15674011
SPECIFIC LOCATION:
DIRECTION: EB, WB
CITY/STATE: Waimanalo, HI
DATE: Jan 20 2022 - Jan 20 2022

Start Time	Mon	Tue	Wed	Thu 20 Jan 22	Fri	Average Weekday 15-min Traffic	Sat	Sun	Average Week 15-min Traffic	Average Week Profile
06:00 PM				248		248			248	
06:15 PM				195		195			195	
06:30 PM				235		235			235	
06:45 PM				201		201			201	
07:00 PM				176		176			176	
07:15 PM				146		146			146	
07:30 PM				122		122			122	
07:45 PM				105		105			105	
08:00 PM				104		104			104	
08:15 PM				105		105			105	
08:30 PM				89		89			89	
08:45 PM				79		79			79	
09:00 PM				98		98			98	
09:15 PM				71		71			71	
09:30 PM				79		79			79	
09:45 PM				43		43			43	
10:00 PM				54		54			54	
10:15 PM				62		62			62	
10:30 PM				66		66			66	
10:45 PM				41		41			41	
11:00 PM				33		33			33	
11:15 PM				34		34			34	
11:30 PM				22		22			22	
11:45 PM				23		23			23	
Day Total				14948		14948			14948	
% Weekday Average				100%						
% Week Average				100%		100%				
AM Peak 15-min Vol				7:30 AM 314		7:30 AM 314			7:30 AM 314	
PM Peak 15-min Vol				3:30 PM 313		3:30 PM 313			3:30 PM 313	

Comments:

Report generated on 1/24/2022 5:54 AM

SOURCE: Quality Counts, LLC (http://www.qualitycounts.net)

Quality Counts
DATA THAT DRIVES COMMUNITIES

Station West of Waimanalo Stream Bridge

Historical HDOT & 24-Hour Counts

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200251
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location:

Town: Oahu
Count Type: CLASS
DATE: 02-OCT-18

DIR 1: +MP
Counter Type: Tube

DIR 2: -MP

Final AADT: 11100
Route No: 72

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	332	297	629
AM - K FACTOR(%)			5.64
AM - D(%)	52.78	47.22	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	332	317	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:00 PM to 5:00 PM		
PM - PEAK HR VOLUME	500	416	916
PM - K FACTOR(%)			8.21
PM -D(%)	54.59	45.41	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	3:45 PM to 4:45 PM	3:15 PM to 4:15 PM	
PM - PEAK HR VOLUME	505	443	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	09:30 AM to 10:30 AM		
AM - PEAK HR VOLUME	346	346	787
AM - K FACTOR(%)			7.05
AM - D(%)	52.78	47.22	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:00 PM to 5:00 PM		
PM - PEAK HR VOLUME	500	505	916
PM - K FACTOR(%)			8.21
PM -D(%)	54.59	45.41	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	1:15 PM to 2:15 PM		
PEAK HR VOLUME	384	472	856
DIRECTIONAL PEAK			
PEAK HR TIME	2:00 PM to 3:00 PM	11:15 AM to 0:15 PM	
PEAK HR VOLUME	427	514	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	1,779	2,105	3,884
AM 12-HR PERIOD (00:00-12:00)	1,993	2,283	4,276
PM 6-HR PERIOD (12:00-18:00)	2,566	2,509	5,075
PM 12-HR PERIOD (12:00-24:00)	3,449	3,435	6,884
24-HR PERIOD (12:00-24:00)	5,442	5,718	11,160
D%	48.76	51.24	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	12	7	19

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	53	39	92

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	88	115	203

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	95	74	169

HDOT RIMS Traffic Station Analyzer (v47) Log Out Print RS

12:15 - 12:30	6	13	19	06:15 - 06:30	64	41	105	12:15 - 12:30	86	94	180	06:15 - 06:30	83	54	137
12:30 - 12:45	7	6	13	06:30 - 06:45	43	49	92	12:30 - 12:45	97	119	216	06:30 - 06:45	104	51	155
12:45 - 01:00	3	7	10	06:45 - 07:00	62	68	130	12:45 - 01:00	91	118	209	06:45 - 07:00	89	64	153
01:00 - 01:15	4	3	7	07:00 - 07:15	58	72	130	01:00 - 01:15	87	107	194	07:00 - 07:15	56	54	110
01:15 - 01:30	3	4	7	07:15 - 07:30	67	51	118	01:15 - 01:30	85	135	220	07:15 - 07:30	62	53	115
01:30 - 01:45	3	7	10	07:30 - 07:45	93	73	166	01:30 - 01:45	109	122	231	07:30 - 07:45	44	53	97
01:45 - 02:00	6	7	13	07:45 - 08:00	93	87	180	01:45 - 02:00	98	103	201	07:45 - 08:00	42	47	89
02:00 - 02:15	5	4	9	08:00 - 08:15	71	69	140	02:00 - 02:15	92	112	204	08:00 - 08:15	36	37	73
02:15 - 02:30	5	1	6	08:15 - 08:30	75	68	143	02:15 - 02:30	109	110	219	08:15 - 08:30	26	45	71
02:30 - 02:45	3	2	5	08:30 - 08:45	80	82	162	02:30 - 02:45	105	89	194	08:30 - 08:45	26	40	66
02:45 - 03:00	3	2	5	08:45 - 09:00	69	98	167	02:45 - 03:00	121	93	214	08:45 - 09:00	26	38	64
03:00 - 03:15	4	1	5	09:00 - 09:15	83	81	164	03:00 - 03:15	122	106	228	09:00 - 09:15	22	37	59
03:15 - 03:30	5	4	9	09:15 - 09:30	75	78	153	03:15 - 03:30	109	102	211	09:15 - 09:30	19	36	55
03:30 - 03:45	2	1	3	09:30 - 09:45	87	93	180	03:30 - 03:45	85	140	225	09:30 - 09:45	22	41	63

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

03:45 - 04:00	7	2	9	09:45 - 10:00	78	122	200	03:45 - 04:00	128	92	220	09:45 - 10:00	17	37	54
04:00 - 04:15	5	5	10	10:00 - 10:15	89	107	196	04:00 - 04:15	129	109	238	10:00 - 10:15	18	29	47
04:15 - 04:30	4	5	9	10:15 - 10:30	92	119	211	04:15 - 04:30	133	94	227	10:15 - 10:30	17	31	48
04:30 - 04:45	17	8	25	10:30 - 10:45	72	99	171	04:30 - 04:45	115	110	225	10:30 - 10:45	12	21	33
04:45 - 05:00	8	10	18	10:45 - 11:00	54	150	204	04:45 - 05:00	123	103	226	10:45 - 11:00	17	24	41
05:00 - 05:15	13	9	22	11:00 - 11:15	74	60	134	05:00 - 05:15	114	103	217	11:00 - 11:15	14	17	31
05:15 - 05:30	24	18	42	11:15 - 11:30	71	169	240	05:15 - 05:30	103	89	192	11:15 - 11:30	17	19	36
05:30 - 05:45	28	18	46	11:30 - 11:45	80	112	192	05:30 - 05:45	126	63	189	11:30 - 11:45	8	10	18
05:45 - 06:00	37	34	71	11:45 - 12:00	96	118	214	05:45 - 06:00	111	81	192	11:45 - 12:00	11	14	25

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200251
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location:

Town: Oahu
Count Type: CLASS
DATE: 03-OCT-18

DIR 1: +MP
Counter Type: Tube

DIR 2: -MP

Final AADT: 11100
Route No: 72

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM		
AM - PEAK HR VOLUME	320	321	641
AM - K FACTOR(%)			5.52
AM - D(%)	49.92	50.08	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 AM to 08:30 AM	08:00 AM to 09:00 AM	
AM - PEAK HR VOLUME	320	333	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	3:00 PM to 4:00 PM		
PM - PEAK HR VOLUME	478	459	937
PM - K FACTOR(%)			8.07
PM -D(%)	51.01	48.99	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	4:30 PM to 5:30 PM	3:30 PM to 4:30 PM	
PM - PEAK HR VOLUME	494	460	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:00 AM to 12:00 PM		
AM - PEAK HR VOLUME	360	360	894
AM - K FACTOR(%)			7.7
AM - D(%)	49.92	50.08	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	3:00 PM to 4:00 PM		
PM - PEAK HR VOLUME	478	494	937
PM - K FACTOR(%)			8.07
PM -D(%)	51.01	48.99	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:15 AM to 0:15 PM		
PEAK HR VOLUME	368	530	898
DIRECTIONAL PEAK			
PEAK HR TIME	1:15 PM to 2:15 PM	11:30 AM to 0:30 PM	
PEAK HR VOLUME	434	540	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	1,777	2,297	4,074
AM 12-HR PERIOD (00:00-12:00)	1,997	2,493	4,490
PM 6-HR PERIOD (12:00-18:00)	2,552	2,718	5,270
PM 12-HR PERIOD (12:00-24:00)	3,495	3,620	7,115
24-HR PERIOD (12:00-24:00)	5,492	6,113	11,605
D%	47.32	52.68	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	11	13	24

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	53	41	94

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	73	145	218

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	78	100	178

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

12:15 - 12:30	5	11	16	06:15 - 06:30	61	39	100	12:15 - 12:30	87	130	217	06:15 - 06:30	99	74	173
12:30 - 12:45	3	10	13	06:30 - 06:45	57	52	109	12:30 - 12:45	92	126	218	06:30 - 06:45	87	60	147
12:45 - 01:00	7	7	14	06:45 - 07:00	59	71	130	12:45 - 01:00	96	125	221	06:45 - 07:00	94	63	157
01:00 - 01:15	1	7	8	07:00 - 07:15	69	58	127	01:00 - 01:15	73	129	202	07:00 - 07:15	64	54	118
01:15 - 01:30	3	3	6	07:15 - 07:30	65	66	131	01:15 - 01:30	110	103	213	07:15 - 07:30	50	45	95
01:30 - 01:45	8	4	12	07:30 - 07:45	92	68	160	01:30 - 01:45	109	121	230	07:30 - 07:45	38	45	83
01:45 - 02:00	1	3	4	07:45 - 08:00	90	91	181	01:45 - 02:00	114	100	214	07:45 - 08:00	37	41	78
02:00 - 02:15	4	4	8	08:00 - 08:15	71	82	153	02:00 - 02:15	101	95	196	08:00 - 08:15	37	35	72
02:15 - 02:30	6	6	12	08:15 - 08:30	67	80	147	02:15 - 02:30	95	121	216	08:15 - 08:30	49	36	85
02:30 - 02:45	2	4	6	08:30 - 08:45	88	64	152	02:30 - 02:45	100	107	207	08:30 - 08:45	56	37	93
02:45 - 03:00	3	3	6	08:45 - 09:00	72	107	179	02:45 - 03:00	108	100	208	08:45 - 09:00	38	31	69
03:00 - 03:15	0	3	3	09:00 - 09:15	74	90	164	03:00 - 03:15	136	97	233	09:00 - 09:15	32	41	73
03:15 - 03:30	7	4	11	09:15 - 09:30	57	120	177	03:15 - 03:30	111	107	218	09:15 - 09:30	28	26	54
03:30 - 03:45	2	1	3	09:30 - 09:45	58	118	176	03:30 - 03:45	102	130	232	09:30 - 09:45	32	27	59

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

03:45 - 04:00	6	1	7	09:45 - 10:00	80	119	199	03:45 - 04:00	129	125	254	09:45 - 10:00	20	28	48
04:00 - 04:15	3	2	5	10:00 - 10:15	91	118	209	04:00 - 04:15	118	91	209	10:00 - 10:15	21	27	48
04:15 - 04:30	7	7	14	10:15 - 10:30	63	133	196	04:15 - 04:30	110	114	224	10:15 - 10:30	16	31	47
04:30 - 04:45	16	5	21	10:30 - 10:45	74	123	197	04:30 - 04:45	107	104	211	10:30 - 10:45	18	21	39
04:45 - 05:00	9	9	18	10:45 - 11:00	76	123	199	04:45 - 05:00	127	99	226	10:45 - 11:00	7	19	26
05:00 - 05:15	24	9	33	11:00 - 11:15	65	149	214	05:00 - 05:15	131	123	254	11:00 - 11:15	11	16	27
05:15 - 05:30	24	20	44	11:15 - 11:30	108	120	228	05:15 - 05:30	129	105	234	11:15 - 11:30	16	14	30
05:30 - 05:45	29	20	49	11:30 - 11:45	95	131	226	05:30 - 05:45	103	110	213	11:30 - 11:45	8	12	20
05:45 - 06:00	39	40	79	11:45 - 12:00	92	134	226	05:45 - 06:00	91	111	202	11:45 - 12:00	7	19	26

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200251 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 12000
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 72
Location: **DATE: 24-SEP-19**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:45 to 09:45 AM		
AM - PEAK HR VOLUME	307	353	660
AM - K FACTOR(%)			5.88
AM - D(%)	46.52	53.48	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 to 08:30 AM	08:45 to 09:45 AM	
AM - PEAK HR VOLUME	335	353	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 to 05:00 PM		
PM - PEAK HR VOLUME	504	419	923
PM - K FACTOR(%)			8.22
PM -D(%)	54.6	45.4	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 to 04:45 PM	03:15 to 04:15 PM	
PM - PEAK HR VOLUME	509	446	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:15 to 12:15 PM		
AM - PEAK HR VOLUME	337	370	854
AM - K FACTOR(%)			7.61
AM - D(%)	46.52	53.48	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:00 to 05:00 PM		
PM - PEAK HR VOLUME	504	509	923
PM - K FACTOR(%)			8.22
PM -D(%)	54.6	45.4	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM		
PEAK HR VOLUME	440	443	883
DIRECTIONAL PEAK			
PEAK HR TIME	02:15 to 03:15 PM	11:15 to 12:15 PM	
PEAK HR VOLUME	460	517	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	1,784	2,117	3,901
AM 12-HR PERIOD (00:00-12:00)	2,001	2,298	4,299
PM 6-HR PERIOD (12:00-18:00)	2,585	2,526	5,111
PM 12-HR PERIOD (12:00-24:00)	3,470	3,455	6,925
24-HR PERIOD (12:00-24:00)	5,471	5,753	11,224
D%	48.74	51.26	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	13	7	20
12:15 - 12:30	6	13	19
12:30 - 12:45	7	6	13
12:45 - 01:00	3	7	10
01:00 - 01:15	4	3	7
01:15 - 01:30	3	4	7
01:30 - 01:45	3	7	10
01:45 - 02:00	6	7	13
02:00 - 02:15	5	4	9
02:15 - 02:30	5	1	6
02:30 - 02:45	3	2	5
02:45 - 03:00	3	2	5
03:00 - 03:15	4	1	5
03:15 - 03:30	5	4	9
03:30 - 03:45	2	1	3
03:45 - 04:00	7	2	9

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	55	39	94
06:15 - 06:30	64	41	105
06:30 - 06:45	43	49	92
06:45 - 07:00	62	70	132
07:00 - 07:15	60	72	132
07:15 - 07:30	67	51	118
07:30 - 07:45	93	73	166
07:45 - 08:00	93	89	182
08:00 - 08:15	74	69	143
08:15 - 08:30	75	68	143
08:30 - 08:45	80	82	162
08:45 - 09:00	69	101	170
09:00 - 09:15	76	81	157
09:15 - 09:30	75	78	153
09:30 - 09:45	87	93	180
09:45 - 10:00	78	122	200

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	88	118	206
12:15 - 12:30	89	94	183
12:30 - 12:45	97	119	216
12:45 - 01:00	91	118	209
01:00 - 01:15	87	110	197
01:15 - 01:30	88	135	223
01:30 - 01:45	109	122	231
01:45 - 02:00	98	105	203
02:00 - 02:15	95	112	207
02:15 - 02:30	109	110	219
02:30 - 02:45	105	89	194
02:45 - 03:00	121	95	216
03:00 - 03:15	125	106	231
03:15 - 03:30	109	102	211
03:30 - 03:45	85	140	225
03:45 - 04:00	128	92	220

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	95	77	172
06:15 - 06:30	85	54	139
06:30 - 06:45	104	51	155
06:45 - 07:00	89	64	153
07:00 - 07:15	56	54	110
07:15 - 07:30	62	53	115
07:30 - 07:45	44	53	97
07:45 - 08:00	42	47	89
08:00 - 08:15	36	37	73
08:15 - 08:30	26	45	71
08:30 - 08:45	26	40	66
08:45 - 09:00	26	38	64
09:00 - 09:15	22	37	59
09:15 - 09:30	19	36	55
09:30 - 09:45	22	41	63
09:45 - 10:00	17	37	54

1/14/22, 2:23 PM 15 Minute Report

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

04:00 - 04:15	5	5	10	10:00 - 10:15	89	109	198	04:00 - 04:15	129	112	241	10:00 - 10:15	18	29	47
04:15 - 04:30	4	5	9	10:15 - 10:30	95	119	214	04:15 - 04:30	137	94	231	10:15 - 10:30	17	31	48
04:30 - 04:45	17	8	25	10:30 - 10:45	72	99	171	04:30 - 04:45	115	110	225	10:30 - 10:45	12	21	33
04:45 - 05:00	8	11	19	10:45 - 11:00	54	150	204	04:45 - 05:00	123	103	226	10:45 - 11:00	17	24	41
05:00 - 05:15	15	9	24	11:00 - 11:15	74	63	137	05:00 - 05:15	114	107	221	11:00 - 11:15	14	17	31
05:15 - 05:30	24	18	42	11:15 - 11:30	73	169	242	05:15 - 05:30	106	89	195	11:15 - 11:30	17	19	36
05:30 - 05:45	28	18	46	11:30 - 11:45	80	112	192	05:30 - 05:45	126	63	189	11:30 - 11:45	8	10	18
05:45 - 06:00	37	36	73	11:45 - 12:00	96	118	214	05:45 - 06:00	111	81	192	11:45 - 12:00	11	14	25

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200251
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location:

Town: Oahu
Count Type: CLASS
DATE: 25-SEP-19

DIR 1: +MP
Counter Type: Tube

DIR 2: -MP

Final AADT: 12000
Route No: 72

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:45 to 09:45 AM		
AM - PEAK HR VOLUME	263	438	701
AM - K FACTOR(%)			6.01
AM - D(%)	37.52	62.48	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:30 to 08:30 AM	08:45 to 09:45 AM	
AM - PEAK HR VOLUME	324	438	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 to 04:00 PM		
PM - PEAK HR VOLUME	480	461	941
PM - K FACTOR(%)			8.06
PM -D(%)	51.01	48.99	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	04:30 to 05:30 PM	03:30 to 04:30 PM	
PM - PEAK HR VOLUME	496	462	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:15 to 12:15 PM		
AM - PEAK HR VOLUME	370	370	902
AM - K FACTOR(%)			7.73
AM - D(%)	37.52	62.48	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:00 to 04:00 PM		
PM - PEAK HR VOLUME	480	496	941
PM - K FACTOR(%)			8.06
PM -D(%)	51.01	48.99	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	11:15 to 12:15 PM		
PEAK HR VOLUME	370	532	902
DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM	11:30 to 12:30 PM	
PEAK HR VOLUME	459	542	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	1,790	2,316	4,106
AM 12-HR PERIOD (00:00-12:00)	2,010	2,512	4,522
PM 6-HR PERIOD (12:00-18:00)	2,565	2,731	5,296
PM 12-HR PERIOD (12:00-24:00)	3,511	3,636	7,147
24-HR PERIOD (12:00-24:00)	5,521	6,148	11,669
D%	47.31	52.69	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	11	13	24
12:15 - 12:30	5	11	16

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	53	41	94
06:15 - 06:30	61	39	100

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	75	145	220
12:15 - 12:30	87	130	217

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	80	102	182
06:15 - 06:30	99	74	173

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

12:30 - 12:45	3	10	13	06:30 - 06:45	59	54	113	12:30 - 12:45	92	126	218	06:30 - 06:45	87	60	147
12:45 - 01:00	7	7	14	06:45 - 07:00	59	71	130	12:45 - 01:00	96	128	224	06:45 - 07:00	94	63	157
01:00 - 01:15	1	7	8	07:00 - 07:15	69	58	127	01:00 - 01:15	75	129	204	07:00 - 07:15	64	54	118
01:15 - 01:30	3	3	6	07:15 - 07:30	65	69	134	01:15 - 01:30	110	103	213	07:15 - 07:30	50	45	95
01:30 - 01:45	8	4	12	07:30 - 07:45	94	68	162	01:30 - 01:45	109	121	230	07:30 - 07:45	38	45	83
01:45 - 02:00	1	3	4	07:45 - 08:00	90	91	181	01:45 - 02:00	114	103	217	07:45 - 08:00	37	41	78
02:00 - 02:15	4	4	8	08:00 - 08:15	71	85	156	02:00 - 02:15	103	95	198	08:00 - 08:15	37	35	72
02:15 - 02:30	6	6	12	08:15 - 08:30	69	80	149	02:15 - 02:30	95	121	216	08:15 - 08:30	49	36	85
02:30 - 02:45	2	4	6	08:30 - 08:45	88	64	152	02:30 - 02:45	100	107	207	08:30 - 08:45	56	37	93
02:45 - 03:00	3	3	6	08:45 - 09:00	72	110	182	02:45 - 03:00	108	102	210	08:45 - 09:00	38	31	69
03:00 - 03:15	0	3	3	09:00 - 09:15	76	90	166	03:00 - 03:15	138	97	235	09:00 - 09:15	32	41	73
03:15 - 03:30	7	4	11	09:15 - 09:30	57	120	177	03:15 - 03:30	111	107	218	09:15 - 09:30	28	26	54
03:30 - 03:45	2	1	3	09:30 - 09:45	58	118	176	03:30 - 03:45	102	130	232	09:30 - 09:45	32	27	59
03:45 - 04:00	6	1	7	09:45 - 10:00	80	122	202	03:45 - 04:00	129	127	256	09:45 - 10:00	20	28	48

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

04:00 - 04:15	3	2	5	10:00 - 10:15	94	118	212	04:00 - 04:15	121	91	212	10:00 - 10:15	21	27	48
04:15 - 04:30	7	7	14	10:15 - 10:30	63	133	196	04:15 - 04:30	110	114	224	10:15 - 10:30	16	31	47
04:30 - 04:45	16	5	21	10:30 - 10:45	74	126	200	04:30 - 04:45	107	104	211	10:30 - 10:45	18	21	39
04:45 - 05:00	9	9	18	10:45 - 11:00	78	123	201	04:45 - 05:00	127	99	226	10:45 - 11:00	7	19	26
05:00 - 05:15	24	9	33	11:00 - 11:15	65	149	214	05:00 - 05:15	131	126	257	11:00 - 11:15	11	16	27
05:15 - 05:30	24	20	44	11:15 - 11:30	108	120	228	05:15 - 05:30	131	105	236	11:15 - 11:30	16	14	30
05:30 - 05:45	29	20	49	11:30 - 11:45	95	131	226	05:30 - 05:45	103	110	213	11:30 - 11:45	8	13	21
05:45 - 06:00	39	40	79	11:45 - 12:00	92	136	228	05:45 - 06:00	91	111	202	11:45 - 12:00	8	19	27

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200251 **Town:** Oahu **DIR 1:** +MP **DIR 2:** -MP **Final AADT:** 15300
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER **Count Type:** CLASS **Counter Type:** Tube **Route No:** 72
Location: **DATE: 02-MAR-20**

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	07:15 to 08:15 AM		
AM - PEAK HR VOLUME	443	641	1,084
AM - K FACTOR(%)			5.97
AM - D(%)	40.87	59.13	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:45 to 09:45 AM	07:00 to 08:00 AM	
AM - PEAK HR VOLUME	500	644	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 to 04:30 PM		
PM - PEAK HR VOLUME	784	644	1,428
PM - K FACTOR(%)			7.86
PM -D(%)	54.9	45.1	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 to 04:45 PM	03:30 to 04:30 PM	
PM - PEAK HR VOLUME	797	644	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:15 to 12:15 PM		
AM - PEAK HR VOLUME	575	599	1,174
AM - K FACTOR(%)			6.46
AM - D(%)	40.87	59.13	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:30 to 04:30 PM		
PM - PEAK HR VOLUME	784	644	1,428
PM - K FACTOR(%)			7.86
PM -D(%)	54.9	45.1	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM		
PEAK HR VOLUME	738	649	1,387
DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM	02:15 to 03:15 PM	
PEAK HR VOLUME	738	653	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	2,802	3,489	6,291
AM 12-HR PERIOD (00:00-12:00)	3,090	4,211	7,301
PM 6-HR PERIOD (12:00-18:00)	4,072	3,616	7,688
PM 12-HR PERIOD (12:00-24:00)	5,753	5,118	10,871
24-HR PERIOD (12:00-24:00)	8,843	9,329	18,172
D%	48.66	51.34	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	13	14	27
12:15 - 12:30	13	16	29
12:30 - 12:45	9	12	21
12:45 - 01:00	8	7	15
01:00 - 01:15	14	11	25
01:15 - 01:30	12	5	17
01:30 - 01:45	6	3	9
01:45 - 02:00	6	5	11
02:00 - 02:15	8	7	15
02:15 - 02:30	4	7	11
02:30 - 02:45	7	3	10
02:45 - 03:00	4	11	15
03:00 - 03:15	6	15	21
03:15 - 03:30	7	15	22
03:30 - 03:45	5	11	16
03:45 - 04:00	7	21	28

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	54	156	210
06:15 - 06:30	77	134	211
06:30 - 06:45	93	137	230
06:45 - 07:00	93	148	241
07:00 - 07:15	93	142	235
07:15 - 07:30	100	163	263
07:30 - 07:45	105	178	283
07:45 - 08:00	115	161	276
08:00 - 08:15	123	139	262
08:15 - 08:30	104	141	245
08:30 - 08:45	102	169	271
08:45 - 09:00	129	139	268
09:00 - 09:15	138	115	253
09:15 - 09:30	109	144	253
09:30 - 09:45	124	99	223
09:45 - 10:00	132	132	264

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	131	165	296
12:15 - 12:30	147	138	285
12:30 - 12:45	143	135	278
12:45 - 01:00	157	148	305
01:00 - 01:15	142	147	289
01:15 - 01:30	161	143	304
01:30 - 01:45	137	169	306
01:45 - 02:00	150	163	313
02:00 - 02:15	157	149	306
02:15 - 02:30	172	148	320
02:30 - 02:45	181	166	347
02:45 - 03:00	161	188	349
03:00 - 03:15	186	151	337
03:15 - 03:30	186	145	331
03:30 - 03:45	205	165	370
03:45 - 04:00	193	180	373

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	141	137	278
06:15 - 06:30	147	119	266
06:30 - 06:45	102	104	206
06:45 - 07:00	120	100	220
07:00 - 07:15	93	96	189
07:15 - 07:30	97	107	204
07:30 - 07:45	100	88	188
07:45 - 08:00	91	84	175
08:00 - 08:15	89	74	163
08:15 - 08:30	83	74	157
08:30 - 08:45	65	57	122
08:45 - 09:00	88	63	151
09:00 - 09:15	67	39	106
09:15 - 09:30	58	51	109
09:30 - 09:45	48	50	98
09:45 - 10:00	41	45	86

1/14/22, 2:23 PM 15 Minute Report

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

04:00 - 04:15	5	31	36	10:00 - 10:15	133	153	286	04:00 - 04:15	195	152	347	10:00 - 10:15	48	35	83
04:15 - 04:30	7	35	42	10:15 - 10:30	135	150	285	04:15 - 04:30	191	147	338	10:15 - 10:30	34	34	68
04:30 - 04:45	16	31	47	10:30 - 10:45	152	146	298	04:30 - 04:45	218	123	341	10:30 - 10:45	25	26	51
04:45 - 05:00	14	56	70	10:45 - 11:00	111	150	261	04:45 - 05:00	171	161	332	10:45 - 11:00	38	38	76
05:00 - 05:15	24	75	99	11:00 - 11:15	136	159	295	05:00 - 05:15	180	144	324	11:00 - 11:15	41	20	61
05:15 - 05:30	23	90	113	11:15 - 11:30	135	152	287	05:15 - 05:30	176	139	315	11:15 - 11:30	24	26	50
05:30 - 05:45	44	122	166	11:30 - 11:45	149	151	300	05:30 - 05:45	163	134	297	11:30 - 11:45	19	20	39
05:45 - 06:00	26	119	145	11:45 - 12:00	160	131	291	05:45 - 06:00	169	116	285	11:45 - 12:00	22	15	37

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

Run Date: 14-JAN-22

State of Hawaii, Department of Transportation,
Highways Division
15 Minute Volume Report

Site ID: B72007200251
Functional Class: URBAN:PRINCIPAL ARTERIAL - OTHER
Location:

Town: Oahu
Count Type: CLASS
DATE: 03-MAR-20

DIR 1: +MP
Counter Type: Tube

DIR 2: -MP

Final AADT: 15300
Route No: 72

AM COMMUTER PERIOD (05:00-09:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:45 to 09:45 AM		
AM - PEAK HR VOLUME	511	591	1,102
AM - K FACTOR(%)			5.81
AM - D(%)	46.37	53.63	100
DIRECTIONAL PEAK			
AM - PEAK HR TIME	08:45 to 09:45 AM	07:15 to 08:15 AM	
AM - PEAK HR VOLUME	511	649	

PM COMMUTER PERIOD (15:00-19:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 to 04:45 PM		
PM - PEAK HR VOLUME	796	638	1,434
PM - K FACTOR(%)			7.55
PM -D(%)	55.51	44.49	100
DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 to 04:45 PM	03:30 to 04:30 PM	
PM - PEAK HR VOLUME	796	663	

AM PERIOD (00:00-12:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
AM - PEAK HR TIME	11:45 to 12:45 PM		
AM - PEAK HR VOLUME	628	698	1,326
AM - K FACTOR(%)			6.99
AM - D(%)	46.37	53.63	100

PM PERIOD (12:00-24:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PM - PEAK HR TIME	03:45 to 04:45 PM		
PM - PEAK HR VOLUME	796	638	1,434
PM - K FACTOR(%)			7.55
PM -D(%)	55.51	44.49	100

NON COMMUTER PERIOD (09:00-15:00)	DIR 1	DIR 2	TOTAL
TWO DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM		
PEAK HR VOLUME	752	640	1,392
DIRECTIONAL PEAK			
PEAK HR TIME	02:45 to 03:45 PM	11:45 to 12:45 PM	
PEAK HR VOLUME	752	698	

6-HR, 12-HR, 24-HR PERIODS	DIR 1	DIR 2	TOTAL
AM 6-HR PERIOD (06:00-12:00)	2,891	3,584	6,475
AM 12-HR PERIOD (00:00-12:00)	3,223	4,322	7,545
PM 6-HR PERIOD (12:00-18:00)	4,223	3,816	8,039
PM 12-HR PERIOD (12:00-24:00)	5,983	5,454	11,437
24-HR PERIOD (12:00-24:00)	9,206	9,776	18,982
D%	48.5	51.5	100

TIME - AM	DIR1	DIR 2	TOTAL
12:00 - 12:15	11	17	28
12:15 - 12:30	21	14	35

TIME - AM	DIR1	DIR 2	TOTAL
06:00 - 06:15	59	153	212
06:15 - 06:30	79	133	212

TIME - PM	DIR1	DIR 2	TOTAL
12:00 - 12:15	150	188	338
12:15 - 12:30	169	173	342

TIME - PM	DIR1	DIR 2	TOTAL
06:00 - 06:15	185	127	312
06:15 - 06:30	159	120	279

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

12:30 - 12:45	7	15	22	06:30 - 06:45	89	143	232	12:30 - 12:45	135	189	324	06:30 - 06:45	122	134	256
12:45 - 01:00	7	6	13	06:45 - 07:00	112	135	247	12:45 - 01:00	183	147	330	06:45 - 07:00	117	78	195
01:00 - 01:15	22	7	29	07:00 - 07:15	125	145	270	01:00 - 01:15	170	158	328	07:00 - 07:15	113	109	222
01:15 - 01:30	7	3	10	07:15 - 07:30	114	154	268	01:15 - 01:30	171	168	339	07:15 - 07:30	104	83	187
01:30 - 01:45	11	5	16	07:30 - 07:45	105	177	282	01:30 - 01:45	162	148	310	07:30 - 07:45	70	116	186
01:45 - 02:00	9	4	13	07:45 - 08:00	120	151	271	01:45 - 02:00	162	130	292	07:45 - 08:00	69	112	181
02:00 - 02:15	10	5	15	08:00 - 08:15	100	167	267	02:00 - 02:15	186	136	322	08:00 - 08:15	88	87	175
02:15 - 02:30	5	6	11	08:15 - 08:30	131	149	280	02:15 - 02:30	185	186	371	08:15 - 08:30	81	73	154
02:30 - 02:45	6	7	13	08:30 - 08:45	108	151	259	02:30 - 02:45	130	176	306	08:30 - 08:45	69	81	150
02:45 - 03:00	7	9	16	08:45 - 09:00	136	131	267	02:45 - 03:00	204	137	341	08:45 - 09:00	83	60	143
03:00 - 03:15	6	17	23	09:00 - 09:15	129	131	260	03:00 - 03:15	180	151	331	09:00 - 09:15	74	60	134
03:15 - 03:30	6	11	17	09:15 - 09:30	125	159	284	03:15 - 03:30	184	175	359	09:15 - 09:30	69	52	121
03:30 - 03:45	6	15	21	09:30 - 09:45	121	170	291	03:30 - 03:45	184	177	361	09:30 - 09:45	74	47	121
03:45 - 04:00	9	15	24	09:45 - 10:00	126	158	284	03:45 - 04:00	189	149	338	09:45 - 10:00	38	67	105

HDOT RIMS Traffic Station Analyzer (v47)

Log Out Print RS

04:00 - 04:15	9	25	34	10:00 - 10:15	123	129	252	04:00 - 04:15	183	159	342	10:00 - 10:15	42	33	75
04:15 - 04:30	9	32	41	10:15 - 10:30	127	147	274	04:15 - 04:30	203	178	381	10:15 - 10:30	38	53	91
04:30 - 04:45	18	41	59	10:30 - 10:45	138	137	275	04:30 - 04:45	221	152	373	10:30 - 10:45	35	37	72
04:45 - 05:00	15	59	74	10:45 - 11:00	134	152	286	04:45 - 05:00	172	147	319	10:45 - 11:00	29	31	60
05:00 - 05:15	10	80	90	11:00 - 11:15	136	140	276	05:00 - 05:15	174	149	323	11:00 - 11:15	25	21	46
05:15 - 05:30	23	103	126	11:15 - 11:30	136	163	299	05:15 - 05:30	167	164	331	11:15 - 11:30	38	24	62
05:30 - 05:45	41	128	169	11:30 - 11:45	144	161	305	05:30 - 05:45	203	138	341	11:30 - 11:45	22	21	43
05:45 - 06:00	57	114	171	11:45 - 12:00	174	148	322	05:45 - 06:00	156	141	297	11:45 - 12:00	16	12	28

Type of report: Tube Count - Volume Data

LOCATION: Kalanianaole Hwy east of SlaminQp J t
BC #D1 5: 670P4E62
J FRCISIC LOCATION:
DI, RCTION: R1W 1
CIT/ NITATR: Y aimanaloW#l
DATR: #an 2E 2E22 - #an 2E 2E22

J tart Time	d on	Tue	Y eh	Tvu 2E #an 22	Sri	AgeraQe Y eekhay 67-min Traffic	J at	J un	AgeraQe Y eek 67-min Traffic	AgeraQe Y eek Frofile
62:EE Ad				22		22			22	
62:67 Ad				29		29			29	
62:9E Ad				68		68			68	
62:47 Ad				22		22			22	
E6:EE Ad				69		69			69	
E6:67 Ad				62		62			62	
E6:9E Ad				3		3			3	
E6:47 Ad				67		67			67	
E2:EE Ad				6E		6E			6E	
E2:67 Ad				63		63			63	
E2:9E Ad				22		22			22	
E2:47 Ad				67		67			67	
E9:EE Ad				22		22			22	
E9:67 Ad				2E		2E			2E	
E9:9E Ad				22		22			22	
E9:47 Ad				92		92			92	
E4:EE Ad				2P		2P			2P	
E4:67 Ad				42		42			42	
E4:9E Ad				72		72			72	
E4:47 Ad				08		08			08	
E7:EE Ad				33		33			33	
E7:67 Ad				627		627			627	
E7:9E Ad				606		606			606	
E7:47 Ad				639		639			639	
Day Total										
% Y eekhay AgeraQe										
% Y eek AgeraQe										
Ad Feak 67-min Vol										
Fd Feak 67-min Vol										

Comments:

, eport Qenerateh on 6N24N2E22 7:74 Ad

JOU, CR: Buality CountsWLLC (vttp:NMwww.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Kalanianaole Hwy east of SlaminQp J t
BC #D1 5: 670P4E62
J FRCISIC LOCATION:
DI, RCTION: R1W 1
CIT/ NITATR: Y aimanaloW#l
DATR: #an 2E 2E22 - #an 2E 2E22

J tart Time	d on	Tue	Y eh	Tvu 2E #an 22	Sri	AgeraQe Y eekhay 67-min Traffic	J at	J un	AgeraQe Y eek 67-min Traffic	AgeraQe Y eek Frofile
E0:EE Ad				633		633			633	
E0:67 Ad				249		249			249	
E0:9E Ad				2P6		2P6			2P6	
E0:47 Ad				280		280			280	
EP:EE Ad				998		998			998	
EP:67 Ad				974		974			974	
EP:9E Ad				282		282			282	
EP:47 Ad				947		947			947	
E8:EE Ad				970		970			970	
E8:67 Ad				**907**		**907**			**907**	
E8:9E Ad				282		282			282	
E8:47 Ad				232		232			232	
E3:EE Ad				233		233			233	
E3:67 Ad				209		209			209	
E3:9E Ad				976		976			976	
E3:47 Ad				966		966			966	
6E:EE Ad				28P		28P			28P	
6E:67 Ad				926		926			926	
6E:9E Ad				9E8		9E8			9E8	
6E:47 Ad				994		994			994	
66:EE Ad				998		998			998	
66:67 Ad				969		969			969	
66:9E Ad				92E		92E			92E	
66:47 Ad				97E		97E			97E	
Day Total										
% Y eekhay AgeraQe										
% Y eek AgeraQe										
Ad Feak 67-min Vol										
Fd Feak 67-min Vol										

Comments:

, eport Qenerateh on 6N24N2E22 7:74 Ad

JOU, CR: Buality CountsWLLC (vttp:NMwww.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Kalanianaole Hwy east of SlaminOp J t
J FRCISIC LOCATION:
CIT/ NITATR: Y aimanaloW#l

B C #D1 5: 670P4E62
DI, RCTION: R1W 1
DATR: #an 2E 2E22 - #an 2E 2E22

J tart Time	d on	Tue	Y eh	Tvu 2E #an 22	Sri	AgeraOe Y eekhay 67-min Traffic	J at	J un	AgeraOe Y eek 67-min Traffic	AgeraOe Y eek Frofile
62:EE Fd				998		998			998	
62:67 Fd				970		970			970	
62:9E Fd				962		962			962	
62:47 Fd				900		900			900	
E6:EE Fd				947		947			947	
E6:67 Fd				**903**		**903**			**903**	
E6:9E Fd				927		927			927	
E6:47 Fd				902		902			902	
E2:EE Fd				902		902			902	
E2:67 Fd				287		287			287	
E2:9E Fd				273		273			273	
E2:47 Fd				977		977			977	
E9:EE Fd				282		282			282	
E9:67 Fd				282		282			282	
E9:9E Fd				269		269			269	
E9:47 Fd				674		674			674	
E4:EE Fd				29P		29P			29P	
E4:67 Fd				242		242			242	
E4:9E Fd				2P4		2P4			2P4	
E4:47 Fd				2P9		2P9			2P9	
E7:EE Fd				97E		97E			97E	
E7:67 Fd				968		968			968	
E7:9E Fd				273		273			273	
E7:47 Fd				944		944			944	
Day Total										
% Y eekhay AgeraOe										
% Y eek AgeraOe										
Ad Feak 67-min Vol										
Fd Feak 67-min Vol										

Comments:

, eport Oenerateh on 6N24N2E22 7:74 Ad

JOU, CR: B uality CountsWLLC (vttp:MMwww.qualitycounts.net)

Type of report: Tube Count - Volume Data

LOCATION: Kalanianaole Hwy east of SlaminOp J t
J FRCISIC LOCATION:
CIT/ NITATR: Y aimanaloW#l

B C #D1 5: 670P4E62
DI, RCTION: R1W 1
DATR: #an 2E 2E22 - #an 2E 2E22

J tart Time	d on	Tue	Y eh	Tvu 2E #an 22	Sri	AgeraOe Y eekhay 67-min Traffic	J at	J un	AgeraOe Y eek 67-min Traffic	AgeraOe Y eek Frofile
E0:EE Fd				96E		96E			96E	
E0:67 Fd				962		962			962	
E0:9E Fd				280		280			280	
E0:47 Fd				2P7		2P7			2P7	
EP:EE Fd				282		282			282	
EP:67 Fd				26E		26E			26E	
EP:9E Fd				6P7		6P7			6P7	
EP:47 Fd				698		698			698	
E8:EE Fd				646		646			646	
E8:67 Fd				627		627			627	
E8:9E Fd				62E		62E			62E	
E8:47 Fd				36		36			36	
E3:EE Fd				6E3		6E3			6E3	
E3:67 Fd				30		30			30	
E3:9E Fd				666		666			666	
E3:47 Fd				P9		P9			P9	
6E:EE Fd				08		08			08	
6E:67 Fd				82		82			82	
6E:9E Fd				00		00			00	
6E:47 Fd				04		04			04	
66:EE Fd				48		48			48	
66:67 Fd				49		49			49	
66:9E Fd				9P		9P			9P	
66:47 Fd				28		28			28	
Day Total				63E29		63E29			63E29	
% Y eekhay AgeraOe				6EE%						
% Y eek AgeraOe				6EE%		6EE%				
Ad Feak 67-min Vol				8:67 Ad 907		8:67 Ad 907			8:67 Ad 907	
Fd Feak 67-min Vol				6:67 Fd 903		6:67 Fd 903			6:67 Fd 903	

Comments:

, eport Oenerateh on 6N24N2E22 7:74 Ad

JOU, CR: B uality CountsWLLC (vttp:MMwww.qualitycounts.net)

Quality Counts
DATA THAT DRIVES COMMUNITIES

APPENDIX B

Existing Intersection Turning Counts

Existing AM Intersection Turning Counts

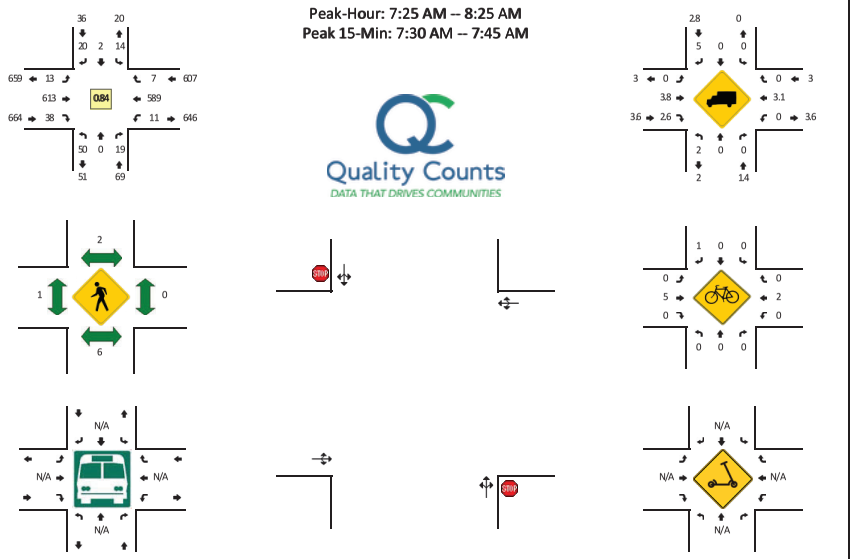
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Moole St -- Kalanianaole Hwy
CITY/STATE: Waimanalo, HI

QC JOB #: 15674001
DATE: Thu, Jan 13 2022

Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



5-Min Count Period Beginning At	Moole St (Northbound)				Moole St (Southbound)				Kalanianaole Hwy (Eastbound)				Kalanianaole Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	3	1	2	0	0	0	1	0	0	34	2	0	0	26	2	0	71	
7:05 AM	3	0	1	0	0	0	4	0	1	42	0	0	1	51	0	0	103	
7:10 AM	6	0	0	0	1	0	2	0	0	33	2	0	0	42	0	0	86	
7:15 AM	3	0	2	0	0	0	5	0	0	33	3	0	1	45	1	0	93	
7:20 AM	3	0	1	0	2	1	3	0	0	40	3	0	1	46	0	0	100	
7:25 AM	9	0	2	0	0	0	4	0	0	47	3	0	1	46	1	0	113	
7:30 AM	3	0	2	0	2	0	3	0	1	68	4	0	1	66	0	0	150	
7:35 AM	8	0	4	0	1	1	1	0	1	55	3	0	2	54	0	0	130	
7:40 AM	4	0	2	0	2	1	1	0	1	55	1	0	2	61	0	0	130	
7:45 AM	3	0	1	0	1	0	4	0	1	59	1	0	2	43	1	0	116	
7:50 AM	2	0	3	0	1	0	0	0	2	59	5	0	2	60	2	0	136	
7:55 AM	5	0	0	0	3	0	3	0	3	61	7	0	1	55	1	0	139	1367
8:00 AM	6	0	3	0	0	0	0	0	2	53	1	0	0	33	2	0	100	1396
8:05 AM	3	0	1	0	1	0	1	0	1	34	1	0	0	38	0	0	80	1373
8:10 AM	1	0	0	0	2	0	0	0	0	36	5	0	0	56	0	0	100	1387
8:15 AM	4	0	1	0	1	0	1	0	1	36	3	0	0	30	0	0	77	1371
8:20 AM	2	0	0	0	0	0	2	0	0	50	4	0	0	47	0	0	105	1376
8:25 AM	1	0	2	0	1	0	2	0	0	40	3	0	2	39	1	0	91	1354
8:30 AM	3	0	1	0	0	0	2	0	1	36	2	0	1	38	1	0	85	1289
8:35 AM	2	0	1	0	0	0	1	0	0	35	3	0	0	47	2	0	91	1250
8:40 AM	5	0	2	0	0	0	0	0	2	41	0	0	0	45	0	0	95	1215
8:45 AM	2	0	0	0	0	0	4	0	3	36	0	0	0	46	0	0	91	1190
8:50 AM	0	0	1	0	1	0	1	0	0	23	5	0	1	30	1	0	63	1117
8:55 AM	1	0	1	0	0	0	2	0	1	32	1	0	0	36	2	0	76	1054
9:00 AM	3	0	0	0	0	0	0	0	1	53	0	0	1	23	0	0	81	1035
9:05 AM	3	0	1	0	0	1	2	0	0	35	4	0	0	46	1	0	93	1048
9:10 AM	1	0	1	0	1	0	5	0	3	34	2	0	0	31	1	0	79	1027
9:15 AM	3	0	0	0	2	0	2	0	2	41	2	0	0	41	0	0	93	1043
9:20 AM	2	0	1	0	0	0	0	0	1	47	0	0	1	41	0	0	93	1031
9:25 AM	4	0	1	0	0	0	0	0	0	41	2	0	0	35	0	0	83	1023
9:30 AM	3	0	0	0	0	0	2	0	0	38	3	0	0	35	1	0	82	1020
9:35 AM	4	0	0	0	0	0	2	0	0	30	1	0	2	41	0	0	80	1009
9:40 AM	2	0	3	0	1	0	2	0	1	36	0	0	0	28	0	0	73	987
9:45 AM	1	0	1	0	1	1	1	0	3	43	4	0	0	41	0	0	96	992
9:50 AM	2	1	1	0	3	0	0	0	3	41	0	0	0	44	1	0	96	1025
9:55 AM	1	1	1	0	0	0	1	0	0	38	0	0	0	23	1	0	66	1015
10:00 AM	4	1	0	0	1	0	0	0	0	36	1	0	1	35	0	0	79	1013
10:05 AM	1	0	1	0	0	0	3	0	1	38	1	0	0	47	0	0	92	1012

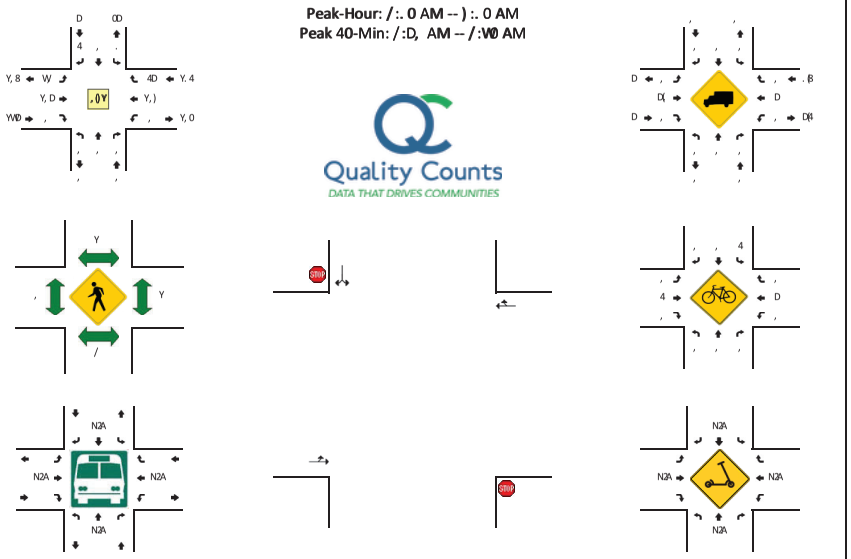
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: K aimanalo Health Center Qwy JK estB-- #alanianaole Hwy
CIT32STATE: K aimanalo9HI

1 C 5O6 7: 40Y/W, D
QATE: Thu95an 4D. , , .

Peak-Hour: /:. 0 AM --):. 0 AM
Peak 40-Min: /:D, AM -- /:W0 AM



0-Min Count Period 6eginning At	K aimanalo Health Center Qwy JK estB JNorthboundB				K aimanalo Health Center Qwy JK estB JSouthboundB				#alanianaole Hwy JEastboundB				#alanianaole Hwy JK estboundB				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
/:, , AM	,	,	,	,	,	,	,	,	,	.)	,	,	,	DY	,	,	YW	
/:, 0 AM	,	,	,	,	,	,	,	,	4	0,	,	,	,	D8	,	,	8,	
/:4, AM	,	,	,	,	,	,	,	,	4	DW	,	,	,	0,	,	,	) 0	
/:40 AM	,	,	,	,	,	,	,	,	,	D0	,	,	,	W	4	,	) W	
/:. , AM	,	,	,	,	,	,	4	,	W	D.	,	,	,	W4	.	,	/)	
/:. 0 AM	,	,	,	,	,	,	,	,	W	W	,	,	,	W	4	,	80	
/:D, AM	,	,	,	,	,	,	,	,	Y	W0	,	,	,	Y/	4	,	448	
/:D0 AM	,	,	,	,	,	,	,	,	W	/	,	,	,	YY	4	,	4W4	
/:W AM	,	,	,	,	,	,	,	,	D	W	,	,	,	0/	.	,	4.)	
/:W0 AM	,	,	,	,	,	,	,	,	/	0)	,	,	,	W8	4	,	440	
/:0, AM	,	,	,	,	,	,	,	,	W	0Y	,	,	,	Y4	.	,	4. D	
/:00 AM	,	,	,	,	,	,	,	,	Y	08	,	,	,	0/	.	,	4. W	4. , Y
):. , AM	,	,	,	,	,	,	4	,	4	0W	,	,	,	W4	.	,	88	4. Y4
):. 0 AM	,	,	,	,	.	,	,	,	.	0Y	,	,	,	D/	,	,	8/	4. Y)
):4, AM	,	,	,	,	,	,	,	,	4	D/	,	,	,	W0	4	,	) W	4. Y/
):40 AM	,	,	,	,	,	,	,	,	,	D)	,	,	,	W	,	,	) W	4. Y/
):. , AM	,	,	,	,	,	,	,	,	.	DY	,	,	,	W	,	,	/)	4. Y/
):. 0 AM	,	,	,	,	,	,	,	,	,	0,	,	,	,	W	,	,	8/	4. Y8
):D, AM	,	,	,	,	,	,	4	,	,	W4	,	,	,	W	4	,	) D	4. DD
):D0 AM	,	,	,	,	,	,	,	,	,	DY	,	,	,	D.	,	,	Y)	44Y,
):W AM	,	,	,	,	,	,	,	,	,	W	,	,	,	Y,	4	,	4, D	4400
):W0 AM	,	,	,	,	,	,	,	,	,	D8	,	,	,	D8	,	,	/)	444)
):0, AM	,	,	,	,	,	,	,	,	,	D.	,	,	,	D)	4	,	/4	4, YY
):00 AM	,	,	,	,	,	,	,	,	,	DD	,	,	,	D8	,	,	/.	4, 4W
8:, , AM	,	,	,	,	,	,	4	,	,	D.	,	,	,	DD	4	,	Y/	8) .
8:, 0 AM	,	,	,	,	4	,	,	,	,	W0	,	,	,	. 0	,	,	/4	80Y
8:4, AM	,	,	,	,	,	,	4	,	,	WW	,	,	,	0,	,	,	80	8Y/
8:40 AM	,	,	,	,	,	,	,	,	,	D.	,	,	,	W0	,	,	/0	80)
8:. , AM	,	,	,	,	,	,	,	,	,	W	,	,	,	.)	,	,	/Y	80Y
8:. 0 AM	,	,	,	,	,	,	,	,	,	W	,	,	,	W	,	,	) W	8W0
8:D, AM	,	,	,	,	,	,	,	,	,	WW	,	,	,	D8	4	,	) W	8WW
8:D0 AM	,	,	,	,	,	,	,	,	,	D0	,	,	,	D4	,	,	YY	8W
8:W AM	,	,	,	,	,	,	,	,	,	D/	,	,	,	WW	,	,	) 4	8. ,
8:W0 AM	,	,	,	,	,	,	,	,	,	D/	,	,	,	D.	,	,	Y8	844
8:0, AM	,	,	,	,	,	,	,	,	,	0D	,	,	,	WW	,	,	8/	8D/
8:00 AM	,	,	,	,	,	,	,	,	4	DY	,	,	,	D4	,	,	/,	8D0
4, :, , AM	,	,	,	,	4	,	,	,	,	D/	,	,	,	.)	4	,	Y/	8D0

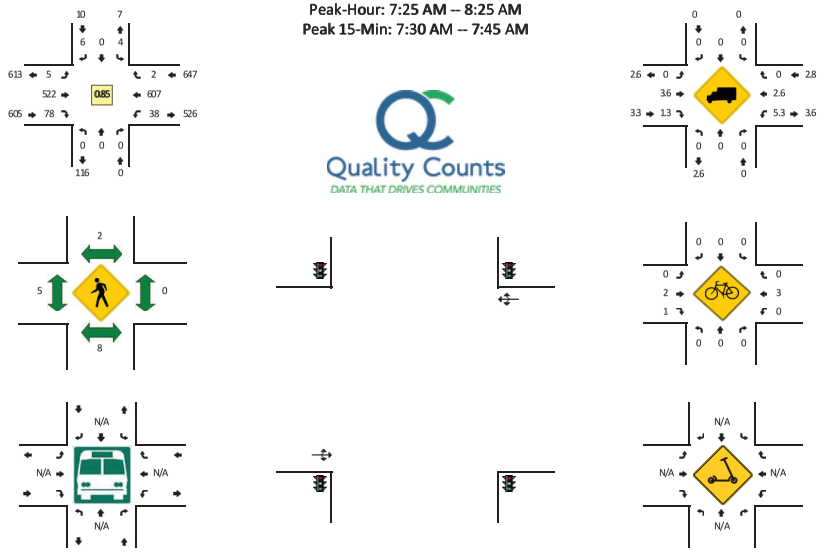
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Waimanalo Elementary School Entrance/St George Church Dwy -- Kalanianaole Hwy
CITY/STATE: Waimanalo, HI

QC JOB #: 15674005
DATE: Thu, Jan 13 2022

Peak-Hour: 7:25 AM -- 8:25 AM
Peak 15-Min: 7:30 AM -- 7:45 AM



5-Min Count Period Beginning At	Waimanalo Elementary School Entrance/St George Church Dwy (Northbound)				Waimanalo Elementary School Entrance/St George Church Dwy (Southbound)				Kalanianaole Hwy (Eastbound)				Kalanianaole Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	0	0	0	0	0	0	0	0	1	31	2	0	0	37	0	0	71	
7:05 AM	0	0	0	0	0	0	0	0	0	42	3	0	0	37	0	0	82	
7:10 AM	0	0	0	0	0	0	0	0	0	28	3	0	2	46	1	0	80	
7:15 AM	0	0	0	0	0	0	0	0	0	35	1	0	5	53	0	0	94	
7:20 AM	0	0	0	0	0	0	0	0	0	29	7	0	4	41	0	0	81	
7:25 AM	0	0	0	0	1	0	0	0	1	36	6	0	1	53	0	0	98	
7:30 AM	0	0	0	0	1	0	2	0	0	47	9	0	7	63	0	0	129	
7:35 AM	0	0	0	0	1	0	0	0	2	46	13	0	6	59	1	0	128	
7:40 AM	0	0	0	0	0	0	0	0	0	45	9	0	7	53	0	0	114	
7:45 AM	0	0	0	0	0	0	0	0	0	44	13	0	5	47	0	0	109	
7:50 AM	0	0	0	0	0	0	1	0	1	46	12	0	2	71	0	0	133	
7:55 AM	0	0	0	0	1	0	0	0	1	41	9	0	5	55	0	0	112	1231
8:00 AM	0	0	0	0	0	0	0	0	0	52	5	0	1	39	0	0	97	1257
8:05 AM	0	0	0	0	0	0	0	0	0	47	0	0	1	39	0	0	87	1262
8:10 AM	0	0	0	0	0	0	0	0	0	39	0	0	2	41	0	0	82	1264
8:15 AM	0	0	0	0	0	0	2	0	0	37	0	0	0	43	0	0	82	1252
8:20 AM	0	0	0	0	0	0	1	0	0	42	2	0	1	44	1	0	91	1262
8:25 AM	0	0	0	0	0	0	1	0	0	41	1	0	1	45	0	0	89	1253
8:30 AM	0	0	0	0	0	0	1	0	0	41	1	0	0	36	1	0	80	1204
8:35 AM	0	0	0	0	0	0	0	0	0	36	0	0	1	45	0	0	82	1158
8:40 AM	0	0	0	0	0	0	0	0	0	45	1	0	0	52	0	0	98	1142
8:45 AM	0	0	0	0	0	0	0	0	0	33	1	0	0	37	0	0	71	1104
8:50 AM	0	0	0	0	0	0	0	0	0	33	1	0	1	37	0	0	72	1043
8:55 AM	0	0	0	0	0	0	0	0	0	30	0	0	1	44	1	0	76	1007
9:00 AM	0	0	0	0	0	0	1	0	0	44	1	0	3	29	1	0	79	989
9:05 AM	0	0	0	0	0	1	0	0	0	37	1	0	0	29	0	0	68	970
9:10 AM	0	0	0	0	1	0	0	0	0	40	0	0	1	45	1	0	88	976
9:15 AM	0	0	0	0	0	0	0	0	0	40	0	0	1	44	0	0	85	979
9:20 AM	0	0	0	0	0	0	0	0	0	40	1	0	0	32	0	0	73	961
9:25 AM	0	0	0	0	0	0	0	0	1	49	0	0	0	38	0	0	88	960
9:30 AM	0	0	0	0	0	0	0	0	1	41	3	0	0	39	0	0	84	964
9:35 AM	0	0	0	0	0	0	1	0	0	26	0	0	2	42	0	0	71	953
9:40 AM	0	0	0	0	0	0	0	0	0	43	0	0	0	39	0	0	82	937
9:45 AM	0	0	0	0	1	0	0	0	0	36	0	0	1	28	0	0	66	932
9:50 AM	0	0	0	0	1	0	0	0	0	54	0	0	0	42	0	0	97	957
9:55 AM	0	0	0	0	0	0	0	0	0	34	0	0	0	34	0	0	68	949

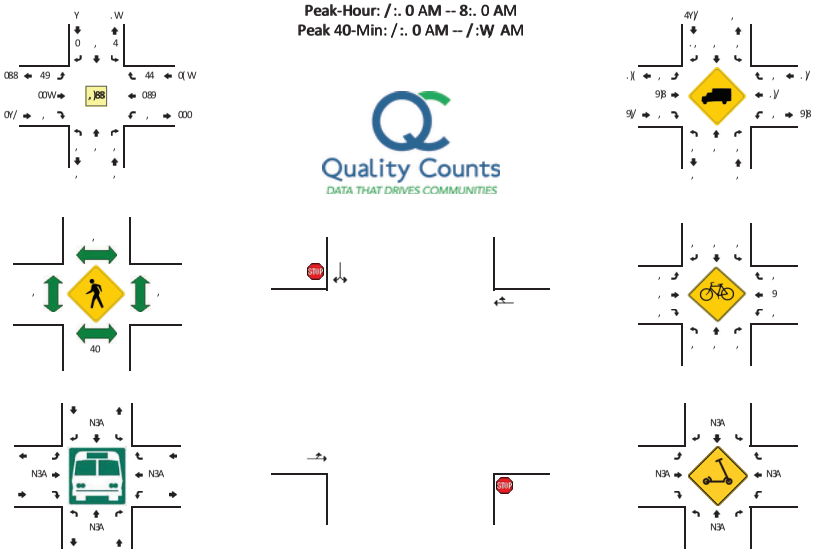
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: K aimanalo Health Center Qwy JEastB-- #alanianaole Hwy
CITDBSTATE: K aimanalo2HI

1 C 5O6 7: 40Y/W , /
QATE: Thu25an 49 . , . .

Peak-Hour: /:. 0 AM -- 8:. 0 AM
Peak 40-Min: /:. 0 AM -- /:W AM



0-Min Count Period 6eginning At	K aimanalo Health Center Qwy JEastB JNorthboundB				K aimanalo Health Center Qwy JEastB JSouthboundB				#alanianaole Hwy JEastboundB				#alanianaole Hwy JK estboundB				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
/:, , AM	,	,	,	,	,	,	,	,	,	W9	,	,	,	9Y	,	,	/(	
/:, 0 AM	,	,	,	,	,	,	,	,	,	. /	,	,	,	W	,	,	/W	
/:4, AM	,	,	,	,	,	,	,	,	,	9/	,	,	,	Y,	,	,	(/	
/:40 AM	,	,	,	,	,	,	,	,	.	. 4	,	,	,	W4	,	,	YW	
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/:00 AM	,	,	,	,	,	,	,	,	4	00	,	,	,	9/	4	,	(W	44W
8:, , AM	,	,	,	,	4	,	4	,	4	W	,	,	,	98	,	,	88	4400
8:, 0 AM	,	,	,	,	,	,	,	,	,	90	,	,	,	WW	4	,	8,	44Y4
8:4, AM	,	,	,	,	,	,	,	,	.	W	,	,	,	W	,	,	8W	44W8
8:40 AM	,	,	,	,	,	,	,	,	,	9(	,	,	,	W	.	,	8/	44/4
8:. , AM	,	,	,	,	,	,	,	,	,	W9	,	,	,	W9	4	,	8/	44Y/
8:. 0 AM	,	,	,	,	,	,	4	,	9	9(	,	,	,	90	.	,	8,	449.
8:9, AM	,	,	,	,	,	,	4	,	.	9Y	,	,	,	WW	4	,	8W	44, 9
8:90 AM	,	,	,	,	.	,	4	,	,	W4	,	,	,	0,	4	,	(0	4, (W
8:W AM	,	,	,	,	4	,	,	,	.	9.	,	,	,	9/	,	,	/.	4, /.
8:W0 AM	,	,	,	,	4	,	,	,	.	99	,	,	,	98	4	,	/0	4, 9/
8:0, AM	,	,	,	,	.	,	.	,	,	. (	,	,	.	WW	,	,	//	4, , 9
8:00 AM	,	,	,	,	4	,	,	,	.	WW	,	,	,	99	,	,	8,	(8(
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4, :, , AM	,	,	,	,	9	,	4	,	4	9(	,	,	,	9,	,	,	/W	(W

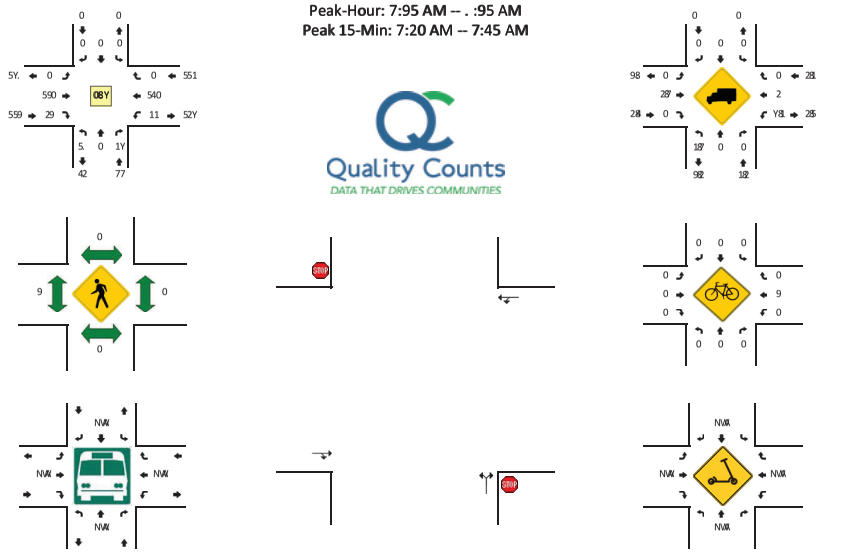
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Inoaole St -- Kalanianaole Hwy
CIT/VSTATE: , aimanaloDHI

QC JOB #: 1567400Y
3ATE: ThuDJan 12 9099

Peak-Hour: 7:95 AM -- . :95 AM
Peak 15-Min: 7:20 AM -- 7:45 AM



5-Min Count Period Beginning At	Inoaole St (Northbound)				Inoaole St (Southbound)				Kalanianaole Hwy (Eastbound)				Kalanianaole Hwy (, estbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
7:00 AM	5	0	0	0	0	0	0	0	0	21	1	0	0	92	0	0	60	
7:05 AM	.	0	1	0	0	0	0	0	0	20	9	0	0	4Y	0	0	Y0	
7:10 AM	5	0	2	0	0	0	0	0	0	21	0	0	0	40	0	0	7Y	
7:15 AM	5	0	0	0	0	0	0	0	0	2.	9	0	0	44	0	0	. Y	
7:90 AM	5	0	0	0	0	0	0	0	0	9Y	1	0	9	26	0	0	72	
7:95 AM	6	0	1	0	0	0	0	0	0	24	0	0	9	57	0	0	100	
7:20 AM	6	0	2	0	0	0	0	0	0	4Y	5	0	1	5.	0	0	199	
7:25 AM	2	0	2	0	0	0	0	0	0	4Y	9	0	0	46	0	0	102	
7:40 AM	Y	0	0	0	0	0	0	0	0	4Y	1	0	9	46	0	0	107	
7:45 AM	.	0	2	0	0	0	0	0	0	44	1	0	9	42	0	0	101	
7:50 AM	6	0	9	0	0	0	0	0	0	45	9	0	1	4Y	0	0	105	
7:55 AM	4	0	1	0	0	0	0	0	0	50	6	0	9	4Y	0	0	119	1141
. :00 AM	2	0	0	0	0	0	0	0	0	45	5	0	0	21	0	0	. 4	1165
. :05 AM	9	0	2	0	0	0	0	0	0	41	4	0	0	49	0	0	Y9	1167
. :10 AM	2	0	9	0	0	0	0	0	0	9.	9	0	1	4.	0	0	. 4	1179
. :15 AM	9	0	0	0	0	0	0	0	0	47	9	0	0	97	0	0	7.	1161
. :90 AM	6	0	1	0	0	0	0	0	0	2Y	9	0	0	44	0	0	Y9	11. 0
. :95 AM	5	0	0	0	0	0	0	0	0	40	2	0	0	40	0	0	. .	116.
. :20 AM	6	0	1	0	0	0	0	0	0	9.	0	0	0	29	0	0	67	1112
. :25 AM	2	0	1	0	0	0	0	0	0	42	2	0	0	47	0	0	Y7	1107
. :40 AM	2	0	0	0	0	0	0	0	0	49	2	0	1	41	0	0	Y0	10Y0
. :45 AM	0	0	1	0	0	0	0	0	0	21	4	0	1	4.	0	0	. 5	1074
. :50 AM	9	0	1	0	0	0	0	0	0	94	9	0	0	20	0	0	5Y	109.
. :55 AM	9	0	1	0	0	0	0	0	0	9Y	4	0	0	42	0	0	7Y	YY5
Y:00 AM	1	0	1	0	0	0	0	0	0	40	4	0	1	1Y	0	0	66	Y77
Y:05 AM	9	0	1	0	0	0	0	0	0	2Y	1	0	9	41	0	0	. 6	Y71
Y:10 AM	9	0	0	0	0	0	0	0	0	24	2	0	0	20	0	0	6Y	Y56
Y:15 AM	5	0	1	0	0	0	0	0	0	2.	2	0	9	2Y	0	0	. .	Y66
Y:90 AM	0	0	0	0	0	0	0	0	0	47	6	0	0	40	0	0	Y2	Y67
Y:95 AM	9	0	0	0	0	0	0	0	0	25	0	0	1	25	0	0	72	Y59
Y:20 AM	1	0	1	0	0	0	0	0	0	2Y	1	0	1	24	0	0	77	Y69
Y:25 AM	5	0	0	0	0	0	0	0	0	21	0	0	0	26	0	0	79	Y27
Y:40 AM	2	0	9	0	0	0	0	0	0	24	6	0	1	97	0	0	72	Y90
Y:45 AM	2	0	1	0	0	0	0	0	0	2Y	1	0	1	2Y	0	0	. 4	Y1Y
Y:50 AM	2	0	1	0	0	0	0	0	0	50	0	0	1	27	0	0	Y9	Y59
Y:55 AM	9	0	0	0	0	0	0	0	0	2Y	2	0	9	92	0	0	6Y	Y49
10:00 AM	9	0	0	0	0	0	0	0	0	21	1	0	1	25	0	0	70	Y46
10:05 AM	4	0	1	0	0	0	0	0	0	40	9	0	1	41	0	0	. Y	Y4Y

Existing PM Intersection Turning Counts

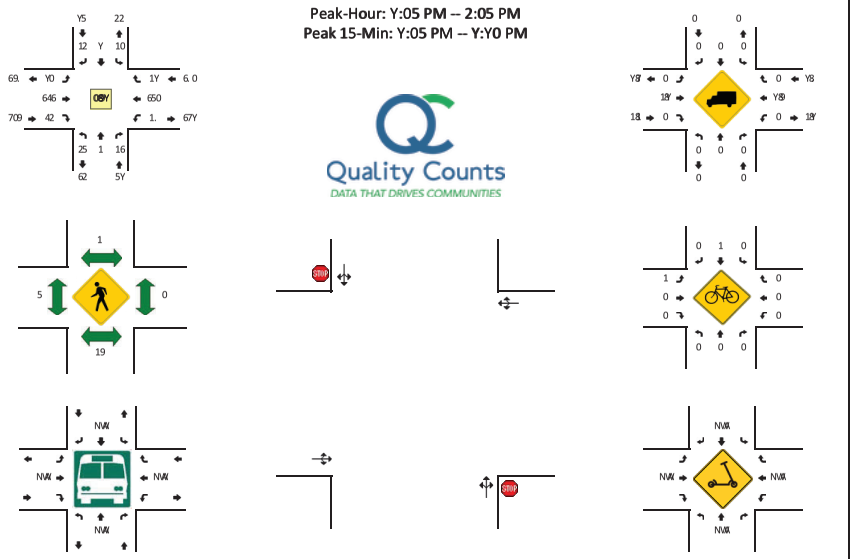
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Moole St -- Kalanianaole Hwy
CIT/VSTATE: , aimanaloDHI

QC JOB #: 1567400Y
3ATE: ThuDJan 12 Y0YY

Peak-Hour: Y:05 PM -- 2:05 PM
Peak 15-Min: Y:05 PM -- Y:Y0 PM



5-Min Count Period Beginning At	Moole St (Northbound)				Moole St (Southbound)				Kalanianaole Hwy (Eastbound)				Kalanianaole Hwy (, estbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
Y:00 PM	Y	0	2	0	1	0	1	0	1	49	.	0	1	55	1	0	1YY	
Y:05 PM	7	0	1	0	0	0	Y	0	Y	60	1	0	2	4.	0	0	1Y4	
Y:10 PM	6	0	1	0	Y	0	Y	0	1	6Y	Y	0	0	60	Y	0	12.	
Y:15 PM	0	0	Y	0	1	0	0	0	0	6Y	1	0	0	66	2	0	125	
Y:Y0 PM	0	0	1	0	1	0	Y	0	Y	49	Y	0	0	61	0	0	11.	
Y:Y5 PM	Y	0	0	0	1	0	0	0	2	29	6	0	2	56	0	0	110	
Y:20 PM	Y	0	1	0	1	0	Y	0	1	55	Y	0	1	47	0	0	11Y	
Y:25 PM	Y	0	2	0	Y	0	0	0	Y	50	.	0	0	64	2	0	124	
Y:40 PM	4	0	0	0	1	0	1	0	Y	57	4	0	1	50	1	0	1Y1	
Y:45 PM	Y	0	1	0	0	1	0	0	2	57	.	0	Y	41	1	0	116	
Y:50 PM	2	0	Y	0	0	1	1	0	1	55	6	0	2	5Y	Y	0	1Y6	
Y:55 PM	1	0	Y	0	0	0	1	0	Y	52	Y	0	Y	54	0	0	117	1472
2:00 PM	6	1	Y	0	1	0	Y	0	1	47	1	0	2	51	0	0	115	1466
2:05 PM	5	0	2	0	Y	0	1	0	1	54	5	0	0	51	Y	0	1Y4	1466
2:10 PM	1	0	2	0	1	0	0	0	1	50	11	0	1	52	0	0	1Y1	1449
2:15 PM	Y	0	1	0	0	0	1	0	2	54	4	0	0	50	0	0	115	14Y9
2:Y0 PM	4	0	Y	0	Y	0	4	0	Y	51	0	0	1	51	1	0	11.	14Y9
2:Y5 PM	1	0	0	0	0	0	1	0	2	57	7	0	1	60	Y	0	12Y	1451
2:20 PM	4	0	Y	0	0	0	2	0	Y	60	Y	0	0	56	Y	0	121	1470
2:25 PM	Y	0	1	0	1	0	0	0	2	59	1	0	1	60	1	0	1Y9	1465
2:40 PM	4	0	Y	0	1	0	0	0	0	4Y	4	0	0	55	1	0	109	1452
2:45 PM	1	0	0	0	0	0	0	0	1	42	4	0	Y	44	0	0	95	142Y
2:50 PM	1	0	1	0	1	0	1	0	0	56	5	0	0	61	1	0	1Y7	1422
2:55 PM	1	0	0	0	2	0	1	0	1	5.	5	0	1	56	0	0	1Y6	144Y
4:00 PM	Y	0	Y	0	1	0	1	0	1	4Y	7	0	2	56	0	0	115	144Y
4:05 PM	4	0	1	0	0	0	1	0	1	51	2	0	0	50	0	0	111	14Y9
4:10 PM	5	0	4	0	0	0	1	0	6	52	Y	0	0	51	0	0	1YY	1420
4:15 PM	4	0	1	0	1	1	1	0	Y	59	2	0	0	56	0	0	1Y.	1442
4:Y0 PM	Y	0	1	0	0	0	Y	0	1	46	6	0	Y	55	2	0	11.	1442
4:Y5 PM	2	0	0	0	0	0	Y	0	Y	54	4	0	0	45	Y	0	11Y	14Y2
4:20 PM	1	0	0	0	1	0	0	0	2	49	5	0	1	72	0	0	122	14Y5
4:25 PM	0	0	0	0	Y	0	2	0	1	51	6	0	1	57	Y	0	1Y2	1419
4:40 PM	5	0	1	0	0	0	0	0	4	47	10	0	1	50	2	0	1Y1	1421
4:45 PM	2	0	0	0	0	0	Y	0	4	4Y	6	0	1	52	Y	0	112	1449
4:50 PM	0	0	1	0	0	0	2	0	0	65	2	0	0	65	Y	0	129	1461
4:55 PM	1	0	1	0	1	0	0	0	0	60	1	0	0	56	1	0	1Y1	1456
5:00 PM	1	0	0	0	0	0	1	0	Y	5.	1	0	Y	56	0	0	1Y1	146Y
5:05 PM	2	0	0	0	Y	0	1	0	1	54	4	0	Y	61	0	0	1Y.	1479

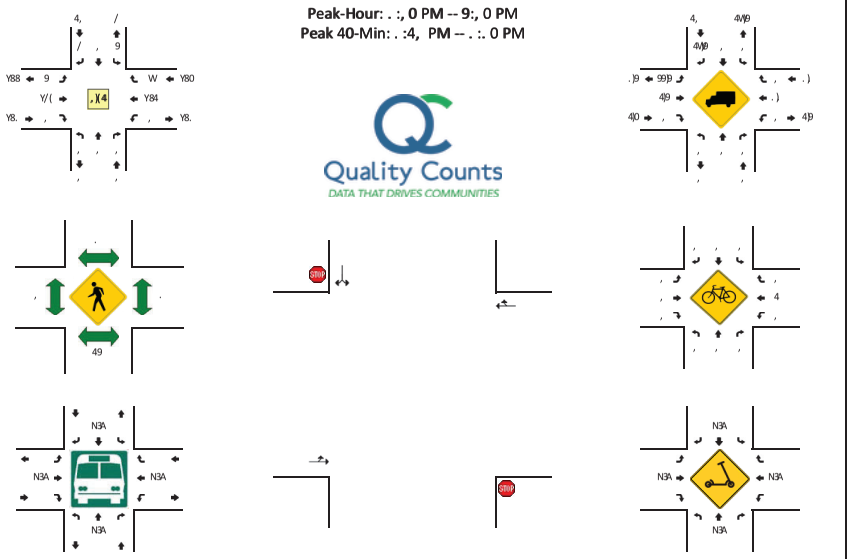
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: K aimanalo Health Center Qwy JK estB-- #alanianaole Hwy
CITDBSTATE: K aimanalo2HI

1 C 5O6 7: 40Y/W , W
QATE: Thu25an 49 . , . .

Peak-Hour: . :, 0 PM -- 9:, 0 PM
Peak 40-Min: . :4, PM -- . :. 0 PM



0-Min Count Period 6eginning At	K aimanalo Health Center Qwy JK estB JNorthboundB				K aimanalo Health Center Qwy JK estB JSouthboundB				#alanianaole Hwy JEastboundB				#alanianaole Hwy JK estboundB				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
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9:90 PM	,	,	,	,	,	,	4	,	,	0(	,	,	,	Y4	4	,	4. .	499/
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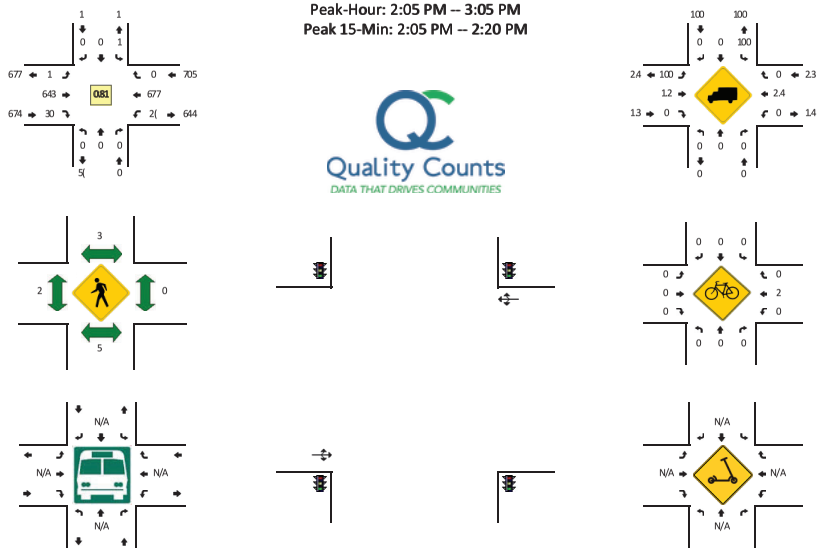
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Waimanalo Elementary School Entrance/St George Church Dwy -- Kalanianaole Hwy
CITY/STATE: Waimanalo, HI

QC JOB #: 15674006
DATE: Thu, Jan 13 2022

Peak-Hour: 2:05 PM -- 3:05 PM
Peak 15-Min: 2:05 PM -- 2:20 PM



5-Min Count Period Beginning At	Waimanalo Elementary School Entrance/St George Church Dwy)NorthboundR				Waimanalo Elementary School Entrance/St George Church Dwy)SouthboundR				Kalanianaole Hwy)EastboundR				Kalanianaole Hwy)WestboundR				Total	Hourly Totals
	Left	Thru	Uight	9	Left	Thru	Uight	9	Left	Thru	Uight	9	Left	Thru	Uight	9		
2:00 PM	0	0	0	0	0	0	0	0	0	46	5	0	6	50	0	0	107	
2:05 PM	0	0	0	0	0	0	0	0	0	4(	(	0	6	53	0	0	115	
2:10 PM	0	0	0	0	0	0	0	0	0	52	6	0	7	55	0	0	120	
2:15 PM	0	0	0	0	0	0	0	0	0	56	2	0	8	77	0	0	144	
2:20 PM	0	0	0	0	0	0	0	0	0	66	4	0	0	41	0	0	111	
2:25 PM	0	0	0	0	0	0	0	0	0	42	3	0	0	68	0	0	114	
2:30 PM	0	0	0	0	0	0	0	0	0	47	0	0	1	54	0	0	102	
2:35 PM	0	0	0	0	0	0	0	0	1	56	2	0	1	5(	0	0	11(	
2:40 PM	0	0	0	0	0	0	0	0	0	56	0	0	1	55	0	0	112	
2:45 PM	0	0	0	0	0	0	0	0	0	53	2	0	1	41	0	0	87	
2:50 PM	0	0	0	0	1	0	0	0	0	53	1	0	1	57	0	0	113	
2:55 PM	0	0	0	0	0	0	0	0	0	64	0	0	0	65	0	0	128	13(2
3:00 PM	0	0	0	0	0	0	0	0	0	50	2	0	1	52	0	0	105	13(0
3:05 PM	0	0	0	0	0	0	0	0	1	4(	1	0	1	52	0	0	103	136(
3:10 PM	0	0	0	0	0	0	0	0	1	54	1	0	0	58	0	0	115	1363
3:15 PM	0	0	0	0	0	0	0	0	0	54	0	0	0	51	0	0	105	1324
3:20 PM	0	0	0	0	2	0	0	0	0	53	0	0	1	55	1	0	112	1325
3:25 PM	0	0	0	0	0	0	0	0	0	56	0	0	1	58	0	0	116	1327
3:30 PM	0	0	0	0	0	0	0	0	0	60	1	0	0	55	0	0	116	1341
3:35 PM	0	0	0	0	0	0	1	0	1	58	0	0	0	58	0	0	120	1343
3:40 PM	0	0	0	0	0	0	0	0	0	54	2	0	0	67	0	0	123	1354
3:45 PM	0	0	0	0	0	0	0	0	1	36	1	0	0	42	0	0	(0	1337
3:50 PM	0	0	0	0	0	0	0	0	3	63	0	0	0	58	0	0	125	1348
3:55 PM	0	0	0	0	0	0	0	0	1	55	0	0	0	53	0	0	108	1328
4:00 PM	0	0	0	0	0	0	0	0	0	53	1	0	0	58	0	0	113	1337
4:05 PM	0	0	0	0	0	0	0	0	0	50	1	0	0	45	0	0	86	1330
4:10 PM	0	0	0	0	0	0	0	0	0	47	0	0	0	54	0	0	101	1316
4:15 PM	0	0	0	0	0	0	1	0	0	54	1	0	0	50	1	0	107	131(
4:20 PM	0	0	0	0	0	0	0	0	1	58	2	0	1	57	0	0	120	1326
4:25 PM	0	0	0	0	0	0	0	0	0	4(	1	0	1	50	0	0	100	1310
4:30 PM	0	0	0	0	0	0	0	0	0	53	1	0	0	73	0	0	127	1321
4:35 PM	0	0	0	0	0	0	0	0	0	52	0	0	0	62	0	0	114	1315
4:40 PM	0	0	0	0	0	0	0	0	0	51	0	0	0	55	0	0	106	128(
4:45 PM	0	0	0	0	0	0	0	0	0	41	0	0	0	45	0	0	(6	1304
4:50 PM	0	0	0	0	0	0	0	0	0	52	0	0	2	61	0	0	115	1284
4:55 PM	0	0	0	0	0	0	0	0	0	67	1	0	0	55	0	0	123	130(

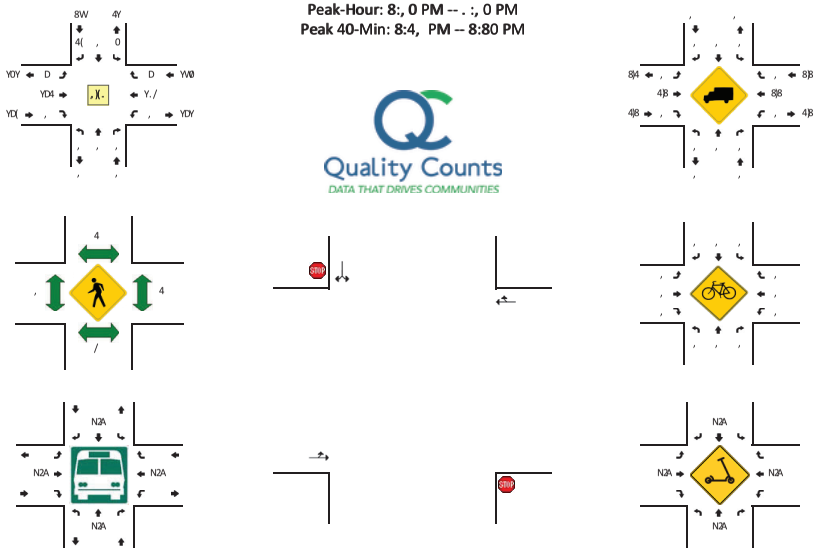
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: K aimanalo Health Center Qwy JEastB-- #alanianaole Hwy
CIT32STATE: K aimanalo9HI

1 C 5O6 7: 40Y/W, D
QATE: Thu95an 4. 8, 88

Peak-Hour: 8:, 0 PM -- . :, 0 PM
Peak 40-Min: 8:4, PM -- 8:80 PM



0-Min Count Period 6eginning At	K aimanalo Health Center Qwy JEastB JNorthboundB				K aimanalo Health Center Qwy JEastB JSouthboundB				#alanianaole Hwy JEastboundB				#alanianaole Hwy JK estboundB				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
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0:, , PM	,	,	,	,	4	,	,	,	,	0Y	,	,	,	Y8	,	,	44(	4. W

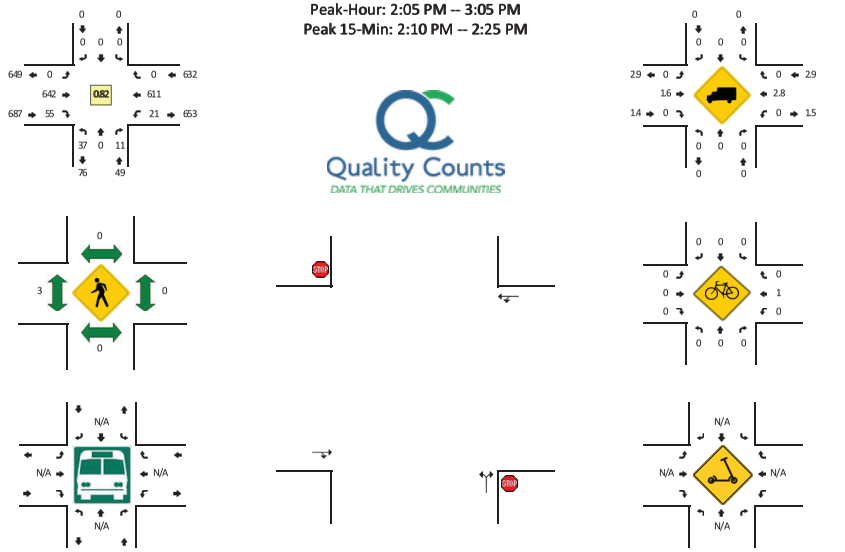
Type of peak hour being reported: System-wide Peak

Method for determining peak hour: Total Entering Volume

LOCATION: Inoaole St -- Kalanianaole Hwy
CITY/STATE: Waimanalo, HI

QC JOB #: 15674010
DATE: Thu, Jan 13 2022

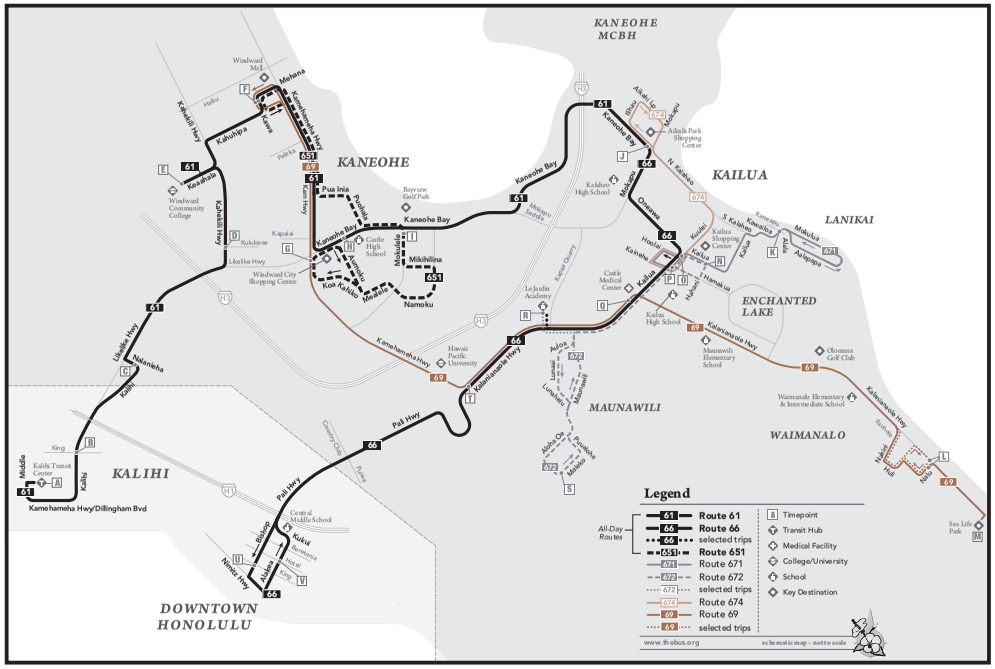
Peak-Hour: 2:05 PM -- 3:05 PM
Peak 15-Min: 2:10 PM -- 2:25 PM



5-Min Count Period Beginning At	Inoaole St (Northbound)				Inoaole St (Southbound)				Kalanianaole Hwy (Eastbound)				Kalanianaole Hwy (Westbound)				Total	Hourly Totals
	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U	Left	Thru	Right	U		
2:00 PM	7	0	2	0	0	0	0	0	0	36	1	0	1	55	0	0	102	
2:05 PM	1	0	2	0	0	0	0	0	0	56	4	0	1	49	0	0	112	
2:10 PM	5	0	1	0	0	0	0	0	0	60	8	0	2	51	0	0	129	
2:15 PM	2	0	0	0	0	0	0	0	0	70	3	0	2	53	0	0	130	
2:20 PM	5	0	1	0	0	0	0	0	0	56	2	0	2	50	0	0	116	
2:25 PM	3	0	1	0	0	0	0	0	0	41	3	0	3	56	0	0	107	
2:30 PM	3	0	1	0	0	0	0	0	0	53	1	0	3	56	0	0	117	
2:35 PM	4	0	1	0	0	0	0	0	0	47	8	0	1	54	0	0	116	
2:40 PM	0	0	0	0	0	0	0	0	0	46	8	0	1	47	0	0	103	
2:45 PM	6	0	1	0	0	0	0	0	0	51	5	0	2	38	0	0	104	
2:50 PM	4	0	0	0	0	0	0	0	0	53	4	0	1	55	0	0	117	
2:55 PM	2	0	2	0	0	0	0	0	0	54	3	0	1	53	0	0	115	1367
3:00 PM	2	0	1	0	0	0	0	0	0	55	3	0	2	48	0	0	112	1377
3:05 PM	2	0	2	0	0	0	0	0	0	50	1	0	2	47	0	0	104	1368
3:10 PM	2	0	2	0	0	0	0	0	0	43	3	0	3	51	0	0	104	1345
3:15 PM	2	0	0	0	0	0	0	0	0	56	2	0	2	44	0	0	106	1321
3:20 PM	2	0	0	0	0	0	0	0	0	45	8	0	2	57	0	0	115	1320
3:25 PM	1	0	0	0	0	0	0	0	0	54	10	0	1	59	0	0	124	1337
3:30 PM	2	0	2	0	0	0	0	0	0	53	6	0	0	57	0	0	120	1340
3:35 PM	1	0	2	0	0	0	0	0	0	56	3	0	2	58	0	0	123	1347
3:40 PM	2	0	2	0	0	0	0	0	0	47	7	0	1	53	0	0	112	1356
3:45 PM	5	0	2	0	0	0	0	0	0	34	7	0	0	45	0	0	83	1345
3:50 PM	3	0	1	0	0	0	0	0	0	52	3	0	2	55	0	0	116	1344
3:55 PM	2	0	2	0	0	0	0	0	0	50	6	0	2	51	0	0	113	1342
4:00 PM	3	0	2	0	0	0	0	0	0	37	10	0	2	59	0	0	112	1342
4:05 PM	3	0	1	0	0	0	0	0	0	59	3	0	2	43	0	0	110	1349
4:10 PM	1	0	3	0	0	0	0	0	0	38	6	0	2	49	0	0	88	1343
4:15 PM	0	0	2	0	0	0	0	0	0	53	6	0	1	51	0	0	113	1350
4:20 PM	1	0	1	0	0	0	0	0	0	49	7	0	1	57	0	0	115	1350
4:25 PM	3	0	2	0	0	0	0	0	0	44	5	0	1	50	0	0	105	1331
4:30 PM	2	0	2	0	0	0	0	0	0	47	4	0	4	61	0	0	120	1331
4:35 PM	1	0	1	0	0	0	0	0	0	53	3	0	0	56	0	0	114	1322
4:40 PM	6	0	2	0	0	0	0	0	0	46	2	0	3	53	0	0	112	1322
4:45 PM	1	0	2	0	0	0	0	0	0	42	4	0	0	48	0	0	89	1327
4:50 PM	4	0	0	0	0	0	0	0	0	50	5	0	1	55	0	0	115	1326
4:55 PM	3	0	2	0	0	0	0	0	0	64	4	0	2	51	0	0	126	1338
5:00 PM	5	0	2	0	0	0	0	0	0	50	4	0	3	53	0	0	117	1344
5:05 PM	3	0	2	0	0	0	0	0	0	60	4	0	2	49	0	0	118	1353

APPENDIX C

Bus Route Schedule



ROUTE 69 KANEOHE - WAIMANALO - SEA LIFE PARK Effective 5/29/22
WEEKDAY: Eastbound to Sea Life Park
Destination Signs:
To Sea Life Park - 69 SEA LIFE PARK
To Waimanalo - 69 WAIMANALO VIA KAILUA

F Kawa Mehana Mauka (#4600)	G Kamehameha Likelike (#1765)	Q Kalanianaole Kailua (#1120)	L Kalanianaole Nalu (#1311)	L Nalu Kalanianaole (#1172)	M Sea Life Park (#186)
608a	615a	625a	.....	643a	651a
638a	645a	655a	.....	713a	721a
738a	745a	757a	.....	815a	823a
838a	845a	856a	.....	914a	923a
938a	945a	956a	.....	1014a	1023a
1038a	1046a	1057a	.....	1117a	1126a
1138a	1146a	1157a	.....	1217p	1226p
1238p	1246p	1257p	.....	118p	127p
138p	146p	157p	.....	218p	227p
238p	246p	258p	.....	319p	328p
338p	346p	400p	.....	421p	429p
438p	446p	500p	.....	521p	529p
538p	546p	600p	.....	618p	626p
638p	644p	653p	.....	711p	719p
738p	744p	753p	809p	.....	.....
838p	844p	853p	909p	.....	.....
938p	944p	953p	1009p	1010p	1013p-Kai/Ala Koa

Wed SD - Wednesday School Day Operation
MUTF SD - Monday, Tuesday, Thursday, Friday School DayOperation

NOTE - Numbers next to timepoints are HEA (Honolulu Estimated Arrival) stop numbers.
Go to the HEA website at http://hea.thebus.org.

Schedule to change without notice.
All buses are lift and bicycle rack equipped.

Westbound to Kaneohe
Destination Sign:
To Windward Mall - 69 WINDWARD MALL
To Auloa/Kalanianaole: 69 OLOMANA

	M Sea Life Park (#186)	L Kalanianaole Nalu (#1311)	L Nalu Kalanianaole (#1223)	Q Kalanianaole Kailua (#1276)	G Kamehameha Likelike (#1475)	F Kawa Mehana Mauka (#4600)
	630a	.....	637a	655a	705a	712a
	730a	.....	737a	757a	807a	814a
	830a	.....	837a	857a	907a	915a
	930a	.....	940a	1000a	1010a	1018a
	1030a	.....	1037a	1057a	1107a	1115a
	1130a	.....	1137a	1157a	1207p	1215p
	1230p	.....	1237p	1257p	107p	115p
	130p	.....	137p	157p	207p	215p
Wed SD	226p	.....	233p	255p	256p-Auloa/Kal Hwy	.....
	230p	.....	237p	259p	309p	317p
MUTF SD	306p	.....	313p	334p	335p-Auloa/Kal Hwy	.....
	330p	.....	336p	355p	405p	413p
	430p	.....	436p	455p	505p	513p
	530p	.....	536p	554p	603p	611p
	630p	.....	636p	654p	703p	710p
	730p	.....	736p	753p	802p	809p
	.....	836p	837p	854p	903p	910p
	.....	936p	937p	954p	1003p	1010p

ROUTE 69 KANEOHE - WAIMANALO - SEA LIFE PARK Effective 5/29/22
SATURDAY: Eastbound to Sea Life Park
Destination Signs:
To Sea Life Park - 69 SEA LIFE PARK
To Waimanalo - 69 WAIMANALO VIA KAILUA

F Kawa Mehana Mauka (#4600)	G Kamehameha Likelike (#1765)	Q Kalanianaole Kailua (#1120)	L Kalanianaole Nalu (#1311)	L Nalu Kalanianaole (#1172)	M Sea Life Park (#186)
638a	645a	654a	.....	713a	719a
738a	745a	755a	.....	814a	820a
838a	845a	855a	.....	914a	920a
938a	946a	956a	.....	1015a	1021a
1038a	1046a	1056a	.....	1118a	1124a
1138a	1146a	1158a	.....	1222p	1228p
1238p	1246p	1258p	.....	124p	130p
138p	146p	158p	.....	222p	228p
238p	245p	256p	.....	318p	324p
338p	345p	355p	.....	416p	422p
438p	445p	455p	.....	516p	522p
538p	545p	555p	.....	616p	622p
638p	645p	655p	.....	716p	722p
738p	745p	755p	811p	.....	.....
838p	845p	854p	910p	911p	914p-Kai/Ala Koa

NOTE - Numbers next to timepoints are HEA (Honolulu Estimated Arrival) stop numbers.
Go to the HEA website at http://hea.thebus.org.

Schedule to change without notice.
All buses are lift and bicycle rack equipped.

Westbound to Kaneohe
Destination Sign:
To Windward Mall - 69 WINDWARD MALL

M Sea Life Park (#186)	L Kalanianaole Nalu (#1311)	L Nalu Kalanianaole (#1223)	Q Kalanianaole Kailua (#1276)	G Kamehameha Likelike (#1475)	F Kawa Mehana Mauka (#4600)
630a	.....	636a	655a	705a	714a
730a	.....	736a	755a	805a	814a
830a	.....	836a	855a	905a	914a
930a	.....	936a	955a	1005a	1015a
1030a	.....	1036a	1055a	1106a	1115a
1130a	.....	1136a	1155a	1206p	1215p
1230p	.....	1238p	1257p	108p	117p
130p	.....	140p	159p	210p	219p
230p	.....	236p	255p	306p	315p
330p	.....	336p	355p	406p	415p
430p	.....	436p	455p	506p	515p
530p	.....	536p	555p	606p	615p
630p	.....	636p	655p	705p	713p
730p	.....	736p	754p	803p	811p
.....	838p	839p	857p	906p	913p

ROUTE 69 KANEOHE - WAIMANALO - SEA LIFE PARK Effective 5/29/22
SUNDAY: Eastbound to Sea Life Park
Destination Signs:
To Sea Life Park - 69 SEA LIFE PARK
To Waimanalo - 69 WAIMANALO VIA KAILUA

F Kawa Mehana Mauka (#4600)	G Kamehameha Likelike (#1765)	Q Kalanianaole Kailua (#1120)	L Kalanianaole Nalu (#1311)	L Nalu Kalanianaole (#1172)	M Sea Life Park (#186)
638a	645a	654a	.....	710a	716a
738a	745a	754a	.....	810a	816a
838a	845a	854a	.....	910a	916a
938a	945a	954a	.....	1010a	1016a
1038a	1045a	1055a	.....	1111a	1120a
1138a	1145a	1155a	.....	1211p	1220p
1238p	1245p	1255p	.....	113p	122p
138p	145p	155p	.....	212p	220p
238p	245p	254p	.....	311p	319p
338p	345p	354p	.....	411p	419p
438p	445p	454p	.....	511p	519p
538p	545p	554p	.....	611p	619p
638p	645p	654p	.....	711p	717p
738p	745p	754p	810p	.....	.....
838p	845p	854p	910p	911p	914p-Kal/Ala Koa

NOTE - Numbers next to timepoints are HEA
(Honolulu Estimated Arrival) stop numbers.
Go to the HEA website at http://hea.thebus.org.

Schedule to change without notice.
All buses are lift and bicycle rack equipped.

Westbound to Kaneohe
Destination Sign:
To Windward Mall - 69 WINDWARD MALL

M Sea Life Park (#186)	L Kalanianaole Nalu (#1311)	L Nalu Kalanianaole (#1223)	Q Kalanianaole Kailua (#1276)	G Kamehameha Likelike (#1475)	F Kawa Mehana Mauka (#4600)
630a	.....	636a	653a	702a	708a
730a	.....	736a	753a	802a	808a
830a	.....	836a	853a	902a	908a
930a	.....	936a	953a	1002a	1012a
1030a	.....	1036a	1053a	1102a	1111a
1130a	.....	1136a	1153a	1202p	1211p
1230p	.....	1238p	1255p	104p	113p
130p	.....	138p	155p	204p	211p
230p	.....	236p	253p	305p	312p
330p	.....	336p	353p	403p	410p
430p	.....	438p	457p	506p	513p
530p	.....	536p	552p	601p	608p
630p	.....	636p	652p	701p	708p
730p	.....	736p	752p	801p	808p
.....	837p	838p	854p	903p	910p

ROUTE 69 KANEOHE - WAIMANALO - SEA LIFE PARK Effective 5/29/22
STATE HOLIDAY: Eastbound to Sea Life Park
Destination Signs:
To Sea Life Park - 69 SEA LIFE PARK
To Waimanalo - 69 WAIMANALO VIA KAILUA

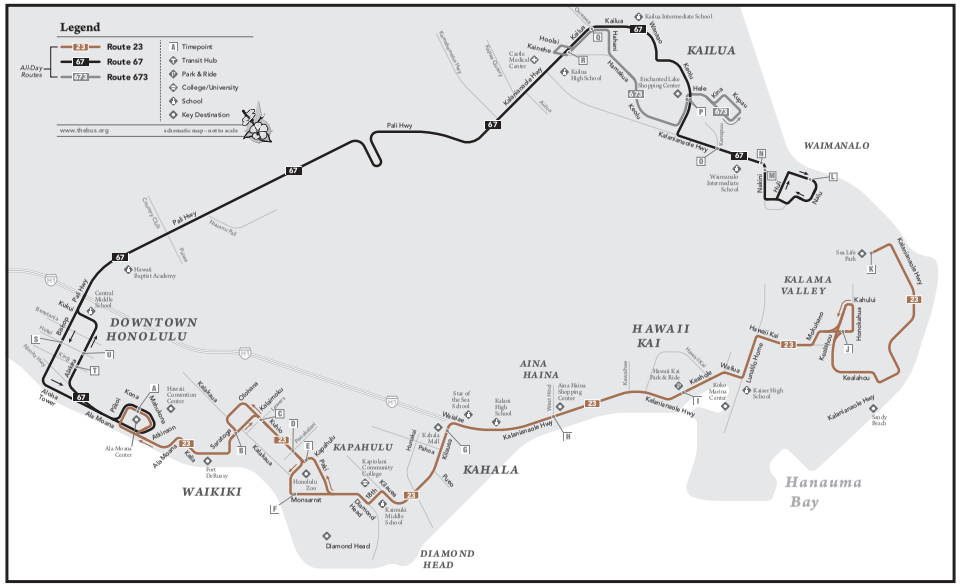
F Kawa Mehana Mauka (#4600)	G Kamehameha Likelike (#1765)	Q Kalanianaole Kailua (#1120)	L Kalanianaole Nalu (#1311)	L Nalu Kalanianaole (#1172)	M Sea Life Park (#186)
608a	615a	625a	.....	648a	653a
638a	645a	655a	.....	717a	722a
738a	746a	800a	.....	824a	829a
838a	846a	857a	.....	921a	926a
938a	946a	957a	.....	1021a	1026a
1038a	1047a	1058a	.....	1124a	1129a
1138a	1147a	1158a	.....	1223p	1229p
1238p	1247p	1258p	.....	122p	128p
138p	147p	158p	.....	225p	231p
238p	247p	258p	.....	325p	331p
338p	347p	403p	.....	431p	437p
438p	447p	503p	.....	528p	534p
538p	547p	600p	.....	624p	630p
638p	646p	659p	.....	721p	727p
738p	745p	756p	821p	.....	.....
838p	845p	856p	921p	.....	.....
938p	945p	956p	1021p	1022p	1027p-Kal/Ala Koa

NOTE - Numbers next to timepoints are HEA
(Honolulu Estimated Arrival) stop numbers.
Go to the HEA website at http://hea.thebus.org.

Schedule to change without notice.
All buses are lift and bicycle rack equipped.

Westbound to Kaneohe
Destination Sign:
To Windward Mall - 69 WINDWARD MALL

M Sea Life Park (#186)	L Kalanianaole Nalu (#1311)	L Nalu Kalanianaole (#1223)	Q Kalanianaole Kalua (#1276)	G Kamehameha Likelike (#1475)	F Kawa Mehana Mauka (#4600)
630a	.....	636a	657a	708a	715a
730a	.....	737a	801a	811a	819a
830a	.....	837a	900a	910a	918a
930a	.....	936a	959a	1009a	1017a
1030a	.....	1036a	1059a	1109a	1117a
1130a	.....	1136a	1158a	1208p	1216p
1230p	.....	1236p	1258p	108p	116p
130p	.....	136p	158p	208p	216p
230p	.....	236p	259p	312p	322p
330p	.....	336p	359p	413p	422p
430p	.....	436p	458p	510p	518p
530p	.....	536p	557p	608p	616p
630p	.....	636p	657p	707p	715p
730p	.....	736p	756p	806p	814p
.....	836p	837p	858p	908p	916p
.....	936p	937p	957p	1007p	1015p



ROUTE 67 - HONOLULU - KAILUA - WAIMANALO Effective 3/24/21
WEEKDAY: Eastbound - Via Pali Hwy to Ala Moana Center
Eastbound Destination Signs:
To Ala Moana Center - 67 HONOLULU - ALA MOANA CENTER

L Kalanianaole Nalu (#1311)	O Kalanianaole Kanapuu (#1253)	P Enchanted Lake Keolu/Hele (#1259)	Q Kailua Rd Oneawa (#1271)	Q Kailua Rd Oneawa (#1271)	S Bishop Hotel (#834)	A Ala Moana Ctr Kona St (#425)
446a	502a	506a	514a	515a	545a	601a
506a	522a	526a	534a	535a	605a	621a
541a	557a	601a	609a	610a	640a	656a
600a	617a	621a	629a	630a	700a	717a
620a	637a	641a	649a	650a	727a	744a
640a	657a	701a	709a	710a	750a	807a
657a	717a	721a	729a	730a	809a	826a
717a	737a	741a	749a	750a	828a	845a
737a	757a	801a	809a	810a	847a	904a
802a	822a	826a	834a	835a	910a	927a
832a	852a	856a	904a	905a	936a	953a
902a	921a	925a	934a	935a	1006a	1023a
932a	951a	955a	1004a	1005a	1036a	1053a
1003a	1021a	1025a	1034a	1035a	1106a	1125a
1033a	1051a	1055a	1104a	1105a	1135a	1154a
1103a	1121a	1125a	1134a	1135a	1205p	1224p
1133a	1151a	1155a	1204p	1205p	1235p	1254p
1203p	1221p	1225p	1234p	1235p	105p	124p
1233p	1251p	1255p	104p	105p	135p	154p
103p	121p	125p	134p	135p	205p	224p
133p	151p	155p	204p	205p	235p	254p
203p	221p	225p	234p	235p	306p	326p
233p	251p	255p	304p	305p	339p	359p
303p	321p	325p	334p	335p	409p	429p
333p	351p	355p	404p	405p	439p	459p
404p	421p	425p	434p	435p	509p	529p
434p	451p	455p	504p	505p	539p	559p
504p	521p	525p	534p	535p	608p	628p
534p	551p	555p	604p	605p	637p	657p
604p	621p	625p	634p	635p	707p	724p
634p	651p	655p	704p	705p	737p	754p
704p	721p	725p	734p	735p	807p	824p
819p	836p	840p	849p	850p	922p	939p
919p	936p	940p	949p	950p	1022p	1039p
1019p	1036p	1040p	1049p	1050p	1122p	1139p

ROUTE 67 - HONOLULU - KAILUA - WAIMANALO Effective 3/24/21
WEEKDAY: Westbound - Westbound - Via Pali Hwy to Kailua/Waimanalo
Westbound Destination Signs:
To Waimanalo - 67 KAILUA - WAIMANALO

A Ala Moana Center - Kona (#426)	T Alakea King (#743)	U Alakea Hotel (#744)	R Kailua Rd Hamakua (#1125)	R Kailua Rd Hamakua (#1125)	P Enchanted Lake Keolu/Hele (#1136)	O Kalanianaole Kanapuu (#1143)	L Kalanianaole Nalu (#1311)	M Nakini Ala Koa (#4335)
.....	445a	447a	513a	514a	522a	526a	539a	.....
.....	515a	517a	543a	544a	552a	556a	609a	.....
.....	545a	547a	613a	614a	622a	626a	639a	.....
603a	615a	617a	643a	644a	652a	656a	709a	.....
633a	645a	647a	713a	714a	722a	726a	739a	.....
657a	714a	716a	743a	744a	752a	756a	809a	.....
726a	743a	745a	813a	814a	822a	826a	839a	.....
755a	812a	814a	843a	844a	852a	856a	909a	.....
825a	842a	844a	913a	914a	922a	926a	939a	.....
855a	912a	914a	943a	944a	952a	956a	1009a	.....
925a	942a	944a	1013a	1014a	1022a	1026a	1039a	.....
955a	1012a	1014a	1043a	1044a	1052a	1056a	1109a	.....
1025a	1042a	1044a	1113a	1114a	1122a	1126a	1139a	.....
1055a	1112a	1114a	1143a	1144a	1152a	1156a	1209p	.....
1125a	1142a	1144a	1213p	1214p	1222p	1226p	1239p	.....
1155a	1212p	1214p	1243p	1244p	1252p	1256p	109p	.....
1225p	1242p	1244p	113p	114p	123p	127p	140p	.....
1255p	112p	114p	143p	144p	153p	157p	210p	.....
125p	142p	144p	213p	214p	223p	229p	242p	.....
147p	204p	206p	235p	236p	245p	251p	304p	.....
223p	240p	242p	313p	314p	323p	329p	342p	.....
251p	308p	310p	343p	344p	353p	359p	412p	.....
321p	338p	340p	413p	414p	423p	429p	442p	.....
345p	403p	405p	438p	439p	448p	454p	507p	.....
404p	423p	425p	458p	459p	508p	514p	527p	533p
424p	443p	445p	518p	519p	528p	534p	547p	.....
444p	503p	505p	538p	539p	548p	554p	607p	.....
504p	523p	525p	558p	559p	608p	613p	626p	632p
524p	543p	545p	618p	619p	628p	633p	646p	.....
544p	603p	605p	638p	639p	648p	653p	706p	712p
640p	655p	657p	729p	730p	739p	744p	757p	.....
740p	755p	757p	829p	830p	837p	842p	855p	.....
841p	855p	857p	929p	930p	937p	942p	955p	.....
941p	955p	957p	1029p	1030p	1037p	1042p	1055p	1101p
1047p	1101p	1103p	1130p	1131p	1138p	1142p	1155p	1201a

NOTE - Numbers next to timepoints are HEA (Honolulu Estimated Arrival) stop numbers.
Go to the HEA website at http://hea.thebus.org.

Schedule to change without notice.
All buses are lift and bicycle rack equipped

ROUTE 67 - HONOLULU - KAILUA - WAIMANALO Effective 3/24/21
SATURDAY: Eastbound - Via Pali Hwy to Ala Moana Center
Eastbound Destination Signs:
To Ala Moana Center - 67 HONOLULU - ALA MOANA CENTER

L Kalanianaole Nalu (#1311)	O Kalanianaole Kanapuu (#1253)	P Enchanted Lake Keolu/Hele (#1259)	Q Kailua Rd Oneawa (#1271)	Q Kailua Rd Oneawa (#1271)	S Bishop Hotel (#834)	A Ala Moana Ctr Kona St (#425)
606a	621a	625a	635a	636a	706a	722a
636a	651a	655a	705a	706a	736a	752a
706a	721a	725a	735a	736a	806a	822a
736a	751a	755a	805a	806a	836a	852a
806a	821a	825a	835a	836a	907a	924a
836a	851a	855a	905a	906a	940a	957a
906a	921a	925a	935a	936a	1010a	1027a
936a	951a	955a	1005a	1006a	1040a	1057a
1006a	1021a	1025a	1035a	1036a	1110a	1127a
1036a	1051a	1055a	1105a	1106a	1140a	1157a
1106a	1121a	1125a	1135a	1136a	1210p	1227p
1136a	1151a	1155a	1205p	1206p	1240p	1257p
1206p	1221p	1225p	1235p	1236p	110p	127p
1236p	1251p	1255p	105p	106p	140p	157p
106p	121p	125p	135p	136p	210p	227p
136p	151p	155p	205p	206p	240p	257p
206p	221p	225p	235p	236p	310p	327p
236p	251p	255p	305p	306p	340p	357p
306p	321p	325p	335p	336p	410p	427p
336p	351p	355p	405p	406p	440p	457p
406p	421p	425p	435p	436p	510p	527p
436p	451p	455p	505p	506p	540p	557p
506p	521p	525p	535p	536p	609p	626p
536p	551p	555p	605p	606p	636p	653p
606p	621p	625p	635p	636p	706p	723p
721p	736p	740p	749p	750p	820p	837p
821p	836p	840p	849p	850p	919p	934p
920p	935p	939p	948p	949p	1017p	1032p
1020p	1035p	1039p	1048p	1049p	1117p	1132p

ROUTE 67 - HONOLULU - KAILUA - WAIMANALO Effective 3/24/21
SATURDAY: Westbound - Via Pali Hwy to Kailua/Waimanalo
Westbound Destination Signs:
To Waimanalo - 67 KAILUA - WAIMANALO

A Ala Moana Center - Kona (#426)	T Alakea King (#743)	U Alakea Hotel (#744)	R Kailua Rd Hamakua (#1125)	R Kailua Rd Hamakua (#1125)	P Enchanted Lake Keolu/Hele (#1136)	O Kalanianaole Kanapuu (#1143)	L Kalanianaole Nalu (#1311)	M Nakini Ala Koa (#4335)
.....	452a	454a	522a	523a	529a	533a	546a	.....
.....	526a	528a	556a	557a	603a	607a	620a	.....
.....	616a	618a	646a	647a	653a	657a	710a	.....
.....	643a	645a	715a	716a	722a	726a	739a	.....
.....	709a	711a	743a	744a	750a	754a	807a	.....
732a	747a	749a	821a	822a	831a	835a	848a	.....
758a	813a	815a	847a	848a	857a	901a	914a	.....
827a	842a	844a	918a	919a	928a	932a	945a	.....
857a	912a	914a	949a	950a	959a	1003a	1016a	.....
927a	942a	944a	1019a	1020a	1029a	1033a	1046a	.....
956a	1013a	1015a	1050a	1051a	1100a	1104a	1117a	.....
1026a	1044a	1046a	1121a	1122a	1131a	1135a	1148a	.....
1055a	1113a	1115a	1150a	1151a	1200p	1204p	1217p	.....
1125a	1143a	1145a	1220p	1221p	1230p	1234p	1247p	.....
1155a	1213p	1215p	1250p	1251p	100p	104p	117p	.....
1225p	1243p	1245p	120p	121p	130p	134p	147p	.....
1255p	113p	115p	150p	151p	200p	204p	217p	.....
125p	143p	145p	220p	221p	230p	234p	247p	.....
155p	214p	216p	251p	252p	301p	305p	318p	.....
225p	244p	246p	321p	322p	331p	335p	348p	.....
255p	314p	316p	351p	352p	401p	405p	418p	.....
326p	345p	347p	422p	423p	432p	436p	449p	.....
356p	415p	417p	452p	453p	502p	506p	519p	.....
426p	445p	447p	520p	521p	528p	532p	545p	.....
458p	517p	519p	551p	552p	559p	603p	616p	622p
559p	614p	616p	648p	649p	656p	700p	713p	.....
647p	702p	704p	736p	737p	744p	748p	801p	.....
747p	802p	804p	833p	834p	841p	845p	858p	.....
849p	904p	906p	935p	936p	943p	947p	1000p	.....
949p	1003p	1005p	1034p	1035p	1042p	1046p	1059p	1105p
1048p	1101p	1103p	1132p	1133p	1140p	1144p	1157p	1203a

NOTE - Numbers next to timepoints are HEA
(Honolulu Estimated Arrival) stop numbers.
Go to the HEA website at http://hea.thebus.org.

Schedule to change without notice.
All buses are lift and bicycle rack equipped

ROUTE 67 - HONOLULU - KAILUA - WAIMANALO Effective 3/24/21
SUNDAY: Eastbound - Via Pali Hwy to Ala Moana Center
Eastbound Destination Signs:
To Ala Moana Center - 67 HONOLULU - ALA MOANA CENTER

L Kalanianaole Nalu (#1311)	O Kalanianaole Kanapuu (#1253)	P Enchanted Lake Keolu/Hele (#1259)	Q Kailua Rd Oneawa (#1271)	Q Kailua Rd Oneawa (#1271)	S Bishop Hotel (#834)	A Ala Moana Ctr Kona St (#425)
605a	620a	624a	632a	633a	700a	715a
635a	650a	654a	702a	703a	730a	745a
705a	720a	724a	732a	733a	800a	815a
735a	750a	754a	802a	803a	830a	845a
805a	820a	824a	832a	833a	900a	915a
835a	850a	854a	902a	903a	930a	945a
905a	920a	924a	932a	933a	1000a	1015a
935a	950a	954a	1003a	1004a	1034a	1049a
1005a	1020a	1024a	1034a	1035a	1105a	1120a
1035a	1050a	1054a	1104a	1105a	1135a	1150a
1105a	1120a	1124a	1134a	1135a	1205p	1220p
1135a	1150a	1154a	1204p	1205p	1235p	1250p
1205p	1220p	1224p	1234p	1235p	105p	120p
1235p	1250p	1254p	104p	105p	135p	150p
105p	120p	124p	134p	135p	205p	220p
135p	150p	154p	204p	205p	235p	250p
205p	220p	224p	234p	235p	305p	320p
235p	250p	254p	304p	305p	335p	350p
305p	320p	324p	334p	335p	405p	420p
335p	350p	354p	404p	405p	435p	450p
405p	420p	424p	434p	435p	505p	520p
435p	450p	454p	504p	505p	535p	550p
505p	520p	524p	534p	535p	605p	620p
535p	550p	554p	604p	605p	635p	650p
607p	622p	636p	645p	646p	715p	730p
719p	734p	738p	747p	748p	816p	831p
821p	836p	840p	849p	850p	918p	933p
922p	937p	941p	949p	950p	1018p	1033p

ROUTE 67 - HONOLULU - KAILUA - WAIMANALO Effective 3/24/21
SUNDAY: Westbound - Via Pali Hwy to Kailua/Waimanalo
Westbound Destination Signs:
To Waimanalo - 67 KAILUA - WAIMANALO

A Ala Moana Center - Kona (#426)	T Alakea King (#743)	U Alakea Hotel (#744)	R Kailua Rd Hamakua (#1125)	R Kailua Rd Hamakua (#1125)	P Enchanted Lake Keolu/Hele (#1136)	O Kalanianaole Kanapuu (#1143)	L Kalanianaole Nalu (#1311)	M Nakini Ala Koa (#4335)
530a	542a	543a	607a	608a	615a	619a	632a	.....
600a	612a	613a	637a	638a	645a	649a	702a	.....
630a	642a	643a	707a	708a	715a	719a	732a	.....
700a	712a	713a	737a	738a	745a	749a	802a	.....
730a	742a	743a	808a	809a	816a	820a	833a	.....
800a	812a	813a	839a	840a	847a	851a	904a	.....
830a	842a	843a	909a	910a	919a	923a	936a	.....
900a	915a	916a	942a	943a	952a	956a	1009a	.....
930a	945a	946a	1012a	1013a	1022a	1026a	1039a	.....
1000a	1015a	1016a	1042a	1043a	1052a	1056a	1109a	.....
1030a	1045a	1046a	1112a	1113a	1122a	1126a	1139a	.....
1100a	1115a	1116a	1143a	1144a	1153a	1157a	1210p	.....
1131a	1146a	1147a	1213p	1214p	1223p	1227p	1240p	.....
1200p	1215p	1216p	1242p	1243p	1252p	1256p	109p	.....
1230p	1245p	1246p	112p	113p	122p	126p	139p	.....
100p	115p	116p	142p	143p	152p	156p	209p	.....
130p	145p	146p	212p	213p	222p	226p	239p	.....
200p	215p	216p	242p	243p	252p	256p	309p	.....
230p	245p	246p	312p	313p	322p	326p	339p	.....
300p	315p	316p	342p	343p	352p	356p	409p	.....
330p	345p	346p	412p	413p	422p	426p	439p	.....
400p	415p	416p	442p	443p	452p	456p	509p	.....
430p	445p	446p	512p	513p	522p	526p	539p	.....
500p	515p	516p	542p	543p	552p	556p	609p	615p
530p	545p	546p	612p	613p	622p	626p	639p	.....
641p	656p	657p	723p	724p	732p	736p	749p	.....
747p	802p	803p	829p	830p	838p	842p	855p	.....
849p	902p	903p	929p	930p	938p	942p	955p	1001p

NOTE - Numbers next to timepoints are HEA
(Honolulu Estimated Arrival) stop numbers.
Go to the HEA website at http://hea.thebus.org.

Schedule to change without notice.
All buses are lift and bicycle rack equipped

ROUTE 67 - HONOLULU - KAILUA - WAIMANALO Effective 3/24/21
STATE HOLIDAY: Eastbound - Via Pali Hwy to Ala Moana Center
Eastbound Destination Signs:
To Ala Moana Center - 67 HONOLULU - ALA MOANA CENTER

L Kalanianaole Nalu (#1311)	O Kalanianaole Kanapuu (#1253)	P Enchanted Lake Keolu/Hele (#1259)	Q Kailua Rd Oneawa (#1271)	Q Kailua Rd Oneawa (#1271)	S Bishop Hotel (#834)	A Ala Moana Ctr Kona St (#425)
446a	502a	506a	514a	515a	545a	601a
506a	522a	526a	534a	535a	605a	621a
541a	557a	601a	609a	610a	640a	656a
600a	617a	621a	629a	630a	700a	717a
620a	637a	641a	649a	650a	727a	744a
640a	657a	701a	709a	710a	750a	807a
657a	717a	721a	729a	730a	809a	826a
717a	737a	741a	749a	750a	828a	845a
737a	757a	801a	809a	810a	847a	904a
802a	822a	826a	834a	835a	910a	927a
832a	852a	856a	904a	905a	936a	953a
902a	921a	925a	934a	935a	1006a	1023a
932a	951a	955a	1004a	1005a	1036a	1053a
1003a	1021a	1025a	1034a	1035a	1106a	1125a
1033a	1051a	1055a	1104a	1105a	1135a	1154a
1103a	1121a	1125a	1134a	1135a	1205p	1224p
1133a	1151a	1155a	1204p	1205p	1235p	1254p
1203p	1221p	1225p	1234p	1235p	105p	124p
1233p	1251p	1255p	104p	105p	135p	154p
103p	121p	125p	134p	135p	205p	224p
133p	151p	155p	204p	205p	235p	254p
203p	221p	225p	234p	235p	306p	326p
233p	251p	255p	304p	305p	339p	359p
303p	321p	325p	334p	335p	409p	429p
333p	351p	355p	404p	405p	439p	459p
404p	421p	425p	434p	435p	509p	529p
434p	451p	455p	504p	505p	539p	559p
504p	521p	525p	534p	535p	608p	628p
534p	551p	555p	604p	605p	637p	657p
604p	621p	625p	634p	635p	707p	724p
634p	651p	655p	704p	705p	737p	754p
704p	721p	725p	734p	735p	807p	824p
819p	836p	840p	849p	850p	922p	939p
919p	936p	940p	949p	950p	1022p	1039p
1019p	1036p	1040p	1049p	1050p	1122p	1139p

ROUTE 67 - HONOLULU - KAILUA - WAIMANALO Effective 3/24/21
STATE HOLIDAY: Westbound - Via Pali Hwy to Kailua/Waimanalo
Westbound Destination Signs:
To Waimanalo - 67 KAILUA - WAIMANALO

A Ala Moana Center - Kona (#426)	T Alakea King (#743)	U Alakea Hotel (#744)	R Kailua Rd Hamakua (#1125)	R Kailua Rd Hamakua (#1125)	P Enchanted Lake Keolu/Hele (#1136)	O Kalanianaole Kanapuu (#1143)	L Kalanianaole Nalu (#1311)	M Nakini Ala Koa (#4335)
.....	445a	447a	513a	514a	522a	526a	539a	.....
.....	515a	517a	543a	544a	552a	556a	609a	.....
.....	545a	547a	613a	614a	622a	626a	639a	.....
603a	615a	617a	643a	644a	652a	656a	709a	.....
633a	645a	647a	713a	714a	722a	726a	739a	.....
657a	714a	716a	743a	744a	752a	756a	809a	.....
726a	743a	745a	813a	814a	822a	826a	839a	.....
755a	812a	814a	843a	844a	852a	856a	909a	.....
825a	842a	844a	913a	914a	922a	926a	939a	.....
855a	912a	914a	943a	944a	952a	956a	1009a	.....
925a	942a	944a	1013a	1014a	1022a	1026a	1039a	.....
955a	1012a	1014a	1043a	1044a	1052a	1056a	1109a	.....
1025a	1042a	1044a	1113a	1114a	1122a	1126a	1139a	.....
1055a	1112a	1114a	1143a	1144a	1152a	1156a	1209p	.....
1125a	1142a	1144a	1213p	1214p	1222p	1226p	1239p	.....
1155a	1212p	1214p	1243p	1244p	1252p	1256p	109p	.....
1225p	1242p	1244p	113p	114p	123p	127p	140p	.....
1255p	112p	114p	143p	144p	153p	157p	210p	.....
125p	142p	144p	213p	214p	223p	229p	242p	.....
147p	204p	206p	235p	236p	245p	251p	304p	.....
223p	240p	242p	313p	314p	323p	329p	342p	.....
251p	308p	310p	343p	344p	353p	359p	412p	.....
321p	338p	340p	413p	414p	423p	429p	442p	.....
345p	403p	405p	438p	439p	448p	454p	507p	.....
404p	423p	425p	458p	459p	508p	514p	527p	533p
424p	443p	445p	518p	519p	528p	534p	547p	.....
444p	503p	505p	538p	539p	548p	554p	607p	.....
504p	523p	525p	558p	559p	608p	613p	626p	632p
524p	543p	545p	618p	619p	628p	633p	646p	.....
544p	603p	605p	638p	639p	648p	653p	706p	712p
640p	655p	657p	729p	730p	739p	744p	757p	.....
740p	755p	757p	829p	830p	837p	842p	855p	.....
841p	855p	857p	929p	930p	937p	942p	955p	.....
941p	955p	957p	1029p	1030p	1037p	1042p	1055p	1101p
1047p	1101p	1103p	1130p	1131p	1138p	1142p	1155p	1201a

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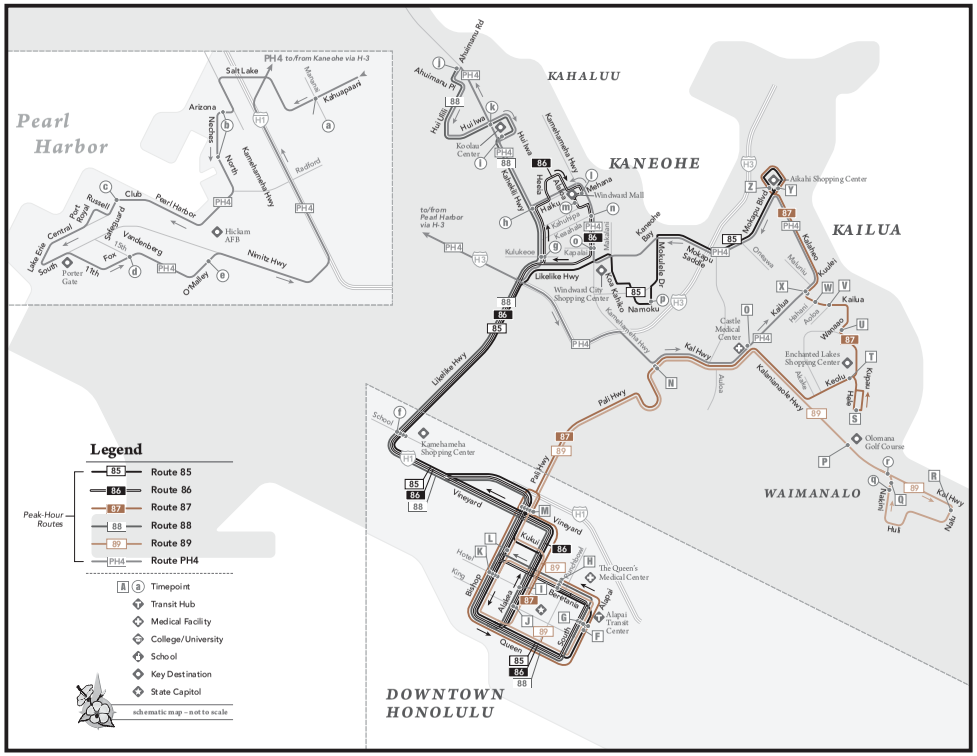


ROUTE 89 WAIMANALO - KAILUA EXPRESS **Effective 5/29/22**
A.M. WEEKDAY: To Downtown Honolulu
A.M. Destination Sign: 89 DOWNTOWN EXPRESS

r	R	Q	P	O	M	F	H
Kalanianaole Nakini (#1160)	Nalu Kalanianaole (#1223)	Nakini Ala Koa (#4335)	Kalanianaole Hwy Olomana Golf Course (#1252)	Kalanianaole Hwy Kailua (#1276)	Pali Vineyard (#1279)	Alapai King (#181)	Beretania Punchbowl (#45)
540a	542a	546a	556a	601a	618a	626a	628a

ROUTE 89 WAIMANALO - KAILUA EXPRESS **Effective 5/29/22**
P.M. WEEKDAY: To Waimanalo
P.M. Destination Sign: 89 WAIMANALO EXPRESS

G	H	K	M	N	O	q	r
Alapai Transit Ctr (#2288)	Beretania Punchbowl (#737)	Bishop Hotel (#834)	Pali Vineyard (#1116)	Pali Hwy Kamehameha Hwy (#1118)	Kalanianaole Hwy Kailua (#1120)	Nakini Ilauhole (#4586)	Kalanianaole Nakini (#1236)
445p	449p	451p	502p	517p	523p	540p	548p

Schedule to change without notice.
All buses are lift and bicycle rack equipped.

ROUTE 89 WAIMANALO - KAILUA EXPRESS **Effective 5/29/22**
A.M. STATE HOLIDAY: To Downtown Honolulu
A.M. Destination Sign: 89 DOWNTOWN EXPRESS

r	R	Q	P	O	M	F	H
Kalanianaole Nakini (#1160)	Nalu Kalanianaole (#1223)	Nakini Ala Koa (#4335)	Kalanianaole Hwy Olomana Golf Course (#1252)	Kalanianaole Hwy Kailua (#1276)	Pali Vineyard (#1279)	Alapai King (#181)	Beretania Punchbowl (#45)
540a	542a	546a	556a	601a	618a	626a	628a

ROUTE 89 WAIMANALO - KAILUA EXPRESS **Effective 5/29/22**
P.M. STATE HOLIDAY: To Waimanalo
P.M. Destination Sign: 89 WAIMANALO EXPRESS

G	H	K	M	N	O	q	r
Alapai Transit Ctr (#2288)	Beretania Punchbowl (#737)	Bishop Hotel (#834)	Pali Vineyard (#1116)	Pali Hwy Kamehameha Hwy (#1118)	Kalanianaole Hwy Kailua (#1120)	Nakini Ilauhole (#4586)	Kalanianaole Nakini (#1236)
445p	447p	449p	457p	510p	516p	533p	541p

Schedule to change without notice.
All buses are lift and bicycle rack equipped.

APPENDIX D

Analysis Report Existing Conditions

Synchro Report
Existing Conditions AM

Intersection	
Int Delay, s/veh	6.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	613	38	11	589	7	50	0	19	14	2	20
Future Vol, veh/h	13	613	38	11	589	7	50	0	19	14	2	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	4	4	4	0	0	0	8	8	8
Mvmt Flow	15	730	45	13	701	8	60	0	23	17	2	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	709	0	0	775	0	0	1527	1518	753	1525	1536	705
Stage 1	-	-	-	-	-	-	783	783	-	731	731	-
Stage 2	-	-	-	-	-	-	744	735	-	794	805	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.1	6.5	6.2	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.58	-
Follow-up Hdwy	2.218	-	-	2.236	-	-	3.5	4	3.3	3.572	4.072	3.372
Pot Cap-1 Maneuver	890	-	-	832	-	-	97	120	413	93	113	426
Stage 1	-	-	-	-	-	-	390	407	-	404	418	-
Stage 2	-	-	-	-	-	-	410	428	-	373	387	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	890	-	-	832	-	-	86	113	413	84	107	426
Mov Cap-2 Maneuver	-	-	-	-	-	-	86	113	-	84	107	-
Stage 1	-	-	-	-	-	-	378	395	-	392	407	-
Stage 2	-	-	-	-	-	-	375	417	-	342	375	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	100.1	36.9
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	110	890	-	-	832	-	-	155
HCM Lane V/C Ratio	0.747	0.017	-	-	0.016	-	-	0.276
HCM Control Delay (s)	100.1	9.1	0	-	9.4	0	-	36.9
HCM Lane LOS	F	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	4.1	0.1	-	-	0	-	-	1.1

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	603	608	13	2	1
Future Vol, veh/h	40	603	608	13	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	47	701	707	15	2	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	722	0	-	0	1510	715
Stage 1	-	-	-	-	715	-
Stage 2	-	-	-	-	795	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	889	-	-	-	134	434
Stage 1	-	-	-	-	488	-
Stage 2	-	-	-	-	448	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	889	-	-	-	122	434
Mov Cap-2 Maneuver	-	-	-	-	122	-
Stage 1	-	-	-	-	446	-
Stage 2	-	-	-	-	448	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	28
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	889	-	-	-	160
HCM Lane V/C Ratio	0.052	-	-	-	0.022
HCM Control Delay (s)	9.3	0	-	-	28
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	522	78	38	607	2	0	0	0	4	0	6
Future Vol, veh/h	5	522	78	38	607	2	0	0	0	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	4	1	5	3	0	0	0	0	0	0	0
Mvmt Flow	6	614	92	45	714	2	0	0	0	5	0	7

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	716	0	0	706	0	0			1477	1523	715
Stage 1	-	-	-	-	-	-			805	805	-
Stage 2	-	-	-	-	-	-			672	718	-
Critical Hdwy	4.1	-	-	4.15	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.245	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	894	-	-	878	-	-			140	119	434
Stage 1	-	-	-	-	-	-			443	398	-
Stage 2	-	-	-	-	-	-			511	436	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	894	-	-	878	-	-			127	0	434
Mov Cap-2 Maneuver	-	-	-	-	-	-			127	0	-
Stage 1	-	-	-	-	-	-			438	0	-
Stage 2	-	-	-	-	-	-			468	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.5	22.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	894	-	-	878	-	-	221
HCM Lane V/C Ratio	0.007	-	-	0.051	-	-	0.053
HCM Control Delay (s)	9.1	0	-	9.3	0	-	22.2
HCM Lane LOS	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0.2

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	554	583	11	1	5
Future Vol, veh/h	13	554	583	11	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	4	3	0	0	20
Mvmt Flow	15	630	663	13	1	6

Major/Minor	Major1			Major2		Minor2	
Conflicting Flow All	676	0	-	0	1330	670	
Stage 1	-	-	-	-	670	-	
Stage 2	-	-	-	-	660	-	
Critical Hdwy	4.1	-	-	-	6.4	6.4	
Critical Hdwy Stg 1	-	-	-	-	5.4	-	
Critical Hdwy Stg 2	-	-	-	-	5.4	-	
Follow-up Hdwy	2.2	-	-	-	3.5	3.48	
Pot Cap-1 Maneuver	925	-	-	-	172	427	
Stage 1	-	-	-	-	512	-	
Stage 2	-	-	-	-	518	-	
Platoon blocked, %		-	-	-			
Mov Cap-1 Maneuver	925	-	-	-	168	427	
Mov Cap-2 Maneuver	-	-	-	-	168	-	
Stage 1	-	-	-	-	499	-	
Stage 2	-	-	-	-	518	-	

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	15.8
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	925	-	-	-	340
HCM Lane V/C Ratio	0.016	-	-	-	0.02
HCM Control Delay (s)	9	0	-	-	15.8
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection						
Int Delay, s/veh	2.1					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	520	32	11	540	58	19
Future Vol, veh/h	520	32	11	540	58	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	4	0	9	3	2	0
Mvmt Flow	584	36	12	607	65	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	620	0	1233	602
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	631	-
Critical Hdwy	-	-	4.19	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.281	-	3.518	3.3
Pot Cap-1 Maneuver	-	-	927	-	195	503
Stage 1	-	-	-	-	547	-
Stage 2	-	-	-	-	530	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	927	-	191	503
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	547	-
Stage 2	-	-	-	-	519	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	30.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	226	-	-	927	-
HCM Lane V/C Ratio	0.383	-	-	0.013	-
HCM Control Delay (s)	30.5	-	-	8.9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.7	-	-	0	-

HCM 2010 TWSC
50: Inoaole St & Kalaniana'ole Hwy
Existing 2022 (AM)
04/13/2022

Intersection						
Int Delay, s/veh	2.1					

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	520	32	11	540	58	19
Future Vol, veh/h	520	32	11	540	58	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	4	0	9	3	2	0
Mvmt Flow	584	36	12	607	65	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	620	0	1233	602
Stage 1	-	-	-	-	602	-
Stage 2	-	-	-	-	631	-
Critical Hdwy	-	-	4.19	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.281	-	3.518	3.3
Pot Cap-1 Maneuver	-	-	927	-	195	503
Stage 1	-	-	-	-	547	-
Stage 2	-	-	-	-	530	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	927	-	191	503
Mov Cap-2 Maneuver	-	-	-	-	191	-
Stage 1	-	-	-	-	547	-
Stage 2	-	-	-	-	519	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	30.5
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	226	-	-	927	-
HCM Lane V/C Ratio	0.383	-	-	0.013	-
HCM Control Delay (s)	30.5	-	-	8.9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.7	-	-	0	-

Baseline
Synchro 10 Report
Page 5

Synchro Report
Existing Conditions PM

Intersection	
Int Delay, s/veh	3.1

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations		✣			✣			✣			✣	
Traffic Vol, veh/h	20	646	43	18	650	12	35	1	16	10	2	13
Future Vol, veh/h	20	646	43	18	650	12	35	1	16	10	2	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	0	0	0
Mvmt Flow	22	702	47	20	707	13	38	1	17	11	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	720	0	0	749	0	0	1532	1530	726	1533	1547	714
Stage 1	-	-	-	-	-	-	770	770	-	754	754	-
Stage 2	-	-	-	-	-	-	762	760	-	779	793	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	886	-	-	860	-	-	96	118	428	96	115	435
Stage 1	-	-	-	-	-	-	396	413	-	404	420	-
Stage 2	-	-	-	-	-	-	400	417	-	392	403	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	886	-	-	860	-	-	86	109	428	86	106	435
Mov Cap-2 Maneuver	-	-	-	-	-	-	86	109	-	86	106	-
Stage 1	-	-	-	-	-	-	379	395	-	387	404	-
Stage 2	-	-	-	-	-	-	370	401	-	359	386	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	63.4	34
HCM LOS			F	D

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	115	886	-	-	860	-	-	151
HCM Lane V/C Ratio	0.491	0.025	-	-	0.023	-	-	0.18
HCM Control Delay (s)	63.4	9.2	0	-	9.3	0	-	34
HCM Lane LOS	F	A	A	-	A	A	-	D
HCM 95th %tile Q(veh)	2.2	0.1	-	-	0.1	-	-	0.6

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	679	681	4	3	7
Future Vol, veh/h	3	679	681	4	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	33	1	2	0	0	14
Mvmt Flow	3	746	748	4	3	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	752	0	-	0	1502	750
Stage 1	-	-	-	-	750	-
Stage 2	-	-	-	-	752	-
Critical Hdwy	4.43	-	-	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.497	-	-	-	3.5	3.426
Pot Cap-1 Maneuver	733	-	-	-	135	392
Stage 1	-	-	-	-	470	-
Stage 2	-	-	-	-	469	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	733	-	-	-	134	392
Mov Cap-2 Maneuver	-	-	-	-	134	-
Stage 1	-	-	-	-	467	-
Stage 2	-	-	-	-	469	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.2
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	733	-	-	-	248
HCM Lane V/C Ratio	0.004	-	-	-	0.044
HCM Control Delay (s)	9.9	0	-	-	20.2
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	643	30	28	677	0	0	0	0	1	0	0
Future Vol, veh/h	1	643	30	28	677	0	0	0	0	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	-	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	100	1	0	0	2	0	0	0	0	100	0	0
Mvmt Flow	1	707	33	31	744	0	0	0	0	1	0	0

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	744	0	0	740	0	0			1532	1548	744
Stage 1	-	-	-	-	-	-			806	806	-
Stage 2	-	-	-	-	-	-			726	742	-
Critical Hdwy	5.1	-	-	4.1	-	-			7.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			6.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			6.4	5.5	-
Follow-up Hdwy	3.1	-	-	2.2	-	-			4.4	4	3.3
Pot Cap-1 Maneuver	548	-	-	876	-	-			78	115	418
Stage 1	-	-	-	-	-	-			307	398	-
Stage 2	-	-	-	-	-	-			340	425	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	548	-	-	876	-	-			73	0	418
Mov Cap-2 Maneuver	-	-	-	-	-	-			73	0	-
Stage 1	-	-	-	-	-	-			306	0	-
Stage 2	-	-	-	-	-	-			320	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.4	55.1
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	548	-	-	876	-	-	73
HCM Lane V/C Ratio	0.002	-	-	0.035	-	-	0.015
HCM Control Delay (s)	11.6	0	-	9.3	0	-	55.1
HCM Lane LOS	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	681	637	8	5	19
Future Vol, veh/h	8	681	637	8	5	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	9	732	685	9	5	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	694	0	-	0	1440	690
Stage 1	-	-	-	-	690	-
Stage 2	-	-	-	-	750	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	911	-	-	-	148	449
Stage 1	-	-	-	-	502	-
Stage 2	-	-	-	-	470	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	911	-	-	-	145	449
Mov Cap-2 Maneuver	-	-	-	-	145	-
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	470	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	17.5
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	911	-	-	-	313
HCM Lane V/C Ratio	0.009	-	-	-	0.082
HCM Control Delay (s)	9	0	-	-	17.5
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	642	55	21	611	37	11
Future Vol, veh/h	642	55	21	611	37	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	3	0	0	0
Mvmt Flow	698	60	23	664	40	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	758	0	1438	728
Stage 1	-	-	-	-	728	-
Stage 2	-	-	-	-	710	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	849	-	148	427
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	491	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	849	-	142	427
Mov Cap-2 Maneuver	-	-	-	-	142	-
Stage 1	-	-	-	-	482	-
Stage 2	-	-	-	-	470	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	35.8
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	168	-	-	849	-
HCM Lane V/C Ratio	0.311	-	-	0.027	-
HCM Control Delay (s)	35.8	-	-	9.4	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	1.2	-	-	0.1	-

Traffic Signal Warrant
Existing Condition

Moole Street & Kalanianaole
Highway Intersection

Eight - Hour Traffic Signal Warrant:

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112
Condition B—Interruption of Continuous Traffic									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

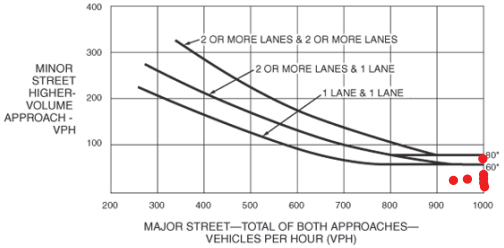
[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Time	Moole 2022 NB	Moole 2022 SB	Kalanianaole 2022 EB	Kalanianaole 2022 WB	Major	Minor	Pass Condition A	Pass Condition B
7:00 - 8:00 AM	73	47	630	617	1247	73	no	yes
8:00 - 9:00 AM	43	22	491	498	989	43	no	no
9:00 - 10:00 AM	41	27	509	438	947	41	no	no
10:00 - 11:00 AM	23	18	534	523	1057	23	no	no
2:00 - 3:00 PM	48	24	718	683	1401	48	no	no
3:00 - 4:00 PM	50	26	698	668	1366	50	no	no
4:00 - 5:00 PM	42	23	700	691	1391	42	no	no
5:00 - 6:00 PM	45	20	685	627	1312	45	no	no

Four - Hour Traffic Signal Warrant:

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

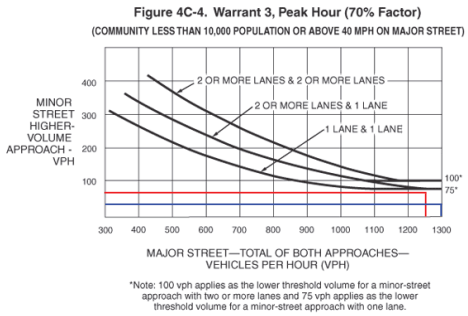
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Time	Moole 2022 NB	Moole 2022 SB	Kalanianaole 2022 EB	Kalanianaole 2022 WB	Major	Minor
7:00 - 8:00 AM	73	47	630	617	1247	73
8:00 - 9:00 AM	43	22	491	498	989	43
9:00 - 10:00 AM	41	27	509	438	947	41
10:00 - 11:00 AM	23	18	534	523	1057	23
2:00 - 3:00 PM	48	24	718	683	1401	48
3:00 - 4:00 PM	50	26	698	668	1366	50
4:00 - 5:00 PM	42	23	700	691	1391	42
5:00 - 6:00 PM	45	20	685	627	1312	45

Peak Hour Traffic Signal Warrant:



Movement	AM Peak	PM Peak
Kalanianaole Hwy EB	664	709
Kalanianaole Hwy WB	607	680
Moole St NB	69	52
Moole St SB	36	25
Major	1271	1389
Minor	69	52

WHC Driveway (West) & Kalanianaole Highway Intersection

Eight - Hour Traffic Signal Warrant:

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112
Condition B—Interruption of Continuous Traffic									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

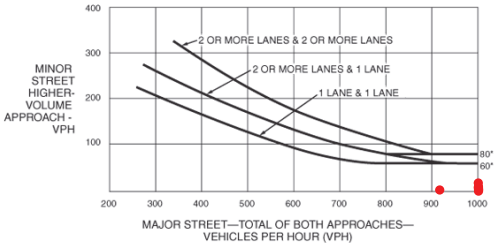
[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Time	WHC (West) 2022 SB	Kalanianaole 2022 EB	Kalanianaole 2022 WB	Major	Minor	Pass Condition A	Pass Condition B
7:00 - 8:00 AM	1	599	626	1225	1	no	no
8:00 - 9:00 AM	4	500	510	1010	4	no	no
9:00 - 10:00 AM	5	486	444	930	5	no	no
10:00 - 11:00 AM	4	514	505	1019	4	no	no
2:00 - 3:00 PM	10	677	673	1350	10	no	no
3:00 - 4:00 PM	9	653	666	1319	9	no	no
4:00 - 5:00 PM	25	640	674	1314	25	no	no
5:00 - 6:00 PM	48	636	608	1244	48	no	no

Four - Hour Traffic Signal Warrant:

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



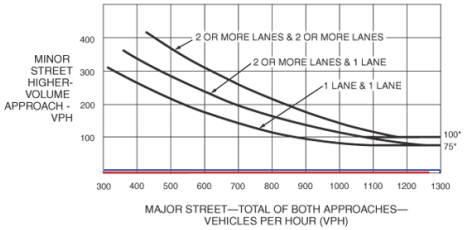
*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Time	WHC (West) 2022 SB	Kalanianaole 2022 EB	Kalanianaole 2022 WB	Major	Minor
7:00 - 8:00 AM	1	599	626	1225	1
8:00 - 9:00 AM	4	500	510	1010	4
9:00 - 10:00 AM	5	486	444	930	5
10:00 - 11:00 AM	4	514	505	1019	4
2:00 - 3:00 PM	10	677	673	1350	10
3:00 - 4:00 PM	9	653	666	1319	9
4:00 - 5:00 PM	25	640	674	1314	25
5:00 - 6:00 PM	48	636	608	1244	48

Peak Hour Traffic Signal Warrant:

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Movement	AM Peak	PM Peak
Kalanianaole Hwy EB	643	682
Kalanianaole Hwy WB	621	685
WHC Driveway (West) SB	3	10
Major	1264	1367
Minor	3	10

Waimanalo School Driveway & Kalanianaole Highway Intersection

Eight - Hour Traffic Signal Warrant:

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-vdume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112
Condition B—Interruption of Continuous Traffic									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-vdume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

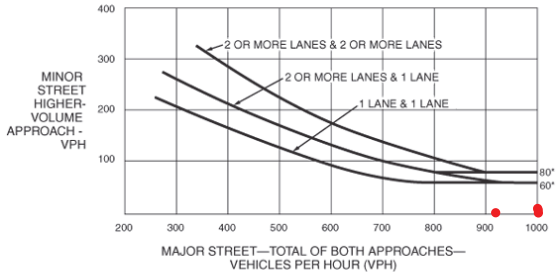
[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Time	St. George 2022 SB	Kalanianaole 2022 EB	Kalanianaole 2022 WB	Major	Minor	Pass Condition A	Pass Condition B
7:00 - 8:00 AM	7	563	661	1224	7	no	no
8:00 - 9:00 AM	5	488	514	1002	5	no	no
9:00 - 10:00 AM	6	492	451	943	6	no	no
10:00 - 11:00 AM	0	511	503	1014	0	no	no
2:00 - 3:00 PM	1	673	708	1381	1	no	no
3:00 - 4:00 PM	3	658	668	1326	3	no	no
4:00 - 5:00 PM	1	636	671	1307	1	no	no
5:00 - 6:00 PM	1	636	607	1243	1	no	no

Four - Hour Traffic Signal Warrant:

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

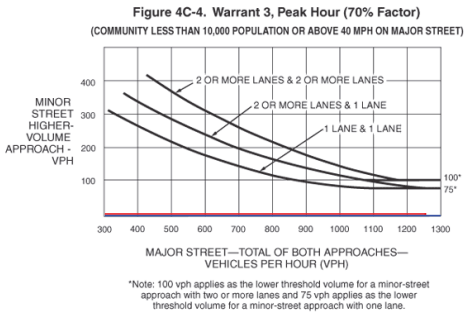
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Time	St. George 2022 SB	Kalanianaole 2022 EB	Kalanianaole 2022 WB	Major	Minor
7:00 - 8:00 AM	7	563	661	1224	7
8:00 - 9:00 AM	5	488	514	1002	5
9:00 - 10:00 AM	6	492	451	943	6
10:00 - 11:00 AM	0	511	503	1014	0
2:00 - 3:00 PM	1	673	708	1381	1
3:00 - 4:00 PM	3	658	668	1326	3
4:00 - 5:00 PM	1	636	671	1307	1
5:00 - 6:00 PM	1	636	607	1243	1

Peak Hour Traffic Signal Warrant:



Movement	AM Peak	PM Peak
Kalanianaole Hwy EB	605	674
Kalanianaole Hwy WB	647	705
St. George Church Driveway SB	10	1
Major	1252	1379
Minor	10	1

WCH Driveway (East) & Kalanianaole Highway Intersection

Eight - Hour Traffic Signal Warrant:

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-volume minor-street approach (one direction only)			
Condition A—Minimum Vehicular Volume									
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112
Condition B—Interruption of Continuous Traffic									
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

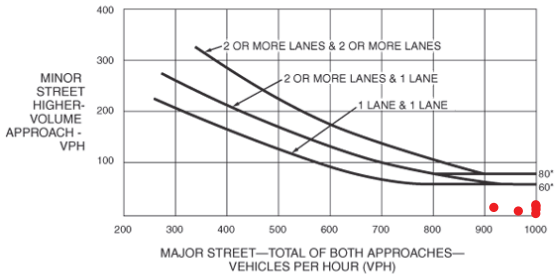
[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Time	WHC (East) 2022 SB	Kalanianaole 2022 EB	Kalanianaole 2022 WB	Major	Minor	Pass Condition A	Pass Condition B
7:00 - 8:00 AM	4	530	612	1142	4	no	no
8:00 - 9:00 AM	14	474	501	975	14	no	no
9:00 - 10:00 AM	24	478	439	917	24	no	no
10:00 - 11:00 AM	32	516	508	1024	32	no	no
2:00 - 3:00 PM	23	683	656	1339	23	no	no
3:00 - 4:00 PM	11	659	654	1313	11	no	no
4:00 - 5:00 PM	19	650	655	1305	19	no	no
5:00 - 6:00 PM	10	628	573	1201	10	no	no

Four - Hour Traffic Signal Warrant:

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

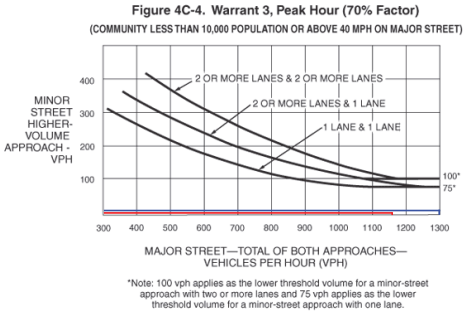
(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Time	WHC (East) 2022 SB	Kalanianaole 2022 EB	Kalanianaole 2022 WB	Major	Minor
7:00 - 8:00 AM	4	530	612	1142	4
8:00 - 9:00 AM	14	474	501	975	14
9:00 - 10:00 AM	24	478	439	917	24
10:00 - 11:00 AM	32	516	508	1024	32
2:00 - 3:00 PM	23	683	656	1339	23
3:00 - 4:00 PM	11	659	654	1313	11
4:00 - 5:00 PM	19	650	655	1305	19
5:00 - 6:00 PM	10	628	573	1201	10

Peak Hour Traffic Signal Warrant:



Movement	AM Peak	PM Peak
Kalanianaole Hwy EB	567	689
Kalanianaole Hwy WB	594	645
WHC Driveway (East) SB	6	24
Major	1161	1334
Minor	6	24

Inoaole Street & Kalanianaole Highway Intersection

Eight - Hour Traffic Signal Warrant:

Table 4C-1. Warrant 1, Eight-Hour Vehicular Volume

Condition A—Minimum Vehicular Volume									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-vdume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	500	400	350	280	150	120	105	84
2 or more	1	600	480	420	336	150	120	105	84
2 or more	2 or more	600	480	420	336	200	160	140	112
1	2 or more	500	400	350	280	200	160	140	112
Condition B—Interruption of Continuous Traffic									
Number of lanes for moving traffic on each approach		Vehicles per hour on major street (total of both approaches)				Vehicles per hour on higher-vdume minor-street approach (one direction only)			
Major Street	Minor Street	100%[a]	80%[b]	70%[c]	56%[d]	100%[a]	80%[b]	70%[c]	56%[d]
1	1	750	600	525	420	75	60	53	42
2 or more	1	900	720	630	504	75	60	53	42
2 or more	2 or more	900	720	630	504	100	80	70	56
1	2 or more	750	600	525	420	100	80	70	56

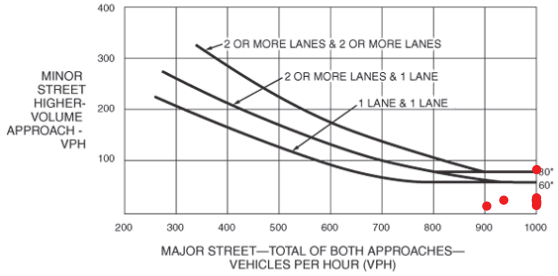
[a] Basic minimum hourly volume
[b] Used for combination of Conditions A and B after adequate trial of other remedial measures
[c] May be used when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000
[d] May be used for combination of Conditions A and B after adequate trial of other remedial measures when the major-street speed exceeds 40 mph or in an isolated community with a population of less than 10,000

Time	Inoaole 2022 NB	Kalanianaole 2022 EB	Kalanianaole 2022 WB	Major	Minor	Pass Condition A	Pass Condition B
7:00 - 8:00 AM	87	502	552	1054	87	no	yes
8:00 - 9:00 AM	48	471	476	947	48	no	no
9:00 - 10:00 AM	37	493	412	905	37	no	no
10:00 - 11:00 AM	39	518	488	1006	39	no	no
2:00 - 3:00 PM	54	676	637	1313	54	no	yes
3:00 - 4:00 PM	42	655	645	1300	42	no	no
4:00 - 5:00 PM	48	640	651	1291	48	no	no
5:00 - 6:00 PM	52	637	564	1201	52	no	no

Four - Hour Traffic Signal Warrant:

Figure 4C-2. Warrant 2, Four-Hour Vehicular Volume (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



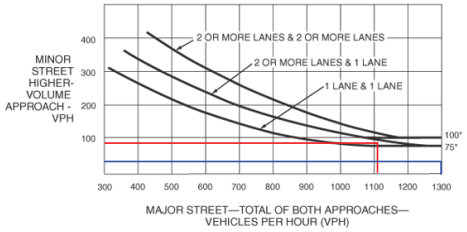
*Note: 80 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 60 vph applies as the lower threshold volume for a minor-street approach with one lane.

Time	Inoaole 2022 NB	Kalanianaole 2022 EB	Kalanianaole 2022 WB	Major	Minor
7:00 - 8:00 AM	87	502	552	1054	87
8:00 - 9:00 AM	48	471	476	947	48
9:00 - 10:00 AM	37	493	412	905	37
10:00 - 11:00 AM	39	518	488	1006	39
2:00 - 3:00 PM	54	676	637	1313	54
3:00 - 4:00 PM	42	655	645	1300	42
4:00 - 5:00 PM	48	640	651	1291	48
5:00 - 6:00 PM	52	637	564	1201	52

Peak Hour Traffic Signal Warrant:

Figure 4C-4. Warrant 3, Peak Hour (70% Factor)

(COMMUNITY LESS THAN 10,000 POPULATION OR ABOVE 40 MPH ON MAJOR STREET)



*Note: 100 vph applies as the lower threshold volume for a minor-street approach with two or more lanes and 75 vph applies as the lower threshold volume for a minor-street approach with one lane.

Movement	AM Peak	PM Peak
Kalanianaole Hwy EB	552	697
Kalanianaole Hwy WB	551	632
Inoaole Street NB	77	48
Major	1103	1329
Minor	77	48

APPENDIX E

Analysis Report For Future Without Project

Synchro Report
2024 Without Project AM

Intersection	
Int Delay, s/veh	6.6

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	13	628	38	11	603	7	50	0	19	14	2	20
Future Vol, veh/h	13	628	38	11	603	7	50	0	19	14	2	20
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	84	84	84	84	84	84	84	84	84	84	84	84
Heavy Vehicles, %	2	2	2	4	4	4	0	0	0	8	8	8
Mvmt Flow	15	748	45	13	718	8	60	0	23	17	2	24

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	726	0	0	793	0	0	1562	1553	771	1560	1571	722
Stage 1	-	-	-	-	-	-	801	801	-	748	748	-
Stage 2	-	-	-	-	-	-	761	752	-	812	823	-
Critical Hdwy	4.12	-	-	4.14	-	-	7.1	6.5	6.2	7.18	6.58	6.28
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.18	5.58	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.18	5.58	-
Follow-up Hdwy	2.218	-	-	2.236	-	-	3.5	4	3.3	3.572	4.072	3.372
Pot Cap-1 Maneuver	877	-	-	819	-	-	92	114	403	88	107	417
Stage 1	-	-	-	-	-	-	381	400	-	395	411	-
Stage 2	-	-	-	-	-	-	401	421	-	364	379	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	877	-	-	819	-	-	82	108	403	79	101	417
Mov Cap-2 Maneuver	-	-	-	-	-	-	82	108	-	79	101	-
Stage 1	-	-	-	-	-	-	369	388	-	383	400	-
Stage 2	-	-	-	-	-	-	366	410	-	333	367	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.2	0.2	110.6	39.3
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	105	877	-	-	819	-	-	147
HCM Lane V/C Ratio	0.782	0.018	-	-	0.016	-	-	0.292
HCM Control Delay (s)	110.6	9.2	0	-	9.5	0	-	39.3
HCM Lane LOS	F	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	4.3	0.1	-	-	0	-	-	1.1

20: Kalaniana'ole Hwy & WHC West Dwy

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	40	618	623	13	2	1
Future Vol, veh/h	40	618	623	13	2	1
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	86	86	86	86	86	86
Heavy Vehicles, %	0	3	3	0	0	0
Mvmt Flow	47	719	724	15	2	1

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	739	0	-	0	1545	732
Stage 1	-	-	-	-	732	-
Stage 2	-	-	-	-	813	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	876	-	-	-	127	424
Stage 1	-	-	-	-	480	-
Stage 2	-	-	-	-	440	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	876	-	-	-	116	424
Mov Cap-2 Maneuver	-	-	-	-	116	-
Stage 1	-	-	-	-	437	-
Stage 2	-	-	-	-	440	-

Approach	EB	WB	SB
HCM Control Delay, s	0.6	0	29.1
HCM LOS			D

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	876	-	-	-	153
HCM Lane V/C Ratio	0.053	-	-	-	0.023
HCM Control Delay (s)	9.3	0	-	-	29.1
HCM Lane LOS	A	A	-	-	D
HCM 95th %tile Q(veh)	0.2	-	-	-	0.1

30: Wai Elm Sch/St George Church & Kalaniana'ole Hwy

Intersection	
Int Delay, s/veh	0.5

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	5	535	78	38	622	2	0	0	0	4	0	6
Future Vol, veh/h	5	535	78	38	622	2	0	0	0	4	0	6
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	85	85	85	85	85	85	85	85	85	85	85	85
Heavy Vehicles, %	0	4	1	5	3	0	0	0	0	0	0	0
Mvmt Flow	6	629	92	45	732	2	0	0	0	5	0	7

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	734	0	0	721	0	0			1510	1556	733
Stage 1	-	-	-	-	-	-			823	823	-
Stage 2	-	-	-	-	-	-			687	733	-
Critical Hdwy	4.1	-	-	4.15	-	-			6.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			5.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			5.4	5.5	-
Follow-up Hdwy	2.2	-	-	2.245	-	-			3.5	4	3.3
Pot Cap-1 Maneuver	880	-	-	867	-	-			134	114	424
Stage 1	-	-	-	-	-	-			435	391	-
Stage 2	-	-	-	-	-	-			503	429	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	880	-	-	867	-	-			121	0	424
Mov Cap-2 Maneuver	-	-	-	-	-	-			121	0	-
Stage 1	-	-	-	-	-	-			430	0	-
Stage 2	-	-	-	-	-	-			459	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0.5	23
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	880	-	-	867	-	-	212
HCM Lane V/C Ratio	0.007	-	-	0.052	-	-	0.055
HCM Control Delay (s)	9.1	0	-	9.4	0	-	23
HCM Lane LOS	A	A	-	A	A	-	C
HCM 95th %tile Q(veh)	0	-	-	0.2	-	-	0.2

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	13	567	597	11	1	5
Future Vol, veh/h	13	567	597	11	1	5
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	88	88	88	88	88	88
Heavy Vehicles, %	0	4	3	0	0	20
Mvmt Flow	15	644	678	13	1	6

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	691	0	-	0	1359	685
Stage 1	-	-	-	-	685	-
Stage 2	-	-	-	-	674	-
Critical Hdwy	4.1	-	-	-	6.4	6.4
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.48
Pot Cap-1 Maneuver	913	-	-	-	165	419
Stage 1	-	-	-	-	504	-
Stage 2	-	-	-	-	510	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	913	-	-	-	161	419
Mov Cap-2 Maneuver	-	-	-	-	161	-
Stage 1	-	-	-	-	491	-
Stage 2	-	-	-	-	510	-

Approach	EB	WB	SB
HCM Control Delay, s	0.2	0	16.1
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	913	-	-	-	331
HCM Lane V/C Ratio	0.016	-	-	-	0.021
HCM Control Delay (s)	9	0	-	-	16.1
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

Intersection	
Int Delay, s/veh	2.1

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	533	32	11	553	58	19
Future Vol, veh/h	533	32	11	553	58	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	89	89	89	89	89	89
Heavy Vehicles, %	4	0	9	3	2	0
Mvmt Flow	599	36	12	621	65	21

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	635	0	1262	617
Stage 1	-	-	-	-	617	-
Stage 2	-	-	-	-	645	-
Critical Hdwy	-	-	4.19	-	6.42	6.2
Critical Hdwy Stg 1	-	-	-	-	5.42	-
Critical Hdwy Stg 2	-	-	-	-	5.42	-
Follow-up Hdwy	-	-	2.281	-	3.518	3.3
Pot Cap-1 Maneuver	-	-	915	-	188	494
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	522	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	915	-	184	494
Mov Cap-2 Maneuver	-	-	-	-	184	-
Stage 1	-	-	-	-	538	-
Stage 2	-	-	-	-	512	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.2	32
HCM LOS			D

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	218	-	-	915	-
HCM Lane V/C Ratio	0.397	-	-	0.014	-
HCM Control Delay (s)	32	-	-	9	0
HCM Lane LOS	D	-	-	A	A
HCM 95th %tile Q(veh)	1.8	-	-	0	-

Synchro Report
2024 Without Project PM

Intersection	
Int Delay, s/veh	3.3

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	20	662	43	18	666	12	35	1	16	10	2	13
Future Vol, veh/h	20	662	43	18	666	12	35	1	16	10	2	13
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	0	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	92	92	92	92	92	92	92	92	92	92	92	92
Heavy Vehicles, %	1	1	1	2	2	2	0	0	0	0	0	0
Mvmt Flow	22	720	47	20	724	13	38	1	17	11	2	14

Major/Minor	Major1			Major2			Minor1			Minor2		
Conflicting Flow All	737	0	0	767	0	0	1567	1565	744	1568	1582	731
Stage 1	-	-	-	-	-	-	788	788	-	771	771	-
Stage 2	-	-	-	-	-	-	779	777	-	797	811	-
Critical Hdwy	4.11	-	-	4.12	-	-	7.1	6.5	6.2	7.1	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-	6.1	5.5	-	6.1	5.5	-
Follow-up Hdwy	2.209	-	-	2.218	-	-	3.5	4	3.3	3.5	4	3.3
Pot Cap-1 Maneuver	873	-	-	847	-	-	91	113	418	91	110	425
Stage 1	-	-	-	-	-	-	387	405	-	396	413	-
Stage 2	-	-	-	-	-	-	392	410	-	383	396	-
Platoon blocked, %		-	-		-	-						
Mov Cap-1 Maneuver	873	-	-	847	-	-	81	104	418	81	101	425
Mov Cap-2 Maneuver	-	-	-	-	-	-	81	104	-	81	101	-
Stage 1	-	-	-	-	-	-	370	387	-	379	396	-
Stage 2	-	-	-	-	-	-	362	394	-	350	379	-

Approach	EB	WB	NB	SB
HCM Control Delay, s	0.3	0.2	70.2	35.7
HCM LOS			F	E

Minor Lane/Major Mvmt	NBLn1	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	108	873	-	-	847	-	-	144
HCM Lane V/C Ratio	0.523	0.025	-	-	0.023	-	-	0.189
HCM Control Delay (s)	70.2	9.2	0	-	9.4	0	-	35.7
HCM Lane LOS	F	A	A	-	A	A	-	E
HCM 95th %tile Q(veh)	2.4	0.1	-	-	0.1	-	-	0.7

20: Kalaniana'ole Hwy & WHC West Dwy

Intersection	
Int Delay, s/veh	0.1

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	3	695	697	4	3	7
Future Vol, veh/h	3	695	697	4	3	7
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	91	91	91	91	91	91
Heavy Vehicles, %	33	1	2	0	0	14
Mvmt Flow	3	764	766	4	3	8

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	770	0	-	0	1538	768
Stage 1	-	-	-	-	768	-
Stage 2	-	-	-	-	770	-
Critical Hdwy	4.43	-	-	-	6.4	6.34
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.497	-	-	-	3.5	3.426
Pot Cap-1 Maneuver	721	-	-	-	129	383
Stage 1	-	-	-	-	461	-
Stage 2	-	-	-	-	460	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	721	-	-	-	128	383
Mov Cap-2 Maneuver	-	-	-	-	128	-
Stage 1	-	-	-	-	458	-
Stage 2	-	-	-	-	460	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0	20.7
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	721	-	-	-	240
HCM Lane V/C Ratio	0.005	-	-	-	0.046
HCM Control Delay (s)	10	0	-	-	20.7
HCM Lane LOS	B	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.1

30: Wai Elm Sch/St George Church & Kalaniana'ole Hwy

Intersection	
Int Delay, s/veh	0.2

Movement	EBL	EBT	EBR	WBL	WBT	WBR	NBL	NBT	NBR	SBL	SBT	SBR
Lane Configurations												
Traffic Vol, veh/h	1	659	30	28	693	0	0	0	0	1	0	0
Future Vol, veh/h	1	659	30	28	693	0	0	0	0	1	0	0
Conflicting Peds, #/hr	0	0	0	0	0	0	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Free	Free	Stop	Stop	Stop	Stop	Stop	Stop
RT Channelized	-	-	None	-	-	None	-	-	None	-	-	None
Storage Length	-	-	-	-	-	-	-	-	-	-	-	-
Veh in Median Storage, #	-	0	-	-	0	-	-	16974	-	-	0	-
Grade, %	-	0	-	-	0	-	-	0	-	-	0	-
Peak Hour Factor	91	91	91	91	91	91	91	91	91	91	91	91
Heavy Vehicles, %	100	1	0	0	2	0	0	0	0	100	0	0
Mvmt Flow	1	724	33	31	762	0	0	0	0	1	0	0

Major/Minor	Major1			Major2					Minor2		
Conflicting Flow All	762	0	0	757	0	0			1567	1583	762
Stage 1	-	-	-	-	-	-			824	824	-
Stage 2	-	-	-	-	-	-			743	759	-
Critical Hdwy	5.1	-	-	4.1	-	-			7.4	6.5	6.2
Critical Hdwy Stg 1	-	-	-	-	-	-			6.4	5.5	-
Critical Hdwy Stg 2	-	-	-	-	-	-			6.4	5.5	-
Follow-up Hdwy	3.1	-	-	2.2	-	-			4.4	4	3.3
Pot Cap-1 Maneuver	538	-	-	863	-	-			73	110	408
Stage 1	-	-	-	-	-	-			300	390	-
Stage 2	-	-	-	-	-	-			332	418	-
Platoon blocked, %		-	-		-	-					
Mov Cap-1 Maneuver	538	-	-	863	-	-			68	0	408
Mov Cap-2 Maneuver	-	-	-	-	-	-			68	0	-
Stage 1	-	-	-	-	-	-			299	0	-
Stage 2	-	-	-	-	-	-			311	0	-

Approach	EB	WB	SB
HCM Control Delay, s	0	0.4	58.8
HCM LOS			F

Minor Lane/Major Mvmt	EBL	EBT	EBR	WBL	WBT	WBR	SBLn1
Capacity (veh/h)	538	-	-	863	-	-	68
HCM Lane V/C Ratio	0.002	-	-	0.036	-	-	0.016
HCM Control Delay (s)	11.7	0	-	9.3	0	-	58.8
HCM Lane LOS	B	A	-	A	A	-	F
HCM 95th %tile Q(veh)	0	-	-	0.1	-	-	0

Intersection	
Int Delay, s/veh	0.4

Movement	EBL	EBT	WBT	WBR	SBL	SBR
Lane Configurations						
Traffic Vol, veh/h	8	697	652	8	5	19
Future Vol, veh/h	8	697	652	8	5	19
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	-	0	0	-	0	-
Grade, %	-	0	0	-	0	-
Peak Hour Factor	93	93	93	93	93	93
Heavy Vehicles, %	0	1	2	0	0	0
Mvmt Flow	9	749	701	9	5	20

Major/Minor	Major1		Major2		Minor2	
Conflicting Flow All	710	0	-	0	1473	706
Stage 1	-	-	-	-	706	-
Stage 2	-	-	-	-	767	-
Critical Hdwy	4.1	-	-	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	2.2	-	-	-	3.5	3.3
Pot Cap-1 Maneuver	899	-	-	-	141	439
Stage 1	-	-	-	-	493	-
Stage 2	-	-	-	-	462	-
Platoon blocked, %		-	-	-		
Mov Cap-1 Maneuver	899	-	-	-	139	439
Mov Cap-2 Maneuver	-	-	-	-	139	-
Stage 1	-	-	-	-	485	-
Stage 2	-	-	-	-	462	-

Approach	EB	WB	SB
HCM Control Delay, s	0.1	0	18
HCM LOS			C

Minor Lane/Major Mvmt	EBL	EBT	WBT	WBR	SBLn1
Capacity (veh/h)	899	-	-	-	303
HCM Lane V/C Ratio	0.01	-	-	-	0.085
HCM Control Delay (s)	9	0	-	-	18
HCM Lane LOS	A	A	-	-	C
HCM 95th %tile Q(veh)	0	-	-	-	0.3

Intersection	
Int Delay, s/veh	1.4

Movement	EBT	EBR	WBL	WBT	NBL	NBR
Lane Configurations						
Traffic Vol, veh/h	658	55	21	626	37	11
Future Vol, veh/h	658	55	21	626	37	11
Conflicting Peds, #/hr	0	0	0	0	0	0
Sign Control	Free	Free	Free	Free	Stop	Stop
RT Channelized	-	None	-	None	-	None
Storage Length	-	-	-	-	0	-
Veh in Median Storage, #	0	-	-	0	0	-
Grade, %	0	-	-	0	0	-
Peak Hour Factor	92	92	92	92	92	92
Heavy Vehicles, %	2	0	3	0	0	0
Mvmt Flow	715	60	23	680	40	12

Major/Minor	Major1		Major2		Minor1	
Conflicting Flow All	0	0	775	0	1471	745
Stage 1	-	-	-	-	745	-
Stage 2	-	-	-	-	726	-
Critical Hdwy	-	-	4.13	-	6.4	6.2
Critical Hdwy Stg 1	-	-	-	-	5.4	-
Critical Hdwy Stg 2	-	-	-	-	5.4	-
Follow-up Hdwy	-	-	2.227	-	3.5	3.3
Pot Cap-1 Maneuver	-	-	836	-	141	417
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	483	-
Platoon blocked, %	-	-		-		
Mov Cap-1 Maneuver	-	-	836	-	135	417
Mov Cap-2 Maneuver	-	-	-	-	135	-
Stage 1	-	-	-	-	473	-
Stage 2	-	-	-	-	462	-

Approach	EB	WB	NB
HCM Control Delay, s	0	0.3	38
HCM LOS			E

Minor Lane/Major Mvmt	NBLn1	EBT	EBR	WBL	WBT
Capacity (veh/h)	160	-	-	836	-
HCM Lane V/C Ratio	0.326	-	-	0.027	-
HCM Control Delay (s)	38	-	-	9.4	0
HCM Lane LOS	E	-	-	A	A
HCM 95th %tile Q(veh)	1.3	-	-	0.1	-

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Appendix F

Consultation and Comments

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United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawai‘i 96850

June 16, 2022

In Reply Refer To:
2022-0055194-S7-001

Mr. Guy Bowker, Facilities Director
Waimānalo Health Center
41-1347 Kalanianaʻole Hwy
Waimānalo, Hawai‘i 96795

Subject: 2022-0055194-S7-001 Species List for Proposed New Waimānalo Health Center Facility at 41-1347 Kalanianaʻole Hwy., TMK (1) 4-1-009-279, Waimānalo, O‘ahu

Dear Mr. Bowker:

Thank you for your letter of June 15, 2022 requesting a species list and guidance for the proposed new Waimānalo Health Center Facility Project at 41-1347 Kalanianaʻole Hwy., TMK (1) 4-1-009-279, on the island of O‘ahu. The proposed project consists of replacing the existing facilities with a new, one-story health care facility. Four separate one-story buildings will be demolish. The proposed project includes associated improvements to site infrastructure and reconfiguration of the parking lot to improve onsite vehicular circulation and access to patient parking spaces.

This letter has been prepared under the authority of and in accordance with provisions of the Endangered Species Act of 1973 (16 U.S.C. 1531 *et seq.*), as amended (ESA). We have reviewed the information you provided and pertinent information in our files, as it pertains to federally listed species in accordance with section 7 of the ESA. Our data indicate the following federally listed species may occur or transit through the vicinity of the proposed project area: the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus);* and the endangered Hawaiian petrel (*Pterodroma sandwichensis*), threatened Newell's shearwater (*Puffinus auricularis newelli*), and endangered Hawaii distinct population segment (DPS) of band-rumped storm-petrel (*Oceanodroma castro*) (hereafter collectively referred to as Hawaiian seabirds).

Hawaiian hoary bat
The Hawaiian hoary bat roosts in both exotic and native woody vegetation across all islands 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 avoid and minimize impacts to the endangered Hawaiian hoary bat we recommend you consider incorporating the following applicable measure into your project description:

- Do not disturb, remove, or trim woody plants greater than 15 feet tall during the bat birthing and pup rearing season (June 1 through September 15).
- Do not use barbed wire for fencing.

Hawaiian seabirds
Hawaiian seabirds may traverse the project area at night during the breeding, nesting and fledging seasons (March 1 to December 15). Outdoor lighting 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.

To avoid and minimize potential project impacts to seabirds we recommend you incorporate the following applicable measures into your project description:

- Fully shield all outdoor lights so the bulb can only be seen from below bulb height and only use when necessary.
- Install automatic motion sensor switches and controls on all outdoor lights or turn off lights when human activity is not occurring in the lighted area.
- Avoid nighttime construction during the seabird fledging period, September 15 through December 15.

We appreciate your efforts to conserve protected species. If you have questions regarding this response, please contact Charmian Dang, Fish and Wildlife Biologist (phone: 808-792-9400, email: Charmian_Dang@fws.gov). When referring to this project, please include this reference number: 2022-0055194-S7-001.

Sincerely,

AARON NADIG Digitally signed by AARON NADIG Date: 2022.06.16 11:49:16 -10'00'

Island Team Manager
O‘ahu, Kaua‘i, Northwestern Hawaiian Islands, and American Samoa

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Mr. Aaron Nadig, Island Team Manager
U.S. Department of the Interior
Fish and Wildlife Service
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Honolulu, Hawaii 96850

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O‘ahu, Hawai‘i Tax Map Key (1) 4-1-009:279

Dear Mr. Nadig,

Thank you for your agency’s comment letter dated June 16, 2022 (Ref. 2022-0055194-S7-001). We acknowledge that federally listed species including the endangered Hawaiian hoary bat and several protected Hawaiian seabirds may occur or transit through the vicinity of the project area. We will incorporate pertinent information and recommendations from the letter in the Environmental Assessment.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

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DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, 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:

June 16, 2022

Mr. Guy Bowker, Facilities Director
Waimanalo Health Center
41-1347 Kalanianaole Highway
Waimanalo, HI 96795
GBowker@waimanalohealth.org

Dear Mr. Bowker:

Thank you for your submittal requesting comments to the Pre-assessment Consultation for an Environmental Assessment for a new Waimanalo Health Center Facility in Waimanalo, Oahu, Hawaii, Tax Map Key (1) 4-1-009:279.

Project activities shall comply with the following Administrative Rules of the Department of Health:

- Chapter 11-39 Air Conditioning & Ventilating
- Chapter 11-41 Lead-based Paint Activities
- Chapter 11-45 Radiation Control
- Chapter 11-46 Community Noise Control
- Chapter 11-501 Asbestos Requirements
- Chapter 11-504 Asbestos Abatement Certification Program

Information pertaining to other health and environmental issues may be addressed by other programs within our department.

Should you have any questions, please contact me at (808) 586-4700.

Sincerely,

Thomas G. Lileikis
Program Manager
Indoor and Radiological Health Branch

C: Claire Oshiro, clair@tlcghawaii.com, The Limtiaco Consulting Group

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Mr. Thomas Lileikis, Program Manager
Department of Health
Indoor and Radiological Health Branch
99-945 Halawa Valley Street
Aiea, HI 96701

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i Tax Map Key (1) 4-1-009:279

Dear Manager Lileikis:

Thank you for your department's comments in the letter dated June 16, 2022. We will include pertinent statements in the Environmental Assessment about the Administrative Rules of the Department of Health and will refer to the regulatory guidance as the project proceeds.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

From: shwb <shwb@doh.hawaii.gov>
Sent: Friday, June 17, 2022 6:42 AM
To: GBowker@waimanalohealth.org
Cc: Claire Oshiro
Subject: FW: Information about the New Waimānalo Health Center Facility
Attachments: 20220615_doh-shwb.pdf; STANDARD COMMENTS.pdf

Aloha,

Attached are our Standard Comments for the proposed New Waimanalo Health Center Facility.

Solid and Hazardous Waste Branch
State of Hawaii | Department of Health
2827 Waimano Home Road, #100, Pearl City, HI 96782
Phone Number: (808) 586-4226 | Fax Number: (808) 586-7509

From: Ichinotsubo, Lene K
Sent: Thursday, June 16, 2022 8:12 AM
To: Kwan, Roxanne S; Brand, Thomas M; Otsu, Lane M
Cc: Balmilero, Diane Orsino; Aragon, Michelle
Subject: FW: Information about the New Waimānalo Health Center Facility

All,
Please review and send any comments to Michelle for consolidation, otherwise, she can send the general comments.

Thanks,

From: Claire Oshiro
Sent: Wednesday, June 15, 2022 9:20 PM
To: Ichinotsubo, Lene K
Subject: [EXTERNAL] Information about the New Waimānalo Health Center Facility

Dear Ms. Ichinotsubo: Please find the attached letter containing information about the proposed New Waimānalo Health Center Facility.

We would greatly appreciate your assistance if we should seek comments from a different individual within your department.

Please do not hesitate to send comments or concerns about the proposed project at this time.

Comments or concerns may be sent to Guy Bowker, Facilities Director (GBowker@waimanalohealth.org) with a copy to me. Thank you.

Claire Oshiro
Direct: (808) 687-8750
Office: (808) 596-7790

Solid and Hazardous Waste Branch
Standard Comments

November 26, 2018

The Solid and Hazardous Waste Branch administers programs in the areas of:

1) Management of hazardous waste;
2) Management of solid waste; and
3) Regulation of underground storage tanks.

Our general comments on projects are below. For further information about these programs, please contact the Solid and Hazardous Waste Branch at (808) 586-4226. All chapters of the Hawaii Revised Statutes (HRS) are at https://www.capitol.hawaii.gov/hrscurrent/.

Hazardous Waste Program

- The state regulations for hazardous waste and used oil are in chapters 11-260.1 to 11-279.1, Hawaii Administrative Rules (HAR) [http://health.hawaii.gov/shwb/hwrules/]. These rules apply to the identification, handling, transportation, storage and disposal of regulated hazardous waste and used oil. Generators, transporters and treatment, storage, and disposal facilities of hazardous waste and used oil must adhere to these requirements. Violations are subject to penalties under chapter 342J, HRS.

Solid Waste Section

- The Solid Waste Section (SWS) enforces laws and regulations contained in chapters 342H and 342I, HRS, and chapter 11-58.1, HAR, "Solid Waste Management Control" [http://health.hawaii.gov/shwb/solid-waste/].

- The purpose of the rules is to establish minimum standards governing the design, construction, installation, operation, and maintenance of solid waste disposal, recycling, reclamation and transfer systems.

- All facilities that accept solid wastes are required to obtain a solid waste management permit from the SWS. Examples of the types of facilities governed by these regulations include landfills, transfer stations and convenience centers, recycling facilities, composting facilities, and salvage facilities. Medical waste, infectious waste, and foreign waste treatment facilities are also included.

- Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Ms. Lene Ichinotsubo
Department of Health
Solid and Hazardous Waste Branch
2827 Waimano Home Road, Suite 100
Pearl City, HI 96782

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, Oʻahu, Hawaiʻi
Tax Map Key (1) 4-1-009:279

Dear Ms. Ichinotsubo:

Thank you for the email correspondence on June 17, 2022 which also transmitted the department's standard comments. We will include pertinent statements in the Environmental Assessment about the Administrative Rules of the Department of Health and will refer to the regulatory guidance as the project proceeds.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

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From: Claire Oshiro
Sent: Friday, June 17, 2022 11:58 AM
To: Woodard, Christopher
Subject: THANKS RE: Information about the New Waimānalo Health Center Facility

Hi Chris: Thank you for letting me know that the HHFDC will not be providing comments at this time. --Claire

---

From: Woodard, Christopher
Sent: Friday, June 17, 2022 11:02 AM
To: Claire Oshiro
Subject: RE: Information about the New Waimānalo Health Center Facility

Aloha Claire—

You are correct in sending this to me. We'll pass on commenting for now and can provide comments to the Draft EA, when more information is available. Also, we're about to onboard a senior planner who will pick up responsibility for this type of review, although I'll remain the point of contact.

Thanks for reaching out.

Chris

Chris Woodard
Chief Planner
Hawaii Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, Hawaii 96813
(808) 587-0588

From: Claire Oshiro
Sent: Thursday, June 16, 2022 2:12 PM
To: Woodard, Christopher
Subject: [EXTERNAL] Information about the New Waimānalo Health Center Facility

Dear Mr. Woodard: Please find the attached letter addressed to Executive Director Iseri-Matsubara that contains information about the proposed New Waimānalo Health Center Facility.

We would greatly appreciate your assistance if we should seek comments from a different individual within your agency.

Please do not hesitate to send comments or concerns about the proposed project at this time.

Comments or concerns may be sent to Guy Bowker, Facilities Director (GBowker@waimanalohealth.org) with a copy to me. Thank you.

Claire Oshiro
Direct: (808) 687-8750
Office: (808) 596-7790

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Mr. Christopher Woodard, Chief Planner
Hawaii Housing Finance and Development Corporation
677 Queen Street, Suite 300
Honolulu, HI 96813

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i
Tax Map Key (1) 4-1-009:279

Dear Mr. Woodard:

Thank you for your email correspondence on June 17, 2022. We acknowledge that the Hawaii Housing Finance and Development Corporation provided no comments about the project. Comments to the Draft Environmental Assessment may be provided at a later date when more information is available.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

From: Claire Oshiro
Sent: Wednesday, June 22, 2022 10:22 AM
To: Joyce Lin
Subject: RE: Request for BWS Comments on the Proposed Waimanalo Health Center

Hi Joyce: The estimated water demands for the health care facility are not known at this time.

In March 2022, my colleague Yvonne Turro did receive two letters from BWS: one letter provided the calculated flow data for fire hydrants No. W01207, W01208 and W02156, and another letter stated that the existing water system is adequate to accommodate the proposed development. Her letter was specifically about the water issues and the pre-assessment letter is a more general inquiry about any concerns.

I apologize that this doesn't answer your question. We look forward to continuing these consultations with BWS as the project proceeds. Thank you. --Claire (808-687-8750)

From: Joyce Lin
Sent: Tuesday, June 21, 2022 3:43 PM
To: Claire Oshiro <claire@tlcghawaii.com>
Subject: Request for BWS Comments on the Proposed Waimanalo Health Center

Hi Claire,

BWS is currently reviewing your request for pre-assessment consultation comments on the proposed improvement and replacement of the existing Waimanalo Health Center.
Would you happen to have the estimated water demands for the health care facility after the proposed improvements?

Thank you,
Joyce

Joyce Lin, P.E. | Civil Engineer
Honolulu Board of Water Supply
Water Resources Division
Project Review Branch
630 South Beretania Street
Honolulu, Hawaii 96843
Phone: 748-5442

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com

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BRYAN P. ANDAYA, Chair
KAPUA SPROAT, Vice Chair
RAY C. SOON
MAX J. SWORD
NA'ALEHU ANTHONY

JADE T. BUTAY, Ex-Officio
DAWN B. SZEWCZYK, P.E., Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ELLEN E. KITAMURA, P.E.
Deputy Manager and Chief Engineer

June 30, 2022

Mr. Guy Bowker
Waimanalo Health Center
41-1347 Kalanianaole Highway
Waimanalo, Hawaii 96795

Dear Mr. Bowker:

Subject: Letter from The Limtiaco Consulting Group Dated June 15, 2022 Requesting Pre-Assessment Consultation Comments on an Environmental Assessment for the Waimanalo Health Center Facility, Located Along Kalanianaole Highway, Tax Map Key: 4-1-009: 279

Thank you for the opportunity to comment on the proposed improvements and replacement of the existing facilities at the Waimanalo Health Care Facility.

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 (BWS) 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.

Water conservation measures are required for all proposed developments. These measures include utilization of nonpotable water for irrigation using rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as a drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

The construction drawings should be submitted for our approval, and the construction schedule should be coordinated to minimize impact to the water system.

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 (808) 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

cc: Claire Oshiro, The Limtiaco Consulting Group

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Manager Ernest Y. W. Lau
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, HI 96843

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, Oʻahu, Hawaiʻi Tax Map Key (1) 4-1-009:279

Dear Manager Lau,

We received email correspondence from your staff (Ms. Lin) on June 21, 2022 and received the agency's comment letter dated June 30, 2022. The following information provided in the letter is acknowledged: the final decision on the availability of water will be confirmed when the building permit application is submitted for approval; the applicant is required to pay the Water System Facilities Charges for resource development, transmission, and daily storage; water conservation measures are required; and the project is subject to BWS Cross-Connection Control and Backflow Prevention requirements. The construction drawings will be submitted to BWS for approval and on-site fire protection requirements will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

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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

RICK BLANGIARDI
MAYOR

DEAN UCHIDA
DIRECTOR

DAWN TAKEUCHI APUNA
DEPUTY DIRECTOR

June 22, 2022 2022/ELOG-1273(GS)

Mr. Guy Bowker, Facilities Director
Waimanalo Health Center
41-1347 Kalanianaole Highway
Waimanalo, Hawaii 96795

Ms. Claire Oshiro, Environmental Planner
The Limtiaco Consulting Group
1622 Kanakanui Street
Honolulu, Hawaii 96817

Dear Mr. Bowker and Ms. Oshiro:

SUBJECT: Pre-Consultation
Draft Environmental Assessment (EA)
New Waimanalo Health Center Facility
41-1347 Kalanianaole Highway - Waimanalo
Tax Map Key 4-1-009: 279 (Parcel 279)

This letter responds to your request (received on June 17, 2022), for preliminary comments on an upcoming Draft EA for the proposed new, one-story health care facility on Parcel 279, which will replace the existing facilities. The subject parcel is 47,097 square feet in area and is located within the R-5 Residential District. You indicate that the proposed work at the subject property includes the demolition of four existing one-story structures and construction of a new one-story structure, as well as associated improvements to site infrastructure and a reconfiguration of the existing parking lot (Project).

The facility was recognized in 1995 as a "public use," because the Waimanalo Health Center provides various general health care services to the community under agreements with the State Department of Health to fulfill specific functions for the public good, as authorized by State law. Public uses are permitted in all zoning districts. A "public use" is defined in Article 10 of the Land Use Ordinance, Chapter 21, Revised Ordinances of Honolulu, as being *"uses conducted by or structures owned or managed by the federal government, the State of Hawaii, or the city to fulfill a governmental*

function, activity, or service for public benefit and in accordance with public policy. Excluded are uses which are not purely a function, activity, or service of government and structures leased by government to private entrepreneurs or to nonprofit organizations."

The Department of Planning and Permitting (DPP) has the following comments:

1. Explain how the new facility will fulfill a core function of a government agency and operate or continue to operate as a "public use" in accordance with the above definition. Please be advised that if the facility (a "medical clinic") does not meet the definition of a "public use," it is not a permitted use in the R-5 Residential District.

2. Discuss the relevant objective, vision, and policy statements from the adopted Oahu General Plan and Koolaupoko Sustainable Communities Plan. The Draft EA should include discussions on how the proposed Project is consistent, inconsistent, or implements each of the relevant statements from the respective plans.

Please be aware that the DPP has recently released new instructions for submitting an EA. While these instructions specifically detail the processes by which an EA should be submitted to the DPP when it is the approving agency, you may find the content requirements outlined in Section VII helpful in preparing this Draft EA. The DPP's EA Instructions are available online at:

http://www.honoluludpp.org/ApplicationsForms/ZoningandLandUsePermits.aspx

The DPP has no further comment at this time. We may have comments for the Draft EA when more detailed plans and a Project narrative are provided. Should you have any questions, please contact Geoffry Spangler, of our staff, at (808) 768-8022 or via email at geoffry.spangler@honolulu.gov.

Very truly yours,

for Dean Uchida
Director

From: Spangler, Geoffry
Sent: Tuesday, August 2, 2022 10:06 AM
To: Claire Oshiro
Cc: Mary Oneha; Fred Erskine
Subject: RE: DOH Letter for Waimanalo Health Center 2022/ELOG-1273

Good morning Ms. Oshiro,

These are well received. I thank you and the Waimanalo Health Center for promptly addressing our questions and providing ancillary documentation. Please be sure to include a section in the Draft EA which discusses the applicability of the "public use" land use designation to the facility. We look forward to reviewing the Draft EA when it is ready, and will provide any additional comments at that time, as warranted.

Should you have any questions, please feel free to reach me.

Have a great day,

Geoffry S. Spangler (he/they)
Planner - Land Use Approval Branch
Department of Planning and Permitting
City and County of Honolulu
808.768.8022

(snip)

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Acting Director Dawn Apuna
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, HI 96813

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, Oʻahu, Hawaiʻi Tax Map Key (1) 4-1-009:279

Dear Acting Director Apuna,

We received the department's letter dated June 22, 2022 (Ref. 2022/ELOG-1273) that is signed by Ms. Shoji for the former Director Uchida. Itemized responses are below.

1. Ms. Mary Oneha, CEO, Waimānalo Health Center (WHC) contacted department staff (Mr. Spangler, Planner, Land Use Approvals Branch) on or around 7/22/2022 to discuss how WHC operates as a "public use." Mr. Spangler received a letter dated 7/28/2022 from the Department of Health (DOH) to Director Uchida that addresses the statutory basis for the contractual agreements between DOH and WHC. The Environmental Assessment (EA) will include a copy of the letter and the discussion of the "public use" designation for WHC.
2. The discussion of the Oahu General Plan and Koolaupoko Sustainable Communities Plan will be included in the EA.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, 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 4 1 009 279 New Waimanalo
Health Center Facility ID 6150

June 27, 2022

Mr. Guy Bowker
Facilities Director
Waimanalo Health Center
41-1347 Kalanianaole Highway
Waimanalo, Hawai 96795
Email: gbowker@waimanalohealth.org

Dear Mr. Bowker:

Subject: Pre-Assessment Consultation for an Environmental Assessment
New Waimanalo Health Center Facility in Waimanalo, Oahu, Hawaii
TMK (1) 4-1-009: 279 (41-1347 Kalanianaole Highway, Waimanalo 96795)

Thank you for allowing us the opportunity to provide comments for the subject project.

We have no comments to offer since the project will be connected to the City and County of Honolulu's sewer system.

Please be informed that 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. All wastewater plans must conform to applicable provisions of the Hawaii Administrative Rules, Chapter 11-62, "Wastewater Systems."

Should you have any questions, please call Mr. Mark Tomomitsu of my staff at (808) 586-4294.

Sincerely,

SINA PRUDER, P.E., CHIEF
Wastewater Branch

LM/MST:lmj

c: Ms. Claire Oshiro, TLCG, via email: claire@tlcghawaii.com

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Ms. Sina Pruder, P.E., Chief
Department of Health - Wastewater Branch
2827 Waimano Home Road
Hale Ola Building, Room 207
Pearl City, HI 96782

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i Tax Map Key (1) 4-1-009:279

Dear Chief Pruder:

Thank you for your department's comments in the letter dated June 27, 2022 (Ref. LUD 141009279 New Waimanalo Health Center Facility ID 6150). We understand that the Wastewater Branch is providing no recommendations because the proposed project will be connected to the municipal sewer system. We acknowledge the statements about design considerations that address the effects to any public trust, Native Hawaiian resources or the exercise of traditional cultural practices, and wastewater plans that conform to applicable Administrative Rules of the Department of Health.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

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

RICK BLANGIARDI
MAYOR

HAKU MILLES, P.E.
ACTING DIRECTOR

June 30, 2022

SENT VIA EMAIL

Mr. Guy Bowker
GBowker@waimanalohealth.org

Ms. Claire Oshiro
claire@tlcghawaii.com

Dear Mr. Bowker and Ms. Oshiro:

Subject: Pre-Assessment Consultation for an Environmental Assessment for a New Waimanalo Health Center Facility in Waimanalo, Oahu, Hawaii TMK: (1) 4-1-009:279

Thank you for the opportunity to review and comment. The Department of Design and Construction has no comments to offer at this time.

Should you have any questions, please contact me at (808) 768-8481.

Sincerely,

Haku Milles, P.E.
Acting Director

HM:krn (882957)

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Acting Director Haku Miles
City and County of Honolulu
Department of Design and Construction
650 South King Street, 11th Floor
Honolulu, HI 96813

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i Tax Map Key (1) 4-1-009:279

Dear Acting Director Miles,

Thank you for your department's letter dated June 30, 2022 (Ref. 882957). We acknowledge that the Department of Design and Construction provided no comments on the proposed project.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

HAWAI'I GAS
THE CLEAN ENERGY COMPANY

June 30, 2022

Mr. Guy Bowker
Facilities Director
Waimanalo Health Center
41-1347 Kalanian'ole Highway
Waimanalo, Hawaii 96795

Dear Mr. Bowker:

Subject: Pre-Assessment Consultation for an Environmental Assessment
for a New Waimanalo Health Center Facility
Waimanalo, O'ahu, Hawai'i
Tax Map Key (1) 4-1-009: 279

In response to The Limtiaco Consulting Group's letter dated June 15, 2022, it has been determined that the area is currently clear of utility gas facilities.

Thank you for the opportunity to comment on Environmental Assessment. Should there be any questions, or if additional information is desired, please call me at 594-5574.

Sincerely,

Hawaii Gas

Keith K. Yamamoto
Manager, Engineering

KKY:krs

✓cc: Ms. Claire Oshiro, The Limtiaco Consulting Group

P.O. Box 3000 | Honolulu, Hawai'i 96802-3000 | www.HawaiiGas.com

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Mr. Keith K. Yamamoto, Engineering Manager
Hawaii Gas
515 Kamakee Street
Honolulu, HI 96814

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i Tax Map Key (1) 4-1-009:279

Dear Mr. Yamamoto,

We received your company's letter dated June 30, 2022 that includes the determination that the area is clear of utility gas facilities.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

Waimānalo Hawaiian Homes Association
41-253 Ilauhole St., Waimānalo, HI 96795
Mail: P.O. Box 353, Waimānalo, HI 96795
www.waimanalohha.com
Phone: (808) 426-1223

July 1, 2022

Mr. Guy Bowker, Facilities Director
Waimānalo Health Center
41-1347 Kalaniana'ole Hwy
Waimānalo HI 96795
GBowker@waimanalohealth.org

Re: Mitigation Letter Addressing Environmental Assessment for Proposed Building Construction of New Waimānalo Health Center Facility at TMK (1) 4-1-009:279

Aloha Kāua.

Mahalo for reaching out to the Waimānalo Hawaiian Homes Association (WHHA) to request a letter regarding the proposed construction project to take place at the Waimānalo Health Center (WHC), specifically at TMK (1) 4-1-009:279. Our organization's purposes and objectives include promoting the "welfare" of our "members in…community" and raising "the standards of home life" of our members. These are founding principles for an organization that has existed since 1938.

Our membership's welfare in community and home life are affected by many factors. Of late, a huge impact has been traffic as a result of road construction. For anyone that has driven into, out of, and/or through Waimānalo over the last year, there has surely been a noticeable swell in the backup of vehicles, which has been known to take over an hour to pass. For folks employed by and traversing to WHC, it is a blatant truth with which they have firsthand experience, especially when you consider the fact that the construction has been ongoing adjacent to and fronting both of the WHC parcels.

All that said, while WHHA understands that whether we support or oppose your construction project, we also understand that the project will likely move forward. Nevertheless, we want to make clear that our constituents are affected by the existing and excessive vehicular traffic. Furthermore, we want to make clear that the additional construction at WHC will only worsen the problem, not unlike that of the experience Waimānalo residents endured during the

Board of Directors
Kenneth Ho, Jr., Denise Ka'a'a, Apela Peahi, Kirk Deitschman, Ilima Ho-Lastimosa, Joe Aipa, Kilauea Wilson

construction of the building at TMK (1) 4-1-009:282 while concurrent road construction was in progress in 2016 and 2017.

To be clear, our kuleana is to that of our members. We hope this letter sheds light on the reality experienced by our residents, neighbors, and members. Should you have any questions and/or comments, please feel free to make contact via any of the information available in the letterhead.

Mahalo.

Kenneth Ho, Jr., EdD
President
Waimānalo Hawaiian Homes Association

Board of Directors
Kenneth Ho, Jr., Denise Ka'a'a, Apela Peahi, Kirk Deitschman, Ilima Ho-Lastimosa, Joe Aipa, Kilauea Wilson

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Mr. Kenneth Ho, Jr., EdD, President
Waimanalo Hawaiian Homes Association
41-253 Ilauhole Street
Waimanalo, HI 96795

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i Tax Map Key (1) 4-1-009:279

Dear Mr. Ho, Jr.,

Thank you for your organization's letter dated July 1, 2022, which describes a noticeable swell in traffic as a result of road construction unrelated to the proposed project. We appreciate the statements about existing inconvenience from vehicular traffic as stated in the letter: the staff at Waimānalo Health Center (WHC) and people who utilize WHC's services are already affected by ongoing construction that is adjacent to and fronting both of the WHC parcels.

The long-term effect of WHC's project is not anticipated to generate a significant amount of additional traffic. In the short-term, there will be construction-related traffic, and we acknowledge that excessive vehicular traffic affects your organization's constituents. We appreciate the information about traffic impacts experienced by Waimānalo residents during construction for WHC's previous project while road construction was in progress in 2016 and 2017. WHC will strive to inform area residents by providing project updates at the neighborhood board meetings.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

Charter COMMUNICATIONS

151 PAILI St. Mililani, HI 96789
(808) 625-2100

Transmittal

Date: 07/08/2022

RE: PROJECT LOCATION/WORK ORDER

To: THE LIMTIACO CONSULTING GROUP.

Waimanalo Health Center
Pre Assessment Consultation.

Attention: Claire Oshiro

We are sending you the following:

- ☐ Pole / Conduit Application
- ☐ Permit Applications
- ☐ Copy of Letter
- ☐ Preliminary / Final Drawings
- ☐ Return Prints
- ☒ Other

Copies	Sht / Appl. #	Description
1		CHARTER RESPONSE LETTER
1		CATV MAPS

The Above is transmitted:

- ☐ For Your Approval
- ☐ For Review and Comment
- ☒ For Your Use / Records
- ☐ As Requested
- ☐ As Approved
- ☒ Other

Comments / Remarks: **REVIEW AND COMMENT FOR JOB NO. WHC Pre consultation.**
IF YOU HAVE ANY COMMENTS OR QUESTIONS, PLEASE CONTACT ME AT:
GUILLERMO.MAYORGA@CHARTER.COM or 808-625-8576 808-224-4801 (cell)

cc: **LORI IHA**

Signed: GUILLERMO MAYORGA
Printed Engr/Title: **CONSTRUCTON COORDINATOR**

DATE: 07/08/2022

The Limtiaco Consulting Group.

Attn: Claire Oshiro
Subject: *WAIMANALO HEALTH CENTER PRE ASSESSMENT.*

Dear Claire Oshiro,

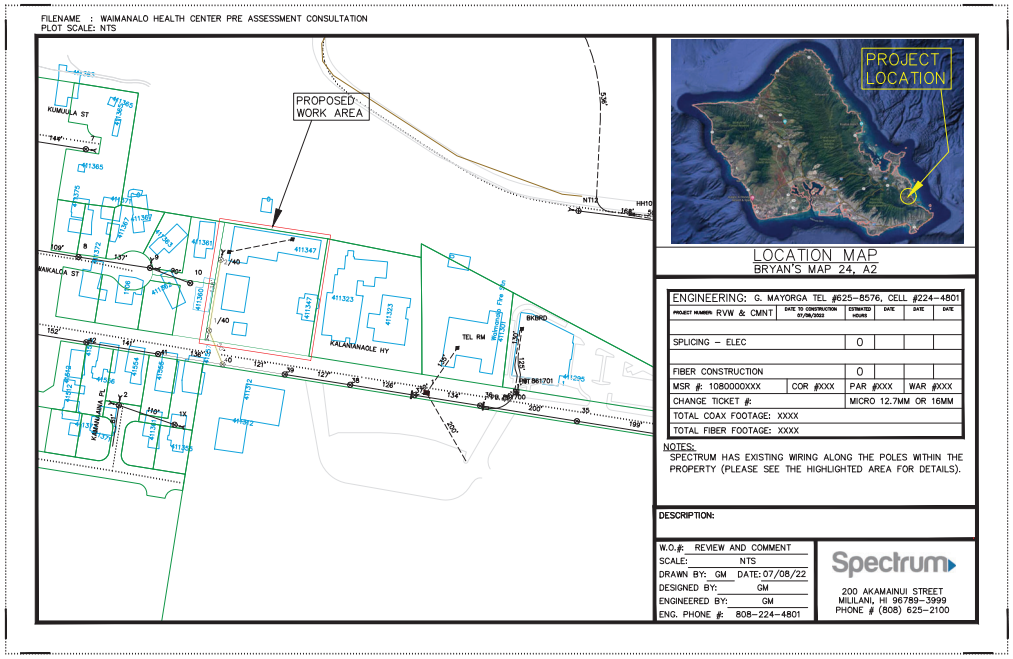
The locations of existing routes and crossings were not shown on the provided plans. Therefore, SPECTRUM is submitting drawings with information of our facilities within the project area.

At this time, Spectrum utilize both HECO and Hawaiian Telcom's (HTCO) existing Poles. The sections of this project that has been highlighted in your scope of work, may conflict with existing CATV facilities and have been marked in Yellow on the enclosed set of plans.

This information has been provided to help minimize delays and prevent damage to existing CATV structures within the project area. Should you have any questions or concerns, please feel free to contact me at 808-224-4801, 808-625-8576, or email me at Guillermo.Mayorga@charter.com

Sincerely,

Guillermo Mayorga
Construction Coordinator



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Mr. Guillermo Mayorga, Construction Coordinator
Charter Communications
151 Paili Street
Mililani, HI 96789

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i Tax Map Key (1) 4-1-009:279

Dear Mr. Mayorga:

Thank you for the information provided with the letter dated July 8, 2022. We acknowledge that SPECTRUM utilizes both Hawaiian Electric Company and Hawaiian Telephone Company poles. The letter and drawings have been shared with the design team.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
711 KAPIOLANI BOULEVARD, SUITE 1600
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

RICK BLANGIARDI
MAYOR

J. ROGER MORTON
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

TP6/22-883018

July 15, 2022

Mr. Guy Bowker, Facilities Director
Waimanalo Health Center
41-1347 Kalanianaole Highway
Waimanalo, Hawaii 96795

Dear Mr. Bowker:

SUBJECT: Pre-Assessment Consultation for an Environmental Assessment for a New Waimanalo Health Center Facility in Waimanalo, Oahu, Hawaii; Tax Map Key (1) 4-1-009:279

Thank you for the opportunity to provide written comments regarding the Pre-Assessment Consultation for an Environmental Assessment for a New Waimanalo Health Center Facility in Waimanalo, Oahu, Hawaii; Tax Map Key (1) 4-1-009:279. We have the following comments.

1. Transportation Impact Assessment (TIA). The applicant shall perform a TIA to examine the vehicle, pedestrian, bicycle, and public transit stress and comfort levels at the nearby intersections and driveways with corresponding improvements to mitigate these impacts by applying Complete Streets principles. The applicant shall discuss the future year growth rate, trip distribution, mode split, and route assignment assumptions used in the TIA.

   The TIA should identify an appropriate speed limit for the streets adjacent to the project by analyzing conflict density and activity level, among other contextual factors, to determine the speed limit that will best minimize the risk of a person being killed or seriously injured. The National Association of City Transportation Officials (NACTO) Safe Speed Study methodology is recommended. A Safe Speed Study should be conducted for the longest relevant segment of a street corridor affected by the project.

   The applicant shall submit all native files (e.g., Synchro, Excel, etc.) for the raw multi-modal counts and accompanying analyses to the Regional Planning Branch (RPB) at dtsplanningdiv@honolulu.gov. Please refer to the Department of Transportation Services (DTS) TIA Guide for multimodal

assessment tools and recommended analyses. The TIA Guide can be found at http://www4.honolulu.gov/docushare/dsweb/View/Collection-7723.

2. Parking. A discussion regarding off-street parking and site generated parking demand shall be added to the TIA.

3. Complete Streets. A Priority 2 Shoulder Bikeway project (Project ID 2-72 in the 2019 Oahu Bike Plan) is located on Kalanianaole Highway fronting the Project site. Any driveways or improvements shall be designed to minimize the number and size of potential conflict areas between bicyclists and turning vehicles.

4. Neighborhood Impacts. The area representatives, 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 and status throughout the project and the impacts that the project may have on the adjoining local street area network.

5. Disability and Communication Access Board (DCAB). Project plans (vehicular and pedestrian circulation, sidewalks, parking and pedestrian pathways, vehicular ingress/egress, etc.) should be reviewed and approved by DCAB to ensure full compliance with Americans with Disabilities Act requirements.

Should you have any questions, please contact Greg Tsugawa, of my staff, at (808) 768-6683.

Very truly yours,

J. Roger Morton
Director

✓ cc: Ms. Claire Oshiro, Environmental Planner
The Limtiaco Consulting Group

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Director J. Roger Morton
Department of Transportation Services
711 Kapiolani Blvd., Suite 1600
Honolulu, HI 96813

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i
Tax Map Key (1) 4-1-009:279

Dear Director Morton:

Thank you for the department's comments dated July 15, 2022 (Ref. TP6/22-883018). We will include the results of the Transportation Impact Assessment (TIA) in the Draft Environmental Assessment (DEA); a copy of the TIA was provided to department staff on August 18, 2022. Parking and bicycle pathways will also be discussed in the DEA. Waimānalo Health Center (WHC) will share updates about its project at neighborhood board meetings which will help to inform area representatives, area residents, emergency personnel, etc. Project plans will be provided to the Disability and Communication Access Board (DCAB) for review.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honolulupd.org

RICK BLANGIARDI
MAYOR

ARTHUR J. LOGAN
CHIEF

KEITH K. HORIKAWA
RADE K. VANIC
DEPUTY CHIEFS

OUR REFERENCE EO-GK

July 18, 2022

SENT VIA EMAIL

Mr. Guy Bowker
GBowker@waimanalohealth.org

Dear Mr. Bowker:

This is in response to a letter from The Limtiaco Consulting Group dated June 29, 2022, requesting comments on the proposed development of a new one-story health care facility that will replace the existing facilities on Parcel 279 in Waimanalo.

Based on the information provided, the Honolulu Police Department (HPD) has reviewed the project and anticipates short-term impacts to pedestrian and vehicular traffic in the area as the subject location is off of Kamehameha Highway, a main roadway in the area. The HPD recommends that adequate notification be made to area schools, businesses, and residents due to the possible ingress and egress of construction vehicles, equipment, and deliveries during the construction phase of the project.

If there are any questions, please call Major Crizalmer Caraang of District 4 (Kaneohe, Kailua, Kahuku) at (808) 723-8639.

Thank you for the opportunity to review this project.

Sincerely,

GLENN HAYASHI
Acting Assistant Chief of Police
Support Services Bureau

cc: Ms. Claire Oshiro, The Limtiaco Consulting Group
claire@tlcghawaii.com

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Acting Assistant Chief Glenn Hayashi
City and County of Honolulu
Police Department - Support Services Bureau
801 South Beretania Street
Honolulu, HI 96813

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i Tax Map Key (1) 4-1-009:279

Dear Assistant Chief Hayashi:

Thank you for providing your department's comments in the letter dated July 18, 2022 (Ref. EO-GK). We acknowledge that the Honolulu Police Department anticipates short-term impacts to pedestrian and vehicular traffic in the area because the project site is along Kamehameha Highway, which is a main roadway in the area. Waimānalo Health Center will strive to inform area residents by providing project updates at the neighborhood board meetings.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

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

July 19, 2022

LD 0618e

Guy Bowker, Facilities Director
Waimanalo Health Center
41-1347 Kalaniana'ole Highway *Via email: GBowker@waimanalohealth.org*
Waimanalo, HI 96795

Dear Mr. Bowker:

SUBJECT: Pre-Assessment Consultation for an Environmental Assessment
New Waimanalo Health Center Facility
Waimanalo, Island of Oahu, Hawaii
TMK: (1) 4-1-009:279

Thank you for the opportunity to review and comment on the subject project. The Land Division of the Department of Land and Natural Resources (DLNR) distributed copies of your request to DLNR's various divisions for their review and comment.

Enclosed are comments received from our Land Division, Oahu District. Should you have any questions, please feel free to contact Barbara Lee via email at *barbara.j.lee@hawaii.gov*. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments
cc: Central Files
Claire Oshiro, The Limtiaco Consulting Group *via email: claire@tlcghawaii.com*

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

June 23, 2022

LD 0618e

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division *(via email: DLNR.engr@hawaii.gov)*
X Div. of Forestry & Wildlife *(via email: rubyrosa.t.terrago@hawaii.gov)*
__Div. of State Parks
X Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
__Office of Conservation & Coastal Lands
X Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*

FROM: Russell Y. Tsuji, Land Administrator Russell Tsuji
SUBJECT: **Pre-Assessment Consultation for an Environmental Assessment**
New Waimanalo Health Center Facility
LOCATION: Waimanalo, Island of Oahu, Hawaii
TMK: (1) 4-1-009:279
APPLICANT: **The Limtiaco Consulting Group on behalf of the Waimanalo Health Center**

Transmitted for your review and comment is information on the above-referenced project. Please review the attached information and submit any comments by the internal deadline of **July 13, 2022** to *barbara.j.lee@hawaii.gov* at the Land Division.

If no response is received by the above due date, we will assume your agency has no comments at this time. Should you have any questions about this request, please contact Barbara Lee at the above email address. Thank you.

BRIEF COMMENTS:

As per the lease terms of GL S-6056, any structure or improvement plans would need to have prior written approval by the Chairperson of the Department of Land and Natural Resources.

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(X) Comments are included/~~attached.~~ to the left

Signed: Darlene Bryant-Takamatsu BC
Print Name: Darlene Bryant-Takamatsu
Division: Land Division
Date: 7/7/2022

Attachments
Cc: Central Files

LD 0618e

RECEIVED
LAND DIVISION
2022 JUN 15 PM 1:22
DEPT. OF LAND
& NATURAL RESOURCES
STATE OF HAWAII

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

June 15, 2022

Subject: Pre-Assessment Consultation for an Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i
Tax Map Key (1) 4-1-009:279

Dear Sir or Madam,

In 2015, the Board of Land and Natural Resources awarded a 65-year lease to Waimānalo Health Center (WHC) for Tax Map Key (TMK) 4-1-009:279 (hereafter "Parcel 279"). WHC operates as a domestic non-profit and 501(c)(3) organization that qualifies for direct lease. On behalf of WHC, The Limtiaco Consulting Group is preparing an Environmental Assessment (EA) for the proposed development of a new, one-story health care facility on Parcel 279 that will replace existing facilities. We are soliciting comments for the pre-assessment consultation phase of the EA pursuant to Chapter 343, Hawai'i Revised Statutes and Title 11, Chapter 200.1, Hawai'i Administrative Rules of the Department of Health.

Parcel 279 is located along Kalaniana'ole Highway, adjacent to St. George Church, and across from Waimānalo Elementary and Intermediate School. WHC is proposing to demolish four separate one-story buildings on Parcel 279 that have reached the end of their service life. Completion of the project will allow WHC to provide its services and programs from a modern, one-story health care facility. The proposed project includes associated improvements to site infrastructure and reconfiguration of the parking lot to improve onsite vehicular circulation and access to patient parking spaces. The programs and services provided by WHC will continue while the project advances from demolition through the various phases of construction.

We would greatly appreciate input from you or your organization that will assist WHC and its stakeholders in determining appropriate mitigation measures that may be warranted due to WHC's project. The enclosed location map is provided for your reference. We would appreciate the responses to this pre-assessment consultation letter by July 15, 2022.

Please send comments to:

Guy Bowker, Facilities Director
Waimānalo Health Center
41-1347 Kalaniana'ole Highway
Waimānalo, Hawai'i 96795
GBowker@waimanalohealth.org

And please provide a copy to:

Claire Oshiro, Environmental Planner
The Limtiaco Consulting Group
1622 Kanakanui Street
Honolulu, Hawai'i 96817
claire@tlcghawaii.com

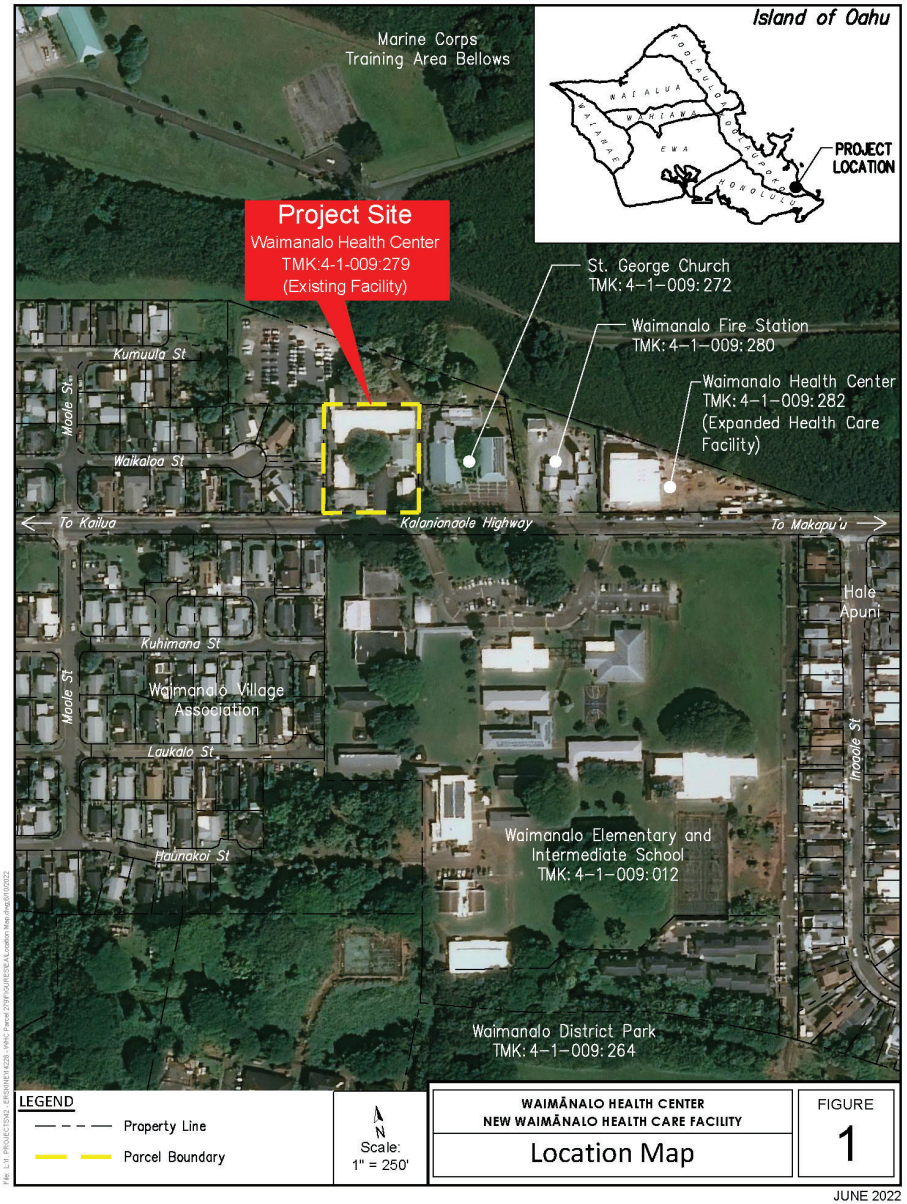
(flip page to continue)

Thank you for your interest and participation in the environmental review process. Should you have any questions, please do not hesitate to contact me at 808-687-8750.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro

Claire Oshiro
Environmental Planner



THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Mr. Russell Y. Tsuji, Land Administrator
Department of Land and Natural Resources
Land Division
P.O. Box 621
Honolulu, HI 96809

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i Tax Map Key (1) 4-1-009:279

Dear Administrator Tsuji:

Thank you for the Land Division's comments (Ref. LD 0618e) that are signed and dated as of July 7, 2022. We acknowledge that any structure or improvement plans would need to have prior written approval by the Chairperson of the Department of Land and Natural Resources per the lease terms of GL S-6056. We also appreciate the distribution of our request letter to the other divisions.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

DAVID Y. IGE
GOVERNOR

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JADE T. BUTAY
DIRECTOR

Deputy Directors
ROSS M. HIGASHI
EDUARDO P. MANGLALLAN
EDWIN H. SNIFFEN

IN REPLY REFER TO:

DIR 0593
HWY-PS 2.9172

September 7, 2022

VIA EMAIL: GBowker@waimanalohealth.org

Mr. Guy Bowker
Facilities Director
Waimanalo Health Center
41-1347 Kalanianaole Highway
Waimanalo, Hawaii 96795

Dear Mr. Bowker:

Subject: Request for Comments for Early Consultation
Waimanalo Health Center
Kalanianaole Highway (State Route 72)
Tax Map Key No: (1) 4-1-009: 279 – Waimanalo, Oahu, Hawaii

Thank you for your letter dated June 15, 2022, requesting for our comments for an upcoming Draft Environmental Assessment (DEA) pursuant to Chapter 343 of the Hawaii Revised Statutes for the use of State/County lands and funds. The site is owned by the State Board of Land and Natural Resources with an existing Waimanalo Health Center.

The proposed work will include the demolition of four existing buildings and the construction of a new one-story, health care facility. Additional proposed work also includes reconfiguration of the parking lot and associated infrastructure improvements.

As an early consultation, there is no detailed site plan included; however the site access appears to be off the State Kalanianaole Highway (Route 72).

The Hawaii Department of Transportation (HDOT) has the following comments:

1. A Traffic Assessment or a Traffic Impact Analysis Report should be provided and contain the following:

   a. An evaluation should be provided in the study to help identify whether the proposed daily operations related to typical trip patterns, including number of staff, will have any local impacts to the roadways, nearby state highways, and any required mitigations measures.

2. The DEA and the traffic study should include a discussion on any planned bicyclist/pedestrian paths leading into the project site. The HDOT requires that appropriate measures should be taken to mitigate safety and connectivity with the immediate surrounding communities.

If you have any questions, please contact Jeyan Thirugnanam, Systems Planning Engineer, Highways Division, Planning Branch at (808) 587-6336 or by email at jeyan.thirugnanam@hawaii.gov. Please reference file review number PS 2022-118.

Sincerely,

JADE T. BUTAY
Director of Transportation

c: Claire Oshiro (The Limtiaco Consulting Group)

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

October 27, 2022

Director Jade Butay
Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813

Subject: Response to Pre-Assessment Consultation, Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O‘ahu, Hawai‘i
Tax Map Key (1) 4-1-009:279

Dear Director Butay:

Thank you for the department’s comments dated September 7, 2022 (Ref. DIR 0593, HWY-PS 2.9172). Itemized responses are below.

1. A Traffic Impact Analysis Report (TIAR) was completed that includes the analysis of vehicular and multimodal accessibility and circulation. Waimānalo Health Center (WHC) is proposing to demolish 4 of 5 existing buildings on the project site. New construction would result in 1 replacement facility that will have driveway access and a parking lot. The resulting facility will have a smaller GFA than exists while performing similar duties, thereby having a similar trip generation and impact on surrounding roads. Consequently, no additional mitigation is required.
2. The TIAR includes a discussion of planned bicycle/pedestrian paths leading into the project site through an access off of Kalanianaole Highway. A brief summary is also provided on the Kalanianaole Highway Improvements currently under construction that include raised concreate sidewalks and paved shoulders on both sides of Kalanianaole Highway.

Thank you for your interest and participation in the environmental review process.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Environmental Planner

1622 Kanakanui Street • Honolulu, Hawaii 96817
(808) 596-7790 • tlcghawaii.com

DAVID Y. IGE
GOVERNOR OF HAWAII

ELIZABETH A. CHAR, 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:

November 28, 2022

Mr. Guy Bowker, Facilities Director
Waimanalo Health Center
41-1347 Kalanianaole Highway
Waimanalo, HI 96795
GBowker@waimanalohealth.org

Dear Mr. Bowker:

Thank you for your submittal requesting comments to the Draft Environmental Assessment for the new Waimanalo Health Center Facility in Waimanalo, Koolaupoko, Oahu, Hawaii, Tax Map Key (1) 4-1-009:279.

Project activities shall comply with the following Administrative Rules of the Department of Health:

- Chapter 11-39 Air Conditioning & Ventilating
- Chapter 11-41 Lead-based Paint Activities
- Chapter 11-45 Radiation Control
- Chapter 11-46 Community Noise Control
- Chapter 11-501 Asbestos Requirements
- Chapter 11-504 Asbestos Abatement Certification Program

Information pertaining to other health and environmental issues may be addressed by other programs within our department.

Should you have any questions, please contact me at (808) 586-4700.

Sincerely,

Thomas G. Lileikis
Program Manager
Indoor and Radiological Health Branch

C: Claire Oshiro, clair@tlcghawaii.com, The Limtiaco Consulting Group

WAIMĀNALO
HEALTH CENTER

February 21, 2023

SENT VIA EMAIL ONLY: <sharilynn.uchima@doh.hawaii.gov>
Ms. Shari Lynn Uchima
Department of Health
Indoor and Radiological Health Branch

Subject: Response to Draft Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, Ko'olaupoko, Island of O'ahu, Hawai'i
TMK: (1) 4-1-009:279

Dear Ms. Uchima:

Thank you for sending the comment letter signed by Program Manager Lileikis (now retired) and dated November 28, 2022. Would you kindly distribute this response to the appropriate staff at the Indoor and Radiological Health Branch. The Final Environmental Assessment (EA) will include pertinent statements about the Administrative Rules of the Department of Health and its regulatory guidance.

Please contact me at (808) 954-7121 or by email at GBowker@waimanalohealth.org if you have any questions. You may also contact our consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at (808) 687-8750 or by email at claire@tlcghawaii.com.

Sincerely,

Guy Bowker

Guy Bowker, Facilities Director
Waimānalo Health Center

c: Claire Oshiro, TLCG (claire@tlcghawaii.com)

Solid and Hazardous Waste Branch Standard Comments

November 26, 2018

The Solid and Hazardous Waste Branch administers programs in the areas of:

1) Management of hazardous waste;
2) Management of solid waste; and
3) Regulation of underground storage tanks.

Our general comments on projects are below. For further information about these programs, please contact the Solid and Hazardous Waste Branch at (808) 586-4226. All chapters of the Hawaii Revised Statutes (HRS) are at https://www.capitol.hawaii .gov/hrscurrent/.

Hazardous Waste Program

- The state regulations for hazardous waste and used oil are in chapters 11-260.1 to 11-279.1, Hawaii Administrative Rules (HAR) [http://health.hawaii.go v/shwb/hwrules/]. These rules apply to the identification, handling, transportation, storage, and disposal of regulated hazardous waste and used oil. Generators, transporters and treatment, storage, and disposal facilities of hazardous waste and used oil must adhere to these requirements. Violations are subject to penalties under chapter 342J, HRS.

Solid Waste Section

- The Solid Waste Section (SWS) enforces laws and regulations contained in chapters 342H and 3421, HRS, and chapter 11-58.1, HAR, "Solid Waste Management Control" [http://health.hawaii.gov/shwb/solid-waste/].

- The purpose of the rules is to establish minimum standards governing the design, construction, installation, operation, and maintenance of solid waste disposal, recycling, reclamation, and transfer systems.

- All facilities that accept solid wastes are required to obtain a solid waste management permit from the SWS. Examples of the types of facilities governed by these regulations include landfills, transfer stations and convenience centers, recycling facilities, composting facilities, and salvage facilities. Medical waste, infectious waste, and foreign waste treatment facilities are also included.

- Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Managers of construction and demolition projects should require their waste contractors to submit disposal receipts and invoices to ensure proper disposal of wastes.

- Chapters 342H and 3421, HRS, and chapter 11-58.1, HAR, "Solid Waste Management Control" requires the proper management of solid wastes. Generators of solid waste are required to ensure that their wastes are properly delivered to permitted solid waste management facilities. Project managers should require their waste contractors to submit disposal (and recycling) receipts and invoices to ensure proper disposal (or recycling) of wastes.

- Chapter 342G, HRS, encourages the reduction of waste generation, reuse of discarded materials, and the recycling of solid waste. The project developer is highly encouraged to develop a solid waste management plan for each construction project to ensure proper handling of wastes and divert recyclables from being landfilled. Ideally, the plan would seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

Office of Solid Waste Management

- The Office of Solid Waste Management (OSWM) administers statewide integrated solid waste management planning activities, which apply to the counties, as well as various recycling programs, e.g., the Glass Advance Disposal Fee (ADF) and Deposit Beverage Container (DBC) Programs. Management of the DBC Program is conducted pursuant to chapter 342G, HRS, which contains compliance and enforcement provisions, and chapter 11-282, HAR, "Deposit Beverage Recycling" [http://health.hawaii.gov/hi5/rules-regulations- additional- links/]. OSWM is also responsible for limited enforcement and compliance of solid waste management facilities that operate primarily as certified DBC redemption centers pursuant to chapter 342H, HRS, and chapter 11-58.1, HAR, "Solid Waste Management Control" [http://health.hawaii.gov/shwb/solid-waste/]. Authority for the integrated solid waste management planning and ADF programs is contained in chapter 342G, HRS.

- Glass Advance Disposal Fee Program: Businesses that import glass containers into Hawaii are required to register with the Department of Health (DOH) and pay a 1.5 cent per container fee. Fee revenue is distributed to the counties for the operation of glass recycling programs.

- Deposit Beverage Container Program: Business that manufacture or import deposit beverage containers into Hawaii are required to register with the DOH and pay the five-cent deposit and one cent container fee on each deposit container. Deposits and fees are deposited into a special fund and are used to reimburse DBC redemption center refunds paid to consumers; and to pay handling fees to redemption/recycling companies to process and recycle collected deposit beverage containers; and to pay program administrative costs.

Solid and Hazardous Waste Branch Standard

- The DOH reimburses and pays an associated handling fee for the redemption of DBC. These transactions are conducted only with certified redemption centers. Certification requires obtaining a solid waste management permit from the SWS (which addresses environmental issues) and a certification from the DBC program (which standardizes the redemption process).

- Solid waste management plans seek to maximize waste diversion and minimize disposal. Such plans should include designated areas to promote the collection of reusable and recyclable materials.

Underground Storage Tank Program

- The state's underground storage tank (UST) regulations, found in chapter 11-280.1, HAR [http://health.hawaii.gov/shwb/underg round-storage-tanks /], include specific requirements that UST owners and operators must meet when installing, operating, and permanently closing their UST systems and addressing releases from USTs. Violations are subject to penalties under chapter 11-280.1, HAR, and chapter 342L, HRS.

- A permit is required prior to the installation and operation of a UST. Any new UST system that will be installed must have secondary containment with interstitial monitoring. Refer to subchapters 2, 3, 4, and 12 of chapter 11-280.1, HAR. The installation permit expires 1 year from the date of issuance. The operation permit expires 5 years from the date of issuance.

- §11-280.1-50, HAR, requires owners and operators of USTs or tank systems to notify DOH within 24 hours and follow the procedures in §11-280.1-52, HAR, if any of the following occur, with specific exceptions found in the rules:

  1) The discovery by any person of evidence of regulated substances which may have been released at the UST site or in the surrounding area (such as the presence of free product or vapors in soils, basements, sewer and utility lines, or nearby surface water);
  2) Unusual UST system operating conditions observed or experienced (such as the erratic behavior of product dispensing equipment, the sudden loss of product from the UST, or an unexplained presence of water in the tank); or
  3) Monitoring results from a release detection method required under §§11-280.1-41 or 11-280 .1-42 indicate a release may have occurred.

- For release response actions, responsible parties and their consultants and contractors should follow the applicable guidance in the DOH, Hazard Evaluation Emergency (HEER) Office Technical Guidance Manual, HEER Environmental Action Level (EAL) guidance, and other guidance documents on the DOH HEER Office website [http://eha- web.doh.hawaii.gov /eha-cma/Org/HEER/], including those pertaining to Multi-Increment Sampling of soil, low flow groundwater sampling, soil vapor sampling, and Environmental Hazard Evaluations /Environmental Hazard Management Plans.

For further information about these programs,
please contact the Solid and Hazardous Waste Branch

WAIMĀNALO
HEALTH CENTER

February 21, 2023

SENT VIA EMAIL ONLY: <shwb@doh.hawaii.gov>
Ms. Lene Ichinotsubo
Department of Health
Solid and Hazardous Waste Branch

Subject: Response to Draft Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, Koʻolaupoko, Island of Oʻahu, Hawaiʻi
TMK: (1) 4-1-009:279

Dear Ms. Ichinotsubo:

Thank you for your department's standard comments that were emailed by Ms. Michelle Aragon on December 8, 2022. The Final Environmental Assessment (EA) will include pertinent statements about the standard comments from the Solid and Hazardous Waste Branch.

Please contact me at (808) 954-7121 or by email at GBowker@waimanalohealth.org if you have any questions. You may also contact our consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at (808) 687-8750 or by email at claire@tlcghawaii.com.

Sincerely,

Guy Bowker

Guy Bowker, Facilities Director
Waimānalo Health Center

c: Claire Oshiro, TLCG (claire@tlcghawaii.com)

41-1347 Kalaniana'ole Hwy, Waimānalo, HI 96795 • (808) 259-7948 • WaimanaloHealth.org

From: Watase, Dean K
Sent: Friday, December 9, 2022 10:54 AM
To: Claire Oshiro
Cc: Woodard, Christopher
Subject: Draft Environmental Assessment (EA) for the New Waimānalo Health Center Facility

Aloha Claire,

Thank you for the opportunity to comment on this project. The Waimanalo Health Center will provide a beneficial community amenity for the neighborhood. We have no comment.

Mahalo

Dean Watase
Housing Planning Manager
Hawaii Housing & Finance Development Corporation
677 Queen Street, Suite 300
Honolulu, Hawaii 96813
Phone: 808 587-0639

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WAIMĀNALO
HEALTH CENTER

February 22, 2023

SENT VIA EMAIL ONLY: <dean.k.watase@hawaii.gov>
Mr. Dean Watase, Housing Planning Manager
Hawaii Housing and Finance Development Corporation

Subject: Response to Draft Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, Koʻolaupoko, Island of Oʻahu, Hawaiʻi
TMK: (1) 4-1-009:279

Dear Mr. Watase:

Thank you for the email sent on December 9, 2022 which includes the statement of no comment from the Hawaii Housing and Finance Development Corporation (HHFDC). We appreciate your acknowledgment that the Waimānalo Health Center project will provide a beneficial community amenity for the neighborhood.

Please contact me at (808) 954-7121 or by email at GBowker@waimanalohealth.org if you have any questions. You may also contact our consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at (808) 687-8750 or by email at claire@tlcghawaii.com.

Sincerely,

Guy Bowker

Guy Bowker, Facilities Director
Waimānalo Health Center

c: Christopher Woodard, HHFDC (christopher.j.woodard@hawaii.gov)
Claire Oshiro, TLCG (claire@tlcghawaii.com)

DAVID Y. IGE
GOVERNOR
STATE OF HAWAII

JOSH GREEN
LT. GOVERNOR
STATE OF HAWAII

WILLIAM J. AILA, JR
CHAIRMAN
HAWAIIAN HOMES COMMISSION

TYLER I. GOMES
DEPUTY TO THE CHAIRMAN

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P. O. BOX 1879
HONOLULU, HAWAII 96805

November 30, 2022 Ref.:PO-22-249

Guy Bowker
Facilities Director
Waimānalo Health Center
41-1347 Kalanianaole Hwy.
Waimānalo, HI 96795
email: GBowker@waimanalohealth.org

Aloha Guy:

Subject: Draft Environmental Assessment (EA)
Waimānalo Health Center Facility
Waimānalo, O'ahu, Hawai'i
Tax Map Key (1) 4-1-009:279

The Department of Hawaiian Home Lands acknowledges receiving the request for comments on the above-cited project. After reviewing the materials submitted, due to its lack of proximity to Hawaiian Home Lands, we do not anticipate any impacts to our lands or beneficiaries from the project.

However, we highly encourage all agencies to consult with Hawaiian Homestead community associations and other (N)native Hawaiian organizations when preparing environmental assessments in order to better assess potential impacts to cultural and natural resources, access and other rights of Native Hawaiians.

Mahalo for the opportunity to provide comments. If you have any questions, please contact the Planning Office at (808)620-9500, or via email at: dhhl.planning@hawaii.gov.

Me ke aloha,

William J. Ailā, Jr., Chairman
Hawaiian Homes Commission

c: Claire Oshiro
Environmental Planner
Limtiaco Consulting Group
claire@tlcghawaii.com

WAIMĀNALO
HEALTH CENTER

February 21, 2023

SENT VIA EMAIL ONLY: <dhhl.contactcenter@hawaii.gov>
Mr. Ikaika Anderson, Chairperson
Hawaiian Homes Commission
Department of Hawaiian Home Lands

Subject: Response to Draft Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, Ko'olaupoko, Island of O'ahu, Hawai'i
TMK: (1) 4-1-009:279, Ref. PO-22-249

Dear Mr. Anderson:

Thank you for the letter dated November 30, 2022 that was signed by your predecessor Chairman Aila, Jr. (Ref. PO-22-249). We acknowledge the comment that due to the lack of proximity to Hawaiian Home Lands, the Department of Hawaiian Home Lands (DHHL) does not anticipate any impacts from the project to its lands or beneficiaries. We also acknowledge DHHL's recommendation to consult with Hawaiian Homestead community associations and other (N)native Hawaiian organizations when preparing environmental assessments.

Please contact me at (808) 954-7121 or by email at GBowker@waimanalohealth.org if you have any questions. You may also contact our consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at (808) 687-8750 or by email at claire@tlcghawaii.com.

Sincerely,

Guy Bowker

Guy Bowker, Facilities Director
Waimānalo Health Center

c: Andrew Choy, DHHL (andrew.h.choy@hawaii.gov, dhhl.planing@hawaii.gov)
Claire Oshiro, TLCG (claire@tlcghawaii.com)

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843
www.boardofwatersupply.com

December 9, 2022

RICK BLANGIARDI, MAYOR

BRYAN P. ANDAYA, Chair
KAPUA SPROAT, Vice Chair
MAX J. SWORD
NA'ALEHU ANTHONY
JONATHAN KANESHIRO

DAWN B. SZEWCZYK, P.E., Ex-Officio
EDWIN H. SNIFFEN, Ex-Officio

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

ERWIN M. KAWATA
Deputy Manager

Mr. Guy Bowker
Waimanalo Health Center
41-1347 Kalanianaole Highway
Waimanalo, Hawaii 96795

Dear Mr. Bowker:

Subject: Your Letter Dated November 23, 2022 Requesting Comments on the Draft Environmental Assessment for the Proposed New Waimanalo Health Center Facility on Kalanianaole Highway – Tax Map Key: 4-1-009: 279

Thank you for the opportunity to comment on the proposed improvements and replacement of the existing facilities at the Waimanalo Health Care Facility.

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 (BWS) 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.

Water conservation measures are required for all proposed developments. These measures include utilization of nonpotable water for irrigation using rain catchment, drought tolerant plants, xeriscape landscaping, efficient irrigation systems, such as a drip system and moisture sensors, and the use of Water Sense labeled ultra-low flow water fixtures and toilets.

The proposed project is subject to BWS Cross-Connection Control and Backflow Prevention requirements prior to the issuance of the Building Permit Applications.

The construction drawings should be submitted for our approval, and the construction schedule should be coordinated to minimize impact to the water system.

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 (808) 748-5443.

Very truly yours,

ERNEST Y. W. LAU, P.E.
Manager and Chief Engineer

cc: Claire Oshiro, The Limtiaco Consulting Group

WAIMĀNALO
HEALTH CENTER

February 21, 2023

SENT VIA EMAIL ONLY: <dkoge@hbws.org>
Mr. Daniel Koge, P.E., MPA
Board of Water Supply

Subject: Response to Draft Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, Koʻolaupoko, Island of Oʻahu, Hawaiʻi
TMK: (1) 4-1-009:279

Dear Mr. Koge, P.E., MPA:

We received the letter signed by Manager Lau, P.E. dated December 9, 2022 and thank the Board of Water Supply (BWS) for indicating that the existing BWS system is adequate to accommodate the proposed development. We acknowledge the following information that was provided in the letter: the final decision on the availability of water will be confirmed when the building permit application is submitted for approval; the applicant is required to pay the Water System Facilities Charges for resource development, transmission, and daily storage; water conservation measures are required; and the project is subject to BWS Cross-Connection Control and Backflow Prevention requirements. The construction drawings will be submitted to BWS for approval and on-site fire protection requirements will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

Please contact me at (808) 954-7121 or by email at GBowker@waimanalohealth.org if you have any questions. You may also contact our consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at (808) 687-8750 or by email at claire@tlcghawaii.com.

Sincerely,

Guy Bowker

Guy Bowker, Facilities Director
Waimānalo Health Center

c: Robert Chun, BWS (rchun@hbws.org)
Claire Oshiro, TLCG (claire@tlcghawaii.com)

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

RICK BLANGIARDI
MAYOR

HAKU MILLES, P.E.
DIRECTOR DESIGNATE

BRYAN GALLAGHER, P.E.
ACTING DEPUTY DIRECTOR

December 20, 2022

SENT VIA EMAIL

Guy Bowker
Gbowker@waimanalohealth.org

Claire Oshiro
claire@tlcghawaii.com

Dear Mr. Bowker and Ms. Oshiro:

Subject: Draft Environmental Assessment for a New Waimanalo Health Center Facility in Waimanalo, Oahu, Hawaii
Tax Map Key (1) 4-1-009:279

Thank you for the opportunity to review and comment. The Department of Design and Construction has no comments to offer at this time.

Should you have any further questions, please contact me at (808) 768-8481.

Sincerely,

Bryan Gallagher
for Haku Milles, P.E., LEED AP
Director Designate

HM:krn (892728)

WAIMĀNALO
HEALTH CENTER

February 21, 2023

SENT VIA EMAIL ONLY: <ddc@honolulu.gov>
Mr. Haku Milles, P.E., LEED AP, Director
City and County of Honolulu
Department of Design and Construction

Subject: Response to Draft Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, Koʻolaupoko, Island of Oʻahu, Hawaiʻi
TMK: (1) 4-1-009:279, Ref. 892728

Dear Director Milles:

Thank you for the letter dated December 20, 2022 (Ref. 892728). We acknowledge that the Department of Design and Construction has no comments to offer at this time.

Please contact me at (808) 954-7121 or by email at GBowker@waimanalohealth.org if you have any questions. You may also contact our consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at (808) 687-8750 or by email at claire@tlcghawaii.com.

Sincerely,

Guy Bowker

Guy Bowker, Facilities Director
Waimānalo Health Center

c: Claire Oshiro, TLCG (claire@tlcghawaii.com)

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

December 22, 2022

LD 0549e

Guy Bowker, Facilities Director
Waimanalo Health Center
41-1347 Kalanianaole Highway *Via email: gbowker@waimanalohealth.org*
Waimanalo, HI 96795

Dear Sirs:

SUBJECT: Draft Environmental Assessment
New Waimanalo Health Center Facility
Waimanalo, Island of Oahu, Hawaii
TMK: (1) 4-1-009:279

Thank you for the opportunity to review and comment on the subject project. The Land Division of the Department of Land and Natural Resources (DLNR) distributed copies of your request to DLNR's various divisions for their review and comment.

Enclosed are comments received from our (a) Engineering Division, (b) Division of Forestry and Wildlife, and (c) Land Division, Oahu District. Should you have any questions, please feel free to contact Barbara Lee via email at *barbara.j.lee@hawaii.gov*. Thank you.

Sincerely,

Russell Tsuji

Russell Y. Tsuji
Land Administrator

Attachments
cc: Central Files
Claire Oshiro, Environmental Planner, The Limtiaco Consulting Group *via email: claire@tlcghawaii.com*

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

November 30, 2022

LD 0549e

MEMORANDUM

FROM: ~~TO:~~ **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
X Div. of Forestry & Wildlife *(via email: rubyrosa.t.terrago@hawaii.gov)*
__Div. of State Parks
X Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
__Office of Conservation & Coastal Lands
X Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*

TO: ~~FROM:~~ Russell Y. Tsuji, Land Administrator
Russell Tsuji
SUBJECT: **Draft Environmental Assessment (DEA)**
New Waimanalo Health Center Facility
LOCATION: Waimanalo, Island of Oahu, Hawaii
TMK: (1) 4-1-009:279
APPLICANT: **The Limtiaco Consulting Group on behalf of the Waimanalo Health Center**

Transmitted for your review and comment is information on the above-referenced subject. The DEA was published on November 23, 2022 by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2022-11-23-TEN.pdf

Please submit any comments by **December 21, 2022,** to *barbara.j.lee@hawaii.gov* at Land Division. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Barbara Lee directly at the above email address. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(✓) Comments are included/attached.

Signed:
Print Name: Carty S. Chang, Chief Engineer
Division: Engineering Division
Date: Dec 19, 2022

Attachments
Cc: Central Files

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/Russell Y. Tsuji
Ref: Draft Environmental Assessment (DEA)
New Waimanalo Health Center Facility
Location: Waimanalo, Island of Oahu, Hawaii
TMK(s): (1) 4-1-009:279
Applicant: The Limtiaco Consulting Group on behalf of the Waimanalo Health 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 Special Flood Hazard Area (high-risk areas). Be advised that 44CFR, Chapter 1, Subchapter B, Part 60 reflects the minimum standards as set forth by the NFIP. Local community flood ordinances may stipulate higher standards that can be more restrictive and would take precedence over the minimum NFIP standards.

The owner of the project property and/or their representative is responsible to research the Flood Hazard Zone designation for the project. Flood zones subject to NFIP requirements are identified on FEMA's Flood Insurance Rate Maps (FIRM). The official FIRMs can be accessed through FEMA's Map Service Center (msc.fema.gov). Our Flood Hazard Assessment Tool (FHAT) (http://gis.hawaiinfip.org/FHAT) could also be used to research flood hazard information.

If there are questions regarding the local flood ordinances, please contact the applicable County NFIP coordinating agency 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) 270-7139.
- Kauai: County of Kauai, Department of Public Works (808) 241-4849.

Signed: _____
CARTY S. CHANG, CHIEF ENGINEER

Date: Dec 19, 2022

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

November 30, 2022

LD 0549e

MEMORANDUM

FROM: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
X Div. of Forestry & Wildlife *(via email: rubyrosa.t.terrago@hawaii.gov)*
__Div. of State Parks
X Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
__Office of Conservation & Coastal Lands
X Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*

TO: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: **Draft Environmental Assessment (DEA)**
New Waimanalo Health Center Facility
LOCATION: Waimanalo, Island of Oahu, Hawaii
TMK: (1) 4-1-009:279
APPLICANT: **The Limtiaco Consulting Group on behalf of the Waimanalo Health Center**

Transmitted for your review and comment is information on the above-referenced subject. The DEA was published on November 23, 2022 by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2022-11-23-TEN.pdf

Please submit any comments by **December 21, 2022,** to *barbara.j.lee@hawaii.gov* at Land Division. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Barbara Lee directly at the above email address. Thank you.

BRIEF COMMENTS:

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(☑) Comments are included/attached.

Signed: *Lainie Berry*
Print Name: LAINIE BERRY, Wildlife Program Mgr.
Division: Division of Forestry and Wildlife
Date: Dec 19, 2022

Attachments
Cc: Central Files

JOSH GREEN, M.D.
GOVERNOR | KE KIA'ĀINA

SYLVIA LUKE
LIEUTENANT GOVERNOR | KA HOPE KIA'ĀINA

STATE OF HAWAI'I | KA MOKU'ĀINA 'O HAWAI'I
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

M. KALEO MANUEL
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

December 19, 2022

MEMORANDUM *Log no. 3931*

TO: RUSSELL Y. TSUJI, Land Administrator
Land Division

FROM: LAINIE BERRY, Wildlife Program Manager
Division of Forestry and Wildlife

SUBJECT: Division of Forestry and Wildlife Comments for the Draft Environmental Assessment (DEA) for the New Waimānalo Health Center Facility on O'ahu

The Department of Land and Natural Resources, Division of Forestry and Wildlife (DOFAW) has received your request for comments for the DEA for the proposed Waimānalo Health Center Facility in Waimānalo, on the island of O'ahu; TMK: (1) 4-1-009:279. The proposed project consists of constructing a new, one-story healthcare facility in a 1.081-acre parcel to replace the existing healthcare facilities on land that is leased from the State of Hawai'i, conducting associated improvements to the side, removing a large monkey pod tree, and reconfiguration of the parking lot to increase patient parking space.

DOFAW concurs with the mitigation measures included in the DEA intended to avoid construction and operational impacts to State-listed species including the Hawaiian Hoary bat or 'Ōpe'ape'a (*Lasiurus cinereus semotus*), and seabirds. For illustrations and guidance related to seabird-friendly light styles that also protect the dark, starry skies of Hawai'i, please visit https://dlnr.hawaii.gov/wildlife/files/2016/03/ DOC439.pdf. We also appreciate the use of native plant species for landscaping. DOFAW provides the following additional comments regarding the potential for the proposed work to affect listed species in the vicinity of the project area.

DOFAW recommends minimizing the movement of plant or soil material between worksites. Soil and plant material may contain detrimental fungal pathogens (e.g., Rapid 'Ōhi'a Death), vertebrate and invertebrate pests (e.g., Little Fire Ants, Coconut Rhinoceros Beetles, etc.), or invasive plant parts (e.g., Miconia, Pampas Grass, etc.) that could harm our native species and ecosystems. We recommend consulting the O'ahu Invasive Species Committee (OISC) at (808) 266-7994 to help plan, design, and construct the project, learn of any high-risk invasive species in the area, and ways to mitigate their spread. All equipment, materials, and personnel should be cleaned of excess soil and debris to minimize the risk of spreading invasive species.

The invasive Coconut Rhinoceros Beetle (CRB) or *Oryctes rhinoceros* is known to occur in the vicinity of the project area. On July 1, 2022, the Hawai'i Department of Agriculture (HDOA) approved Plant Quarantine Interim Rule 22-1. This rule restricts the movement of CRB-host material within or to and from the island of O'ahu, which is defined as the Quarantine Area. Regulated material (host material or host plants) is considered a risk for potential CRB infestation. Host material for the beetle specifically includes a) entire dead trees, b) mulch, compost, trimmings, fruit and vegetative scraps, and c) decaying stumps. CRB host plants include the live palm plants in the following genera: *Washingtonia*, *Livistona*, and *Pritchardia* (all commonly known as fan palms), *Cocos* (coconut palms), *Phoenix* (date palms), and *Roystonea* (royal palms). When such material or these specific plants are moved there is a risk of spreading CRB because they may contain CRB in any life stage. For more information regarding CRB, please visit https://dlnr.hawaii.gov/hisc/info/invasive-species-profiles/coconut-rhinoceros-beetle/.

We appreciate your efforts to work with our office for the conservation of our native species. These comments are general guidelines and should not be considered comprehensive for this site or project. It is the responsibility of the applicant to do their own due diligence to avoid any negative environmental impacts. 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 Paul Radley, Protected Species Habitat Conservation Planning Coordinator at (808) 295-1123 or paul.m.radley@hawaii.gov.

Sincerely,

Lainie Berry

LAINIE BERRY
Wildlife Program Manager

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

November 30, 2022

LD 0549e

MEMORANDUM

TO: **DLNR Agencies:**
__Div. of Aquatic Resources
__Div. of Boating & Ocean Recreation
X Engineering Division *(via email: DLNR.Engr@hawaii.gov)*
X Div. of Forestry & Wildlife *(via email: rubyrosa.t.terrago@hawaii.gov)*
__Div. of State Parks
X Commission on Water Resource Management *(via email: DLNR.CWRM@hawaii.gov)*
__Office of Conservation & Coastal Lands
X Land Division – Oahu District *(via email: barry.w.cheung@hawaii.gov)*

FROM: Russell Y. Tsuji, Land Administrator *Russell Tsuji*
SUBJECT: **Draft Environmental Assessment (DEA)**
New Waimanalo Health Center Facility
LOCATION: Waimanalo, Island of Oahu, Hawaii
TMK: (1) 4-1-009:279
APPLICANT: **The Limtiaco Consulting Group on behalf of the Waimanalo Health Center**

Transmitted for your review and comment is information on the above-referenced subject. The DEA was published on November 23, 2022 by the State Environmental Review Program (formerly the Office of Environmental Quality Control) at the Office of Planning and Sustainable Development in the periodic bulletin, The Environmental Notice, available at the following link:

https://files.hawaii.gov/dbedt/erp/The_Environmental_Notice/2022-11-23-TEN.pdf

Please submit any comments by **December 21, 2022,** to *barbara.j.lee@hawaii.gov* at Land Division. If no response is received by this date, we will assume your agency has no comments. If you have any questions, please contact Barbara Lee directly at the above email address. Thank you.

BRIEF COMMENTS:

As per the lease terms of GL S-6056, any new structure or improvement plans would need to have prior written approval by the Chairperson.

( ) We have no objections.
( ) We have no comments.
( ) We have no additional comments.
(X) Comments are included/~~attached~~. to left

Signed: Darlene Bryant-Takamatsu 8C
Print Name: Darlene Bryant-Takamatsu
Division: Land Division
Date: 12/7/22

Attachments
Cc: Central Files

LD 0549e

RECEIVED
LAND DIVISION
2022 NOV AM 10:26
DEPT. OF LAND
& NATURAL RESOURCES
STATE OF HAWAII

THE LIMTIACO CONSULTING GROUP
CIVIL ENGINEERING AND ENVIRONMENTAL CONSULTANTS

November 23, 2022

Ms. Suzanne D. Case, Chairperson
Department of Land and Natural Resources
Kalanimoku Building
1151 Punchbowl Street
Honolulu, HI 96813

Subject: Draft Environmental Assessment for a New Waimānalo Health Center Facility in Waimānalo, O'ahu, Hawai'i, Tax Map Key (1) 4-1-009:279

Dear Chairperson Case,

This letter follows the email sent on Tuesday, November 22, 2022 that contains the direct link to download the Draft Environmental Assessment (EA) for the New Waimānalo Health Center Facility from the Environmental Review Program's website as of the date of publication, November 23, 2022.

https://files.hawaii.gov/dbedt/erp/Doc_Library/2022-11-23-OA-DEA-New-Waimanalo-Health-Center-Facility.pdf

The comments received from Land Division in June 2022 and our response letter from October 2022 is included with the published Draft EA. We would greatly appreciate comments on the published Draft EA by the comment deadline, which is December 23, 2022.

Please send comments to:

Guy Bowker, Facilities Director
Waimānalo Health Center
41-1347 Kalaniana'ole Highway
Waimānalo, Hawai'i 96795
GBowker@waimanalohealth.org

And please provide a copy to:

Claire Oshiro, Environmental Planner
The Limtiaco Consulting Group
1622 Kanakanui Street
Honolulu, Hawai'i 96817
claire@tlcghawaii.com

Please do not hesitate to contact me at 808-687-8750 or via email to claire@tlcghawaii.com if you have any questions. Thank you.

Best regards,
The Limtiaco Consulting Group, Inc.

Claire Oshiro
Claire Oshiro
Environmental Planner

WAIMĀNALO
HEALTH CENTER

February 21, 2023

SENT VIA EMAIL ONLY: <dlnr.land@hawaii.gov>
Mr. Russell Tsuji, Land Administrator
Department of Land and Natural Resources

Subject: Response to Draft Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, Ko'olaupoko, Island of O'ahu, Hawai'i
TMK: (1) 4-1-009:279, Ref. LD 0549e

Dear Administrator Tsuji:

We appreciate your distribution of the Draft Environmental Assessment (EA) notification to the other divisions of the Department of Land and Natural Resources (DLNR). We acknowledge the comments that were provided by the divisions and our responses are below.

Engineering Division (signed December 19, 2022, Ref. LD 0549e)

The rules and regulations of the National Flood Insurance Program are in effect for development within Special Flood Hazard Areas; however, our project site is in Zone X.

Division of Forestry and Wildlife (signed December 19, 2022, Log no. 3931)

The Division of Forestry and Wildlife (DOFAW) concurs with the measures included in the Draft EA for avoiding impacts to State-listed species. We will consider additional recommendations provided by DOFAW: (1) guidance to protect the dark, starry skies of Hawaii; (2) the use of native plant species for landscaping; (3) measures to minimize the movement of plant or soil material between worksites due to concerns about detrimental fungal pathogens, vertebrate and invertebrate pests, or invasive plant parts.

Land Division (signed December 7, 2022, Ref. LD 0549e)

We understand that any new structure or improvement plans would need to have prior written approval by the DLNR Chairperson as per the lease terms of GL S-6056.

Please contact me at (808) 954-7121 or by email at GBowker@waimanalohealth.org if you have any questions. You may also contact our consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at (808) 687-8750 or by email at claire@tlcghawaii.com.

Sincerely,

Guy Bowker

Guy Bowker, Facilities Director
Waimānalo Health Center

c: Barbara Lee, DLNR (barbara.j.lee@hawaii.gov)
Claire Oshiro, TLCG (claire@tlcghawaii.com)

FILE

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.honolulu.gov/dpp

RICK BLANGIARDI
MAYOR

DAWN TAKEUCHI APUNA
DIRECTOR DESIGNATE

JIRO A. SUMADA
DEPUTY DIRECTOR

December 22, 2022 2022/ELOG-2451(GS)

Mr. Guy Bowker, Facilities Director
Waimanalo Health Center
41-1347 Kalanianaole Highway
Waimanalo, Hawaii 96795

Ms. Claire Oshiro, Environmental Planner
The Limtiaco Consulting Group
1622 Kanakanui Street
Honolulu, Hawaii 96817

Dear Mr. Bowker and Ms. Oshiro:

SUBJECT: Comments on a Draft Environmental Assessment (DEA)
Waimanalo Health Center
41-1347 Kalanianaole Highway – Waimanalo
Tax Map Key 4-1-009: 279 (Parcel 279)

This letter responds to your request (received on November 28, 2022), for comments on the DEA for the proposed new, 8,000-square-foot one-story health care facility on Parcel 279 (Proposed Action), which will replace the existing facilities. Based on our review of the DEA, the Department of Planning and Permitting (DPP) has the following comments:

1. We note that the administrative office building at the rear of the lot encroaches into the required rear yard. It appears the Applicant applied for a zoning waiver to retain the structure, however according to our records, the waiver was never approved. Please be advised, the rear structure still requires a zoning waiver to be retained.

   Please assess the Proposed Action's compliance with the development standards of the R-5 Residential District, pursuant to Chapter 21, the Land Use Ordinance (LUO), Revised Ordinances of Honolulu, Section 21-3.70-1(b) and as enumerated on Table 21-3.2. If further encroachments into the required yards or

leniency from the other R-5 Residential District development standards are necessary they should be included in the application for the zoning waiver. The Application instructions for a zoning waiver may be found at:

https://www.honolulu.gov/dpp/permitting/zoning-permits.html

2. The DEA does not include any discussion, assessment, or analysis of how the Proposed Action is consistent, inconsistent, or implements each of the relevant statements from the Oahu General Plan or the Koolaupoko Sustainable Community Plan. The Final Environmental Assessment should include a discussion of how the Proposed Action conforms and supports these statements in the respective plans.

3. The Applicant should continue to work with the State Department of Transportation regarding any impacts to Kalanianaole Highway.

The DPP has no further comment at this time. Should you have any questions, please contact Geoffry Spangler, of our staff, at (808) 768-8022 or via email at geoffry.spangler@honolulu.gov.

Very truly yours,

for Dawn Takeuchi Apuna
Director Designate

WAIMĀNALO
HEALTH CENTER

February 21, 2023

SENT VIA EMAIL ONLY: <dpp@honolulu.gov>
Ms. Dawn Apuna, Director Designate
City and County of Honolulu
Department of Planning and Permitting

Subject: Response to Draft Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, Koʻolaupoko, Island of Oʻahu, Hawaiʻi
TMK: (1) 4-1-009:279, Ref. 2022/ELOG-2451

Dear Director Designate Apuna:

Thank you for the comments in the letter dated December 22, 2022 and signed on behalf of the Department of Planning and Permitting (DPP) Director Designate Apuna that were sent via email from Mr. Spangler. Our itemized responses are below.

1. We will strive to resolve the zoning waiver that was submitted to DPP but not approved.
2. The discussions pertaining to the Oahu General Plan and Koʻolaupoko Sustainable Communities Plan will be improved in the Final EA.
3. Our project does not include improvements that would affect Kalanianaole Highway. We will work the with State Department of Transportation regarding impacts if the project changes to include roadway improvements.

Please contact me at (808) 954-7121 or by email at GBowker@waimanalohealth.org if you have any questions. You may also contact our consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at (808) 687-8750 or by email at claire@tlcghawaii.com.

Sincerely,

Guy Bowker

Guy Bowker, Facilities Director
Waimānalo Health Center

c: Geoffry Spangler, DPP (geoffry.spangler@honolulu.gov)
Claire Oshiro, TLCG (claire@tlcghawaii.com)

From: Claire Oshiro
To: Hauck CTR Emily C; gbowker@waimanalohealth.org
Cc: Ostrem CIV Meagan K; Farmer CIV Harry W JR
Subject: THANKS RE: Draft Environmental Assessment (EA) for the New Waimānalo Health Center Facility
Date: Friday, December 23, 2022 9:09:00 AM

Hi Emily: Thank you for your email that Marine Corps Base Hawaii has no comments.

I am copying Guy Bowker of Waimanalo Health Center so he can add the email to his record.

This email will suffice as a record of our correspondence and will be included in the Final EA in lieu of an official letter.

Thanks. --Claire

-----Original Message-----
From: Hauck CTR Emily C <emily.hauck.ctr@usmc.mil>
Sent: Friday, December 23, 2022 8:58 AM
To: Claire Oshiro <claire@tlcghawaii.com>
Cc: Ostrem CIV Meagan K <meagan.ostrem@usmc.mil>; Farmer CIV Harry W JR <harry.w.farmer@usmc.mil>
Subject: RE: Draft Environmental Assessment (EA) for the New Waimānalo Health Center Facility

Good morning Claire,

Per discussions with our staff, we see no impact to our training or operations and therefore have no comments to provide. We appreciate the opportunity to review the EA and are excited to see the project progress in direct support of the Waimanalo community. Please let me know if you need an official letter drafted and signed stating the above.

Hope you and yours have a lovely holiday season!

-----Original Message-----
From: Claire Oshiro <claire@tlcghawaii.com>
Sent: Monday, November 28, 2022 8:25 AM
To: Hauck CTR Emily C <emily.hauck.ctr@usmc.mil>
Cc: Ostrem CIV Meagan K <meagan.ostrem@usmc.mil>; Farmer CIV Harry W JR <harry.w.farmer@usmc.mil>
Subject: [Non-DoD Source] Draft Environmental Assessment (EA) for the New Waimānalo Health Center Facility

Aloha:

This email and the attached letter provide a link to the Draft Environmental Assessment (EA) for the New Waimānalo Health Center Facility, which is available from the Environmental Review Program's website. We would greatly appreciate comments on the published Draft EA by the comment deadline, which is December 23, 2022.

https://files.hawaii.gov/dbedt/erp/Doc_Library/2022-11-23-OA-DEA-New-Waimanalo-Health-Center-Facility.pdf

The Draft EA is also available for review at the Hawai'i State Library and Waimānalo Public and School Library. Please do not hesitate to contact me at 808-687-8750/808-596-7790 or via a reply to this email if you have any questions. Thank you.

Claire Oshiro
Direct: (808) 687-8750
Office: (808) 596-7790

WAIMĀNALO
HEALTH CENTER

February 21, 2023

SENT VIA EMAIL ONLY: <emily.hauck.ctr@usmc.mil>
Ms. Emily Hauck, Community Plans Liaison Officer CTR
Marine Corps Base Hawaii

Subject: Response to Draft Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, Koʻolaupoko, Island of Oʻahu, Hawaiʻi
TMK: (1) 4-1-009:279

Dear Ms. Hauck:

Thank you for your email on December 23, 2022. We acknowledge that Marine Corps Base Hawaii (MBCH) anticipates no impact to its training or operations and therefore has no comments to provide. We appreciate the statement about seeing our project progress in direct support of the Waimānalo community.

Please contact me at (808) 954-7121 or by email at GBowker@waimanalohealth.org if you have any questions. You may also contact our consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at (808) 687-8750 or by email at claire@tlcghawaii.com.

Sincerely,

Guy Bowker

Guy Bowker, Facilities Director
Waimānalo Health Center

c: Meagan Ostrem CIV, MCBH (meagan.ostrem@usmc.mil)
Harry Farmer CIV, MCBH (harry.w.farmer@usmc.mil)
Claire Oshiro, TLCG (claire@tlcghawaii.com)

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
711 KAPIOLANI BOULEVARD, SUITE 1600
HONOLULU, HAWAII 96813
Phone: (808) 768-8305 • Fax: (808) 768-4730 • Internet: www.honolulu.gov

RICK BLANGIARDI
MAYOR

J. ROGER MORTON
DIRECTOR

JON Y. NOUCHI
DEPUTY DIRECTOR

11/22-883018R2

December 29, 2022

Mr. Barry Cheung, Project Manager
State of Hawaii
Department of Land and Natural Resources
Post Office Box 62
Honolulu, Hawaii 96809

Dear Mr. Cheung:

SUBJECT: New Waimanalo Health Center Facility Draft Environmental Assessment (Anticipated Finding of No Significant Impact)

Thank you for the opportunity to provide written comments regarding the New Waimanalo Health Center Facility Draft Environmental Assessment (DEA) (Anticipated Finding of No Significant Impact). We have the following comment.

1. DEA, Section 3.10, Page 3-15. Per the Traffic Impact Analysis Report's (TIAR) recommendation, the applicant shall assist the Department of Transportation Services in monitoring intersection operations and with implementing necessary improvements.

Should you have any questions, please contact Greg Tsugawa, of my staff, at (808) 768-6683.

Very truly yours,

J. Roger Morton
Director

cc: ✓ Claire Oshiro, Project Manager
The Limtiaco Consulting Group

WAIMĀNALO
HEALTH CENTER

February 21, 2023

Mr. J. Roger Morton, Director
City and County of Honolulu
Department of Transportation Services
711 Kapiolani Boulevard, Suite 1600
Honolulu, Hawaii 96813

Subject: Response to Draft Environmental Assessment for the New Waimānalo Health Center Facility in Waimānalo, Koʻolaupoko, Island of Oʻahu, Hawaiʻi
TMK: (1) 4-1-009:279, Ref. 11/22-883018R2

Dear Director Morton:

Thank you for the letter dated December 29, 2022 (Ref. 11/22-883018R2). We acknowledge the statement about assisting the Department of Transportation Services (DTS) in monitoring intersection operations and with implementing necessary improvements. The project site is along Kalanianaole Highway, which is under State jurisdiction, and we are not proposing improvements that would affect the roadway. We will inform DTS if the project changes to include roadway improvements.

Please contact me at (808) 954-7121 or by email at GBowker@waimanalohealth.org if you have any questions. You may also contact our consultant, Claire Oshiro of The Limtiaco Consulting Group (TLCG) at (808) 687-8750 or by email at claire@tlcghawaii.com.

Sincerely,

Guy Bowker

Guy Bowker, Facilities Director
Waimānalo Health Center

c: Claire Oshiro, TLCG (claire@tlcghawaii.com)