

**FINAL ENVIRONMENTAL ASSESSMENT
PROPOSED EWA INDUSTRIAL PARK
1020 GEIGER ROAD IN EWA, HAWAII
TAX MAP KEY: 9-1-069: 003**

**EWA INDUSTRIAL PARK, LLC
99-880 IWAENA STREET
AIEA, HAWAII 96701**

APPLICANT

**KUSAO & KURAHASHI, INC.
PLANNING AND ZONING CONSULTANTS
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822**

AGENT

JULY 2008

**FINAL ENVIRONMENTAL ASSESSMENT
PROPOSED EWA INDUSTRIAL PARK
1020 GEIGER ROAD IN EWA, HAWAII
TAX MAP KEY: 9-1-069: 003**

**EWA INDUSTRIAL PARK, LLC
99-880 IWAENA STREET
AIEA, HAWAII 96701**

APPLICANT

**KUSAO & KURAHASHI, INC.
PLANNING AND ZONING CONSULTANTS
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822**

AGENT

JULY 2008

TABLE OF CONTENTS

	PAGE
I. INTRODUCTION	1
II. GENERAL INFORMATION	3
A. Developer/Applicant	3
B. Recorded Fee Owner	3
C. Accepting Agency	3
D. Tax Map Key	3
E. Agent	4
F. Location	4
G. Lot Area	4
H. Zoning	4
I. State Land Use	4
J. Ewa Development	4
K. Special District	4
L. Existing Use	4
M. List of Agencies	4
III. DESCRIPTION OF PROPOSED ACTION	9
A. GENERAL DESCRIPTION	9
1. Existing Conditions	9
2. Proposed Development	10
3. Location	13
4. Surrounding Area	13
5. Conformance with the State and City Planning Documents	14
B. TECHNICAL CHARACTERISTICS	31
1. Use Characteristics	31
2. Physical Characteristics	32
3. Construction Characteristics	34

IV.	IMPACTS	36
A.	DEMOGRAPHIC IMPACTS	36
	1. Residential Population	36
	2. Visitor Population	36
	3. Character or Culture of the Neighborhood	36
	4. Displacement	38
B.	ECONOMIC IMPACTS	39
	1. Economic Growth	39
	2. Employment	39
	3. Government Revenues/Taxes	40
C.	HOUSING IMPACTS	41
	1. Increase Supply	41
	2. Affordable Units	41
D.	PUBLIC SERVICES	41
	1. Access	41
	2. Transportation	42
	3. Water	69
	4. Wastewater	71
	5. Drainage	74
	6. Flood Plain Management	77
	7. Solid Waste Disposal	77
	8. Schools	77
	9. Parks	77
	10. Police	78
	11. Fire	78
	12. Utilities	79
E.	ENVIRONMENTAL IMPACTS	79
	1. Historical	79
	2. Cultural	81
	3. Archaeological Resources	85
	4. Natural Resources	89
F.	TOPOGRAPHY	95
G.	SOILS	96
H.	NOISE	100
I.	AIR QUALITY	103
J.	VISUAL IMPACT	105
K.	HAZARDS	106

V.	MAJOR IMPACTS AND ALTERNATIVES CONSIDERED	107
A.	NO ACTION	107
B.	PROPOSED INDUSTRIAL PARK, WITH I-2 INTENSIVE INDUSTRIAL DISTRICT ZONING	107
C.	PROPOSED INDUSTRIAL PARK, WITH I-1 LIMITED INDUSTRIAL DISTRICT ZONING	110
D.	PROPOSED INDUSTRIAL PARK, WITH IMX-1 INDUSTRIAL-COMMERCIAL MIXED USE DISTRICT ZONING	113
VI.	MITIGATION MEASURES	115
VII.	GOVERNMENT PERMITS AND APPROVALS REQUIRED	116
VIII.	SIGNIFICANCE CRITERIA	117
IX.	COMMUNITY MEETINGS AND CORRESPONDENCE	127
X.	LAND USE ORDINANCE	132
XI.	RECOMMENDATION	134

EXHIBITS

		PAGE
EXHIBIT 1	Location and Zoning Map	5
EXHIBIT 2	State Land Use Boundary Interpretation	6
EXHIBIT 3	Development Plan Urban Land Use Map	7
EXHIBIT 4	Ewa Public Infrastructure Map	8

APPENDICES

APPENDIX I	Conceptual Plans
APPENDIX II	Traffic Impact Assessment Report
APPENDIX III	State Land Use Boundary
APPENDIX IV	Agency Comment Letters
APPENDIX V	Air Quality Report
APPENDIX VI	Environmental Noise Assessment
APPENDIX VII	Cultural Impact Assessment Report
APPENDIX VIII	Job Creation Assessment
APPENDIX IX	Drainage
APPENDIX X	Flood Insurance Rating Map
APPENDIX XI	Archaeological Assessment of the Ewa Industrial Park
APPENDIX XII	Botanical Resources Assessment Study
APPENDIX XIII	Avifaunal and Feral Mammal Field Survey
APPENDIX XIV	Community Meetings and Correspondence
APPENDIX XV	Aerial Photograph

**FINAL ENVIRONMENTAL ASSESSMENT
FOR THE PROPOSED EWA INDUSTRIAL PARK**

TAX MAP KEY: 9-1-69: 03

I. INTRODUCTION

The applicant, Ewa Industrial Park, LLC. proposes to develop the property located at 1020 Geiger Road in Ewa, on the Island of Oahu into a light industrial park site known as the Ewa Industrial Park. The property consisting of one 48.395-acre parcel is planned for development in two phases. Phase I will include 23.3 acres of the overall site and Phase II will include the remaining 25.095 acres. The property is bounded by the Honouliuli Sewage Treatment Plant to the south and west and Geiger Road to the south and portions of the OR&L Railway right-of-way to the north. Coral Creek Golf Course is located to the east and the Oahu Railway Museum to the west.

This 48.395 acre property currently houses a number of farm buildings and outbuildings including two tenants' houses and a number of metal shipping containers. It is also used for storage of farm equipment such as trucks and tractors and for keeping livestock such as goats and chickens with cleared areas for livestock pastures and paddocks. Kiawe scrub with weedy plant species dominate the property as agricultural uses were phased out. The project area is entirely bounded by a chain-link fence.

The project is planned for development with light industrial uses to include light manufacturing, warehousing, distribution, possibly a self-storage building, and masonry, plumbing, electrical, glazing, painting,

Final Environmental Assessment - Ewa Industrial Park

flooring and roofing trades. The project is also expected to include a small amount of retail space such as a convenience store. The proposed industrial development will provide employment and provide Ewa and nearby residents an opportunity to live, work and play in the Ewa area of Oahu. This employment is expected to reduce the need for residents in the surrounding area and along the travel corridor into town to travel in the peak hour direction towards downtown Honolulu to work.

The Ewa Development Plan Urban Land Use Map is a conceptual plan that provides a vision on land uses. The vision for this general area is for industrial use, but is not site specific. The proposed development is consistent with the vision of the Ewa Development Plan. It is also consistent with the State Land Use designation of "Urban" that encompasses Phase I of the proposed development. Phase II of the proposed development has a State Land Use designation of "Agricultural" and will require a State Land Use Boundary Amendment.

As agent for the application we are preparing this Final Environmental Assessment Report to cover Phases I and II of the proposed 48.395 acre Ewa Industrial Park pursuant to and in accordance with the requirements of Chapter 343 HRS and Chapter 200 of Title 11, Administrative Rules - Environmental Impact Statement Rules. The action that triggers this assessment is the proposed zone change from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District for the overall development.

Final Environmental Assessment - Ewa Industrial Park

Phase I consisting of 23.3 acres will require a Zone Change Application from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District. Phase II consisting of 25.095 acres will require a State Land Use Boundary Amendment from Agricultural to Urban, followed by a Zone Change Application from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District.

The proposed development will require either subdivision of the property or an industrial lot development under a CPR (condominium property regime for industrial lots), limited grading for building pads and foundations and building permits for construction.

II. GENERAL INFORMATION

- A. Developer/Applicant : Ewa Industrial Park, LLC
99-880 Iwaena Street
Aiea, Oahu, Hawaii 96701
(808) 487-1445

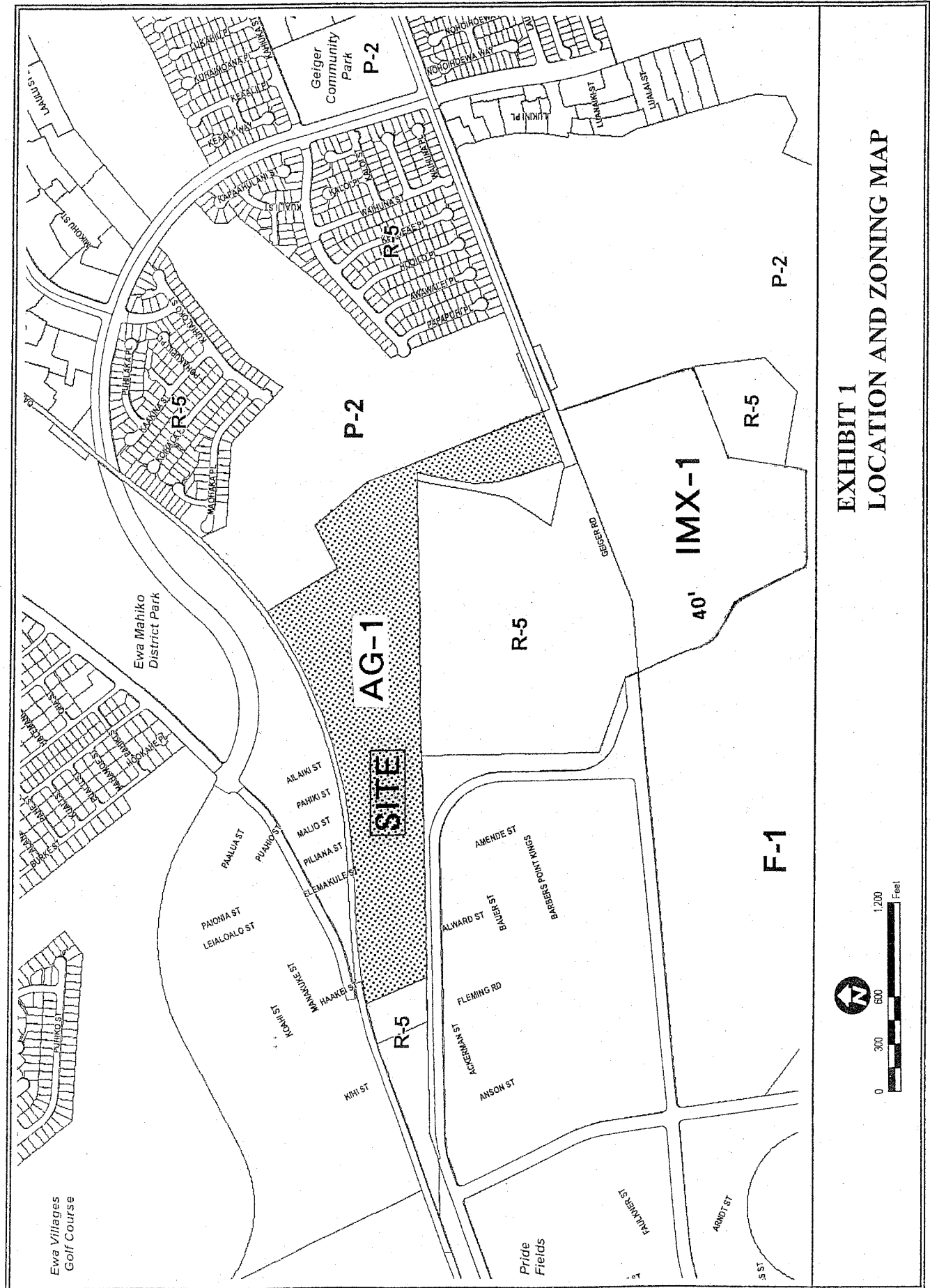
- B. Recorded Fee Owner : Ewa Industrial Park, LLC
99-880 Iwaena Street
Aiea, Hawaii 96701

- C. Accepting Agency : Department of Planning & Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

- D. Tax Map Key : 9-1-069: 003

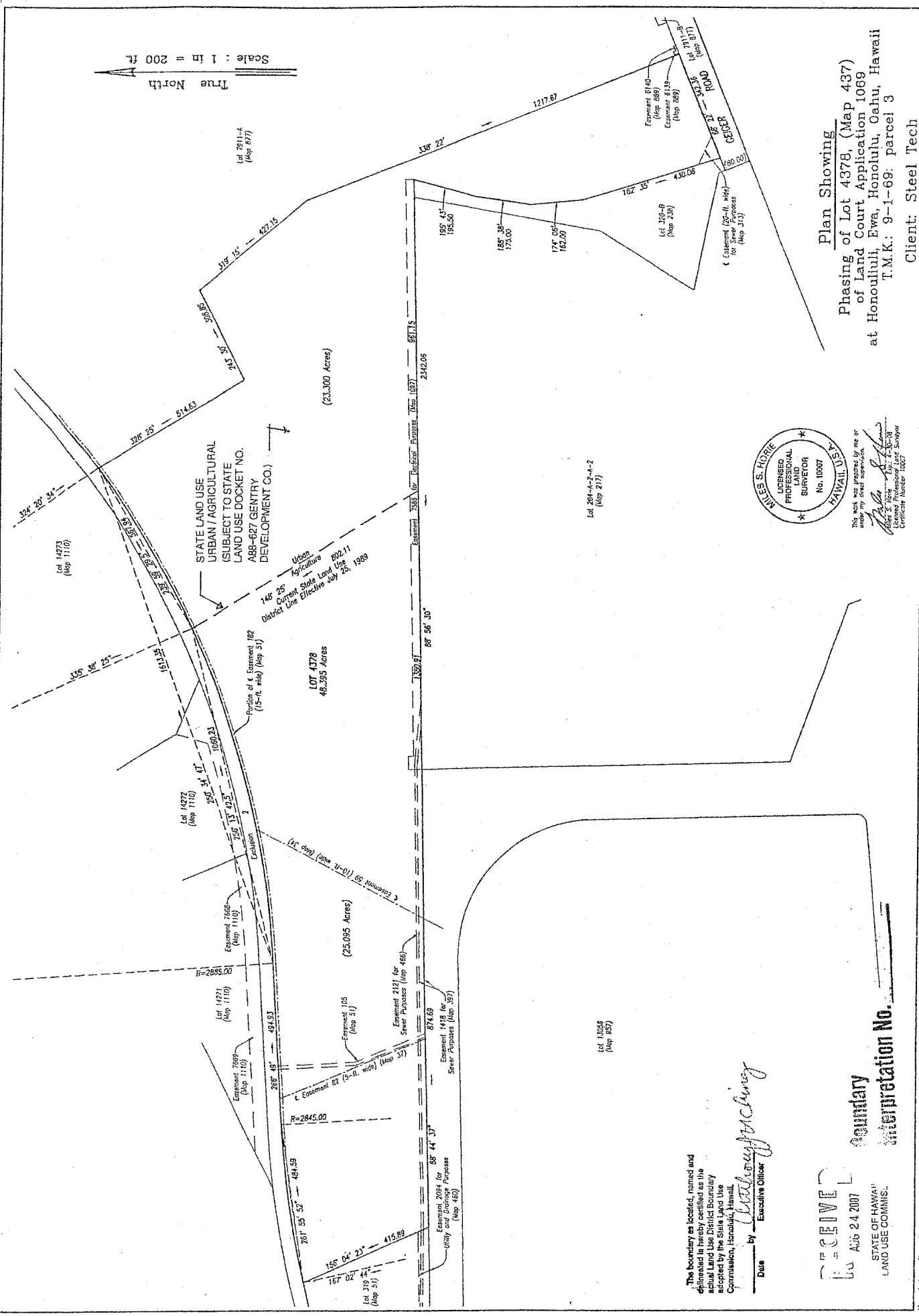
Final Environmental Assessment - Ewa Industrial Park

- E. Agent : Kusao & Kurahashi, Inc.
Planning and Zoning Consultants
2752 Woodlawn Drive, Suite 5-202
Honolulu, Hawaii 96822
(808) 988-2231
- F. Location : 1020 Geiger Road
Ewa, Oahu, Hawaii
- G. Lot Area : 48.395 Acres (Phase I = 23.3 acres
Phase II = 25.095 acres)
- H. Zoning : AG-1 Restricted Agricultural District
(Exhibit 1)
- I. State Land Use : Urban District for 23.3 acres
Agricultural District for 25.095 acres
(Exhibit 2)
- J. Ewa Development
- Plan Land Use Map : Industrial (Exhibit 3)
- Public Infrastructure
Map (PIM) : PIM Symbol #013 depicts future
expansion of the Honouliuli WWTP
(Exhibit 4)
- K. Special District : Not in a Special District
- L. Existing Use : Mostly vacant land
- M. List of Agencies
Consulted : **City**
Council Member Todd Apo

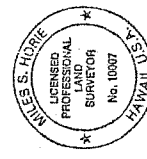


**EXHIBIT 1
LOCATION AND ZONING MAP**

True North
Scale: 1 in = 200 ft.



Plan Showing
 Phasing of Lot 4378, (Map 437)
 of Land Court Application 1069
 at Honolulu, Ewa, Honolulu, Oahu, Hawaii
 T.M.K.: 9-1-69: parcel 3
 Client: Steel Tech



This map was prepared by me or under my direct supervision.
Kees H. Hori
 Licensed Professional Land Surveyor
 Certificate Number 10007

May 17, 2007 960, Halekua Street
 August 22, 2007

EXHIBIT 2

ENGINEERS SURVEYORS HAWAII, INC.
 CIVIL ENGINEERS ~ LAND SURVEYORS ~ CONSTRUCTION MANAGERS

The boundary as located, named and delineated in hereby certified as the actual Land Use District Boundary accepted by the State Land Use Commission, Honolulu, Hawaii.

By *Walter J. ...*
 Executive Officer

RECEIVED
 JUN 24 2007
 STATE OF HAWAII
 LAND USE COMMISSION
 Interpretation No. _____

EWA DEVELOPMENT PLAN

Urban Land Use Map

- Low and Medium Density Residential
- High Density Residential
- Community Commercial Center
- City of Kapolei (High Density Residential and Commercial)
- Resort/Recreation Area
- Industrial
- Military
- Public Institution
- Agricultural and Preservation
- Parks and Golf Courses
- Transit Node (High Density Residential and Commercial)
- Urban Growth Boundary

EXISTING FUTURE

- Civic Center
- Electric Power Plant
- Wastewater T.P.
- Intermediate School
- High School
- U.H. West Oahu
- Hospital
- Small Boat Marina
- Commercial Harbor
- Airfield
- Highways, Arterial & Major Streets
- Historic Railway



Planning Department
City & County of Honolulu
March 1996

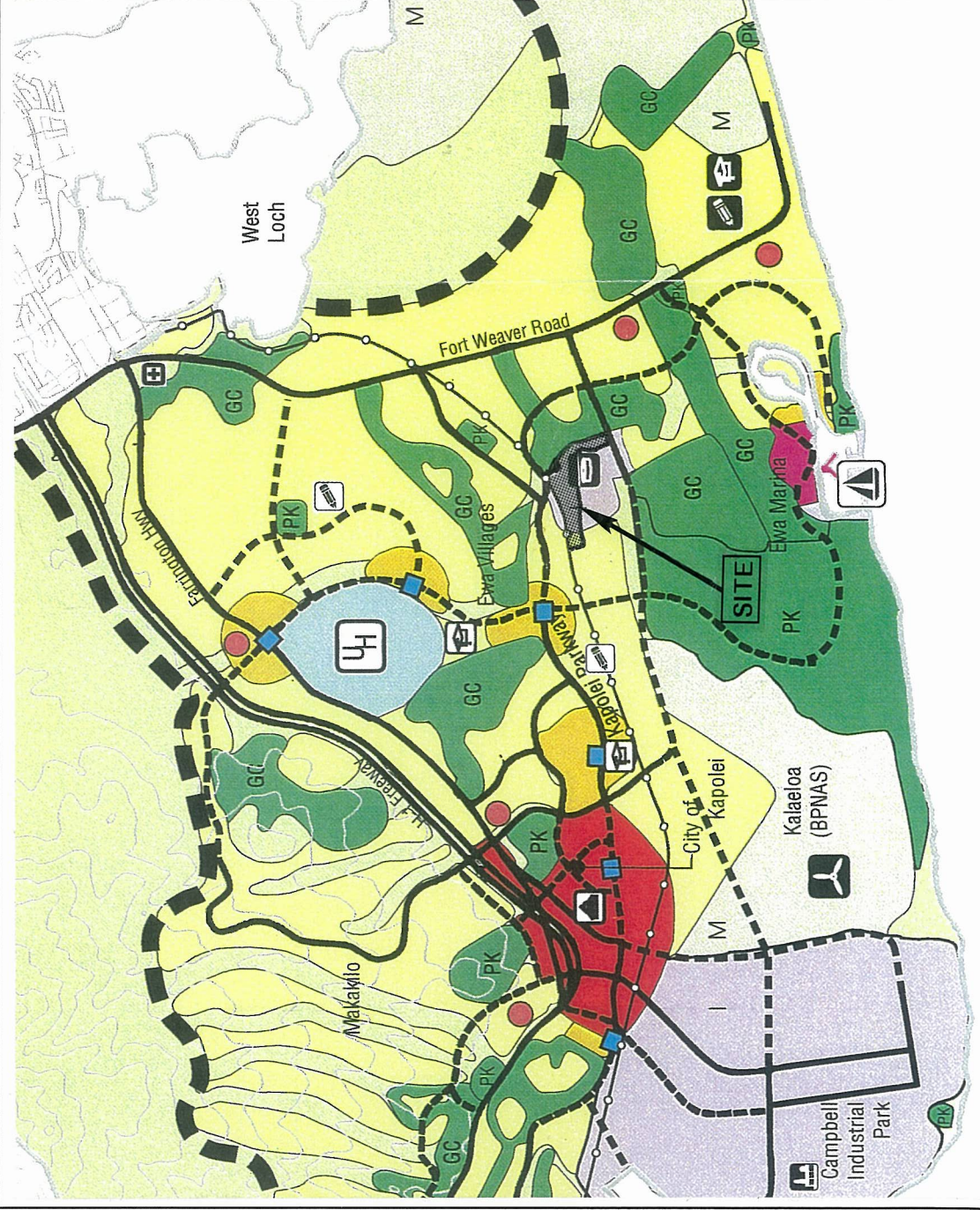


EXHIBIT 2

**PUBLIC INFRASTRUCTURE MAP
EWA**



LEGEND

- PUBLIC FACILITY FOR COMMENCEMENT OF CONSTRUCTION AND/OR CONSTRUCTION
- DRAINAGE SYSTEM
- TRANSPORTATION SYSTEMS
- ARTERIAL ROADWAY
- TRANSIT CORRIDOR
- PUBLIC FACILITY
- CONCEPTUAL LOCATION
- MODIFY EXISTING FACILITY

Example: 024 = SYMBOL NO.

- 014 - CORPORATION YARD
- 015 - DRAINAGE WAY (OPEN CHANNEL)
- 016 - ELECTRICAL TRANSMISSION
- 017 - HIGHWAY
- 018 - HIGHWAY
- 019 - HIGHWAY
- 020 - HIGHWAY
- 021 - HIGHWAY
- 022 - HIGHWAY
- 023 - HIGHWAY
- 024 - HIGHWAY
- 025 - HIGHWAY
- 026 - HIGHWAY
- 027 - HIGHWAY
- 028 - HIGHWAY
- 029 - HIGHWAY
- 030 - HIGHWAY
- 031 - HIGHWAY
- 032 - HIGHWAY
- 033 - HIGHWAY
- 034 - HIGHWAY
- 035 - HIGHWAY
- 036 - HIGHWAY
- 037 - HIGHWAY
- 038 - HIGHWAY
- 039 - HIGHWAY
- 040 - HIGHWAY
- 041 - HIGHWAY
- 042 - HIGHWAY
- 043 - HIGHWAY
- 044 - HIGHWAY
- 045 - HIGHWAY
- 046 - HIGHWAY
- 047 - HIGHWAY
- 048 - HIGHWAY
- 049 - HIGHWAY
- 050 - HIGHWAY
- 051 - HIGHWAY
- 052 - HIGHWAY
- 053 - HIGHWAY
- 054 - HIGHWAY
- 055 - HIGHWAY
- 056 - HIGHWAY
- 057 - HIGHWAY
- 058 - HIGHWAY
- 059 - HIGHWAY
- 060 - HIGHWAY
- 061 - HIGHWAY
- 062 - HIGHWAY
- 063 - HIGHWAY
- 064 - HIGHWAY
- 065 - HIGHWAY
- 066 - HIGHWAY
- 067 - HIGHWAY
- 068 - HIGHWAY
- 069 - HIGHWAY
- 070 - HIGHWAY
- 071 - HIGHWAY
- 072 - HIGHWAY
- 073 - HIGHWAY
- 074 - HIGHWAY
- 075 - HIGHWAY
- 076 - HIGHWAY
- 077 - HIGHWAY
- 078 - HIGHWAY
- 079 - HIGHWAY
- 080 - HIGHWAY
- 081 - HIGHWAY
- 082 - HIGHWAY
- 083 - HIGHWAY
- 084 - HIGHWAY
- 085 - HIGHWAY
- 086 - HIGHWAY
- 087 - HIGHWAY
- 088 - HIGHWAY
- 089 - HIGHWAY
- 090 - HIGHWAY
- 091 - HIGHWAY
- 092 - HIGHWAY
- 093 - HIGHWAY
- 094 - HIGHWAY
- 095 - HIGHWAY
- 096 - HIGHWAY
- 097 - HIGHWAY
- 098 - HIGHWAY
- 099 - HIGHWAY
- 100 - HIGHWAY



THE DATA REPRESENTED ON THIS MAP IS NOT INTENDED TO REPLACE SITE SURVEY.
MAP PRODUCED BY CITY & COUNTY OF HONOLULU
1115 KALANIANA'OHU AVENUE, 15TH FLOOR, HONOLULU, HI 96813
Copyright City & County of Honolulu. All Rights Reserved 2003
Date Prepared: June 18, 2003

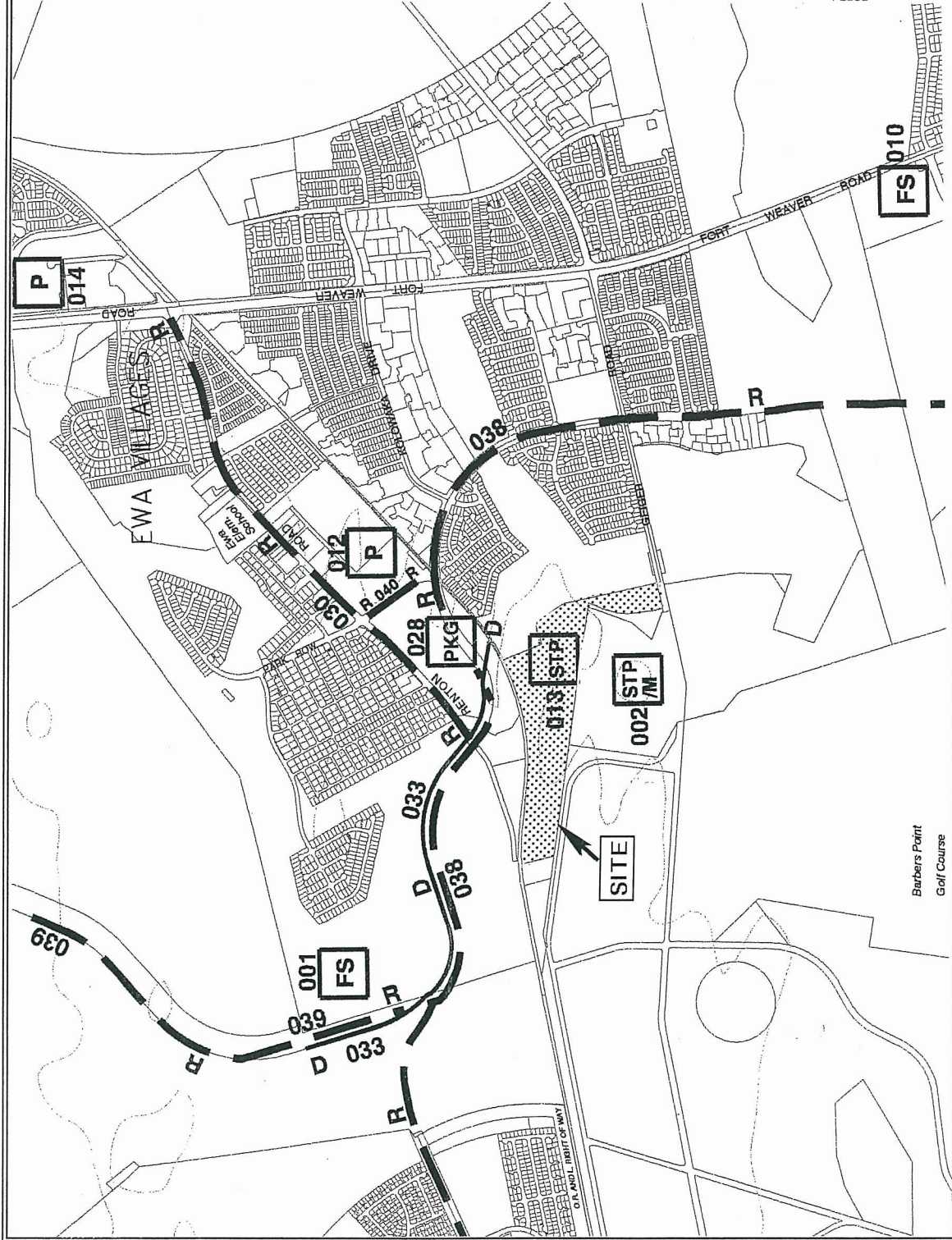


EXHIBIT 4

Barbers Point
Golf Course

**PUBLIC INFRASTRUCTURE MAP
EWA**



LEGEND

- PUBLIC FACILITY PROGRAMMED FOR CONSTRUCTION AND/OR ACQUISITION**
- DRAINAGE SYSTEM: D
 - TRANSPORTATION SYSTEMS: R
 - ARTERIAL ROADWAY: R
 - TRANSIT CORRIDOR: TC
 - PUBLIC FACILITY: STP, M, PKG, FS
 - CONCEPTUAL LOCATION: [Symbol]
 - MODIFY EXISTING FACILITY: [Symbol]

Example: 029 = SYMBOL NO.

- 001 - COMMERCIAL WAREHOUSE
- 002 - STP
- 003 - STP
- 004 - STP
- 005 - STP
- 006 - STP
- 007 - STP
- 008 - STP
- 009 - STP
- 010 - STP
- 011 - STP
- 012 - STP
- 013 - STP
- 014 - STP
- 015 - STP
- 016 - STP
- 017 - STP
- 018 - STP
- 019 - STP
- 020 - STP
- 021 - STP
- 022 - STP
- 023 - STP
- 024 - STP
- 025 - STP
- 026 - STP
- 027 - STP
- 028 - STP
- 029 - STP
- 030 - STP
- 031 - STP
- 032 - STP
- 033 - STP
- 034 - STP
- 035 - STP
- 036 - STP
- 037 - STP
- 038 - STP
- 039 - STP
- 040 - STP
- 041 - STP
- 042 - STP
- 043 - STP
- 044 - STP
- 045 - STP
- 046 - STP
- 047 - STP
- 048 - STP
- 049 - STP
- 050 - STP
- 051 - STP
- 052 - STP
- 053 - STP
- 054 - STP
- 055 - STP
- 056 - STP
- 057 - STP
- 058 - STP
- 059 - STP
- 060 - STP
- 061 - STP
- 062 - STP
- 063 - STP
- 064 - STP
- 065 - STP
- 066 - STP
- 067 - STP
- 068 - STP
- 069 - STP
- 070 - STP
- 071 - STP
- 072 - STP
- 073 - STP
- 074 - STP
- 075 - STP
- 076 - STP
- 077 - STP
- 078 - STP
- 079 - STP
- 080 - STP
- 081 - STP
- 082 - STP
- 083 - STP
- 084 - STP
- 085 - STP
- 086 - STP
- 087 - STP
- 088 - STP
- 089 - STP
- 090 - STP
- 091 - STP
- 092 - STP
- 093 - STP
- 094 - STP
- 095 - STP
- 096 - STP
- 097 - STP
- 098 - STP
- 099 - STP
- 100 - STP

THIS MAP WAS PREPARED BY THE CITY OF EWA FLOORING DIVISION FOR THE CITY OF EWA. IT IS INTENDED TO REPLACE THE SITE SURVEY. THIS MAP WAS PREPARED BY THE CITY OF EWA FLOORING DIVISION FOR THE CITY OF EWA. IT IS INTENDED TO REPLACE THE SITE SURVEY. THIS MAP WAS PREPARED BY THE CITY OF EWA FLOORING DIVISION FOR THE CITY OF EWA. IT IS INTENDED TO REPLACE THE SITE SURVEY.

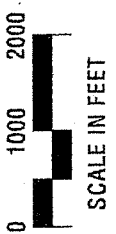
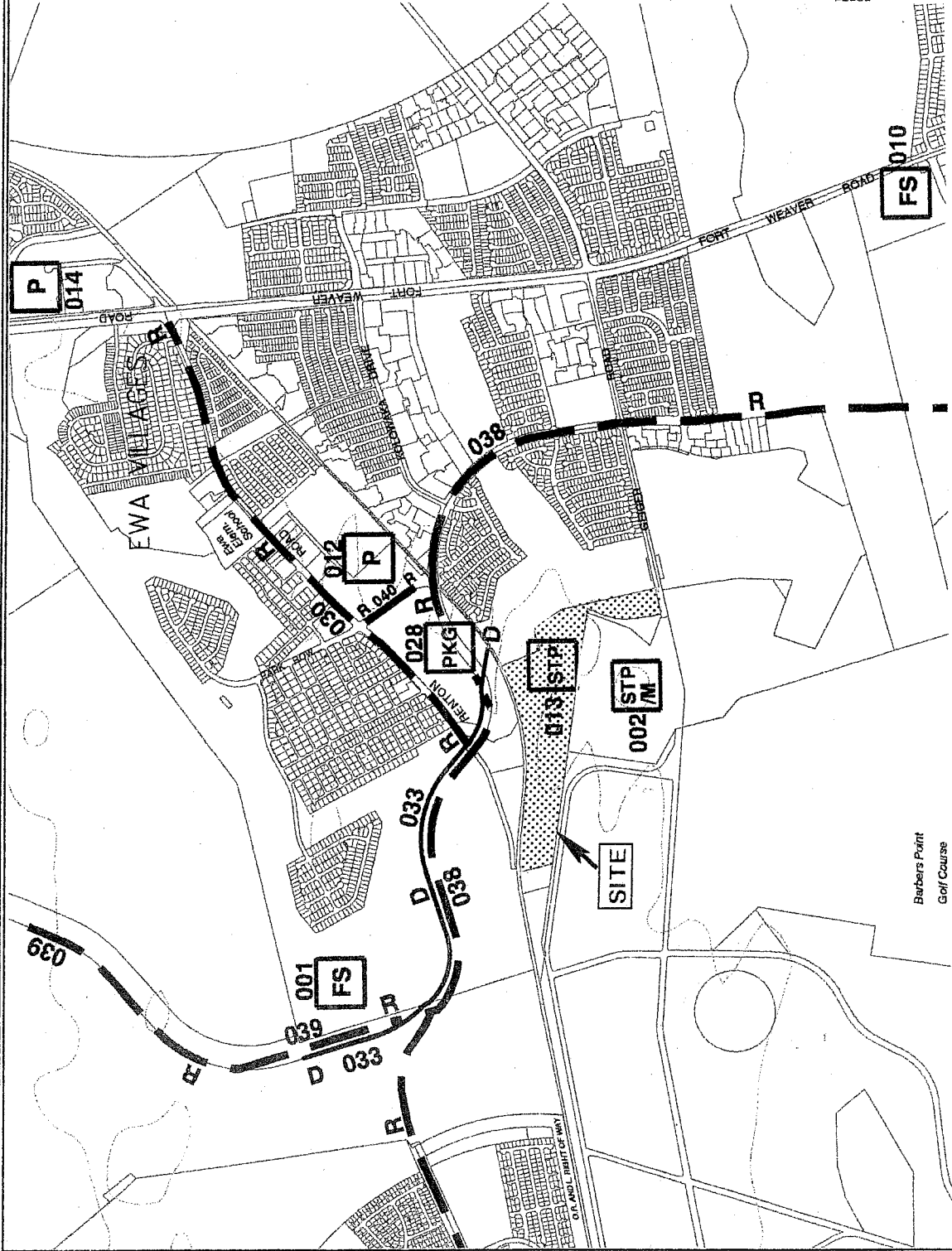


EXHIBIT 4

Final Environmental Assessment - Ewa Industrial Park

Council Member Romy Cachola
Council Member Charles D'jou
Board of Water Supply
Department of Planning and
Permitting (Land Use Approvals
Branch and Wastewater Branch)
Department of Transportation Services
Police Department
Fire Department

State:

Office of Hawaiian Affairs
State Historic Preservation Division
Department of Health (Environmental
Planning Office)
Department of Transportation

Others:

Ewa Villages Owners' Association
Ewa Neighborhood Board

III. DESCRIPTION OF PROPOSED ACTION

A. GENERAL DESCRIPTION

1. Existing Conditions

This 48.395 acre property currently houses a number of farm buildings and outbuildings including two tenants' houses, and a number of metal shipping containers. It is also used for storage of farm equipment such as trucks and tractors and for keeping livestock such as goats and chickens with cleared areas

for livestock pastures and paddocks. Kiawe scrub with weedy plant species dominate the area. The property is completely enclosed with a chain link fence.

2. Proposed Development

This 48.395 acre property is planned for development with light industrial uses to include light manufacturing, warehousing, distribution, possibly a self-storage building, and masonry, plumbing, electrical, glazing, painting, flooring and roofing trades. The project is also expected to include a small amount of accessory retail space such as a convenience store. The proposed light industrial condominium development will offer businesses an opportunity to purchase relatively smaller units, or a combination of smaller units, that are ready for occupancy requiring only the addition of an electric meter and water connection. At the same time the proposed development will offer new employment opportunities to the Ewa area of the island. The buildings are planned as tilt-up wall construction with concrete slab-on-grade with each building ranging in size from 18,000 to 65,000 square feet. Strict adherence to the CC&R's, the covenants and development regulations within the development, will limit and control the hours of operation and uses within the proposed development. The proposed industrial development will be built in two phases.

Final Environmental Assessment - Ewa Industrial Park

Phase I totaling 23.3 acres, will include 11 buildings with approximately 489,148 square feet of building area. Approximately 930 parking stalls will be provided in Phase I of the proposed industrial development. The typical architecture will be a one or two-story plantation style building in earth colors with green metal pitched roofs with canopies surrounded by landscaping and shade trees. All service and loading areas will be interior screened spaces and all parking areas screened by walls, green slatted fences and landscaping with parking area lighting projecting downward away from adjacent views and residences.

Phase II totaling 25.095 acres will include twenty (20) buildings with approximately 523,600 square feet of building area. Approximately 1,248 parking stalls will be provided in Phase II of the proposed industrial development. The typical architecture will be a one or two-story plantation style building in earth colors with green metal pitched roofs with canopies surrounded by landscaping and shade trees. All service and loading areas will be interior screened spaces and all parking areas screened by walls, green slatted fences and landscaping with parking area lighting projecting downward away from adjacent views and residences. Conceptual Plans for both phases are included in Appendix I.

Final Environmental Assessment - Ewa Industrial Park

Access to Phase I is proposed via a Main Driveway connection to Geiger Road at the eastern boundary of the site. A secondary right-in/right-out driveway connection to Geiger Road is proposed about 200 feet west of the Main Driveway. The Main Driveway would be located about 500 feet east of the planned Coral Creek Road, a connection to Geiger Road opposite the Honouliuli WWTP east driveway.

Access to Phase II will provide an additional project driveway connection to Roosevelt Avenue (Access 2) about 500 feet east of Philippine Sea Street. However, due to community concerns expressed regarding the addition of project traffic to Renton Road, Chapter 6 of the Traffic Impact Assessment Report assesses a second scenario without the planned project driveway connection to Renton Road. The applicant understands that the State Department of Transportation (DOT) is also concerned about driveways crossing the OR&L right-of-way. Based on community and DOT concerns the earlier proposal for an emergency access at Renton Road near Haakai Street is being eliminated.

Please refer to Appendix II - Traffic Impact Assessment Report, dated June 27, 2007.

3. Location

The development site is located at 1020 Geiger Road, Ewa, on the Island of Oahu. The Ewa Development Plan Urban Land Use Map is a conceptual plan that provides a vision on land uses. The vision for this general area is for industrial use, but is not site specific. The proposed development is consistent with the vision of the Ewa Development Plan. The subject property is located in the "Urban Fringe" area of Ewa. It is located adjacent to the Honouliuli Sewage Treatment Plant to the south and west, Geiger Road to the south and portions of the OR&L Railway right-of-way to the north. Coral Creek Golf Course is located to the east and the Oahu Railway Museum to the west.

4. Surrounding Area

As stated above the property is immediately surrounded by the Honouliuli Sewage Treatment Plant to the south and west, Geiger Road to the south, and portions of the OR&L Railway right-of-way to the north. Coral Creek Golf Course is located to the east and the Oahu Railway Museum to the west. The historic Ewa Villages development is located directly north just beyond the OR&L Railway.

Final Environmental Assessment - Ewa Industrial Park

The greater surrounding area includes Kalaeloa to the west, the proposed Kapolei West to the north and Ewa Gentry to the east and south.

5. Conformance with the State and City Planning Documents

a. State Land Use

The property consists of 48.395 acres. 23.3 acres of this property are designated as “Urban” on the State Land Use Map. The remaining 25.095 acres are designated as “Agricultural” on the State Land Use Map. The applicant will be requesting a State Land Use Boundary Amendment from “Agricultural” to “Urban” for the 25.095-acres still classified as “Agricultural”.

The State’s Urban District permits uses such as an industrial subdivision or industrial park development. Phase II of the proposed Ewa Industrial Park is currently within the State’s Agricultural District which is intended to support agricultural production and accessory uses. The proposed industrial subdivision or industrial park development is not permitted within the Agricultural District and will require a State Land Use District Boundary Amendment to change from Agricultural to Urban District.

Final Environmental Assessment - Ewa Industrial Park

The State Land Use Commission in a letter dated October 18, 2007, confirmed the State Land Use Urban/Agricultural District boundary (Appendix III).

In a letter dated December 6, 2007, Kusao & Kurahashi, Inc., the applicant's agent, provided an annual report (Appendix III) to the State Land Use Commission detailing the applicant's compliance with the 27 conditions of approval supplemented by the Gentry Investment Properties' "Ewa By Gentry, Docket No. A88-627, SLUC Annual Report, July 2006" on compliance with the conditions for reclassification of the larger 650.2-acre portion of the 673.3-acre property that was reclassified.

It is the applicant's intention to attract businesses such as masonry, plumbing, electrical, glazing, painting, flooring and roofing trades among many other light industrial businesses. However, due to community concerns and sensitivity on the part of the developer to those residents living in the vicinity of the project site, the following businesses will be prohibited from operating in the proposed industrial development; petroleum processing plants, explosives and chemical manufacturing or storage plants, agricultural producers processing plants, salvage

Final Environmental Assessment - Ewa Industrial Park

yards, waste disposal plants, composting plants, recycling plants and demolition plants.

b. General Plan

The proposed development will meet the intent and objectives of the General Plan's Economic Activity, Objective A, Policy 2, stated as follows:

"Encourage the development of small businesses and larger industries which will contribute to the economic and social well-being of Oahu residents."

Comment: The proposed development will provide new industrial space for new and existing industries providing approximately 1,430 to 1,650 new jobs that will contribute to the economic and social well-being of Oahu residents.

The General Plan's Physical Development and Urban Design, Objective A, Policy 7 will also be implemented, as follows, through the proposed industrial development on the project site:

"Locate new industries and new commercial areas so that they will be well related to their markets and suppliers, and to residential areas and transportation facilities."

Comment: The proposed industrial development will enable the applicant to provide industrial space in an

Final Environmental Assessment - Ewa Industrial Park

area in close proximity to major thoroughfares in Ewa with good access to the freeway and conveniently located in relation to the growing communities in Kapolei and Ewa, providing needed jobs to help reduce the traffic flowing in the peak direction into downtown Honolulu for employment. The project site is also located in relatively close proximity to the Kalaeloa Deep Draft Harbor.

c. Ewa Development Plan (DP)

i. The Vision for Ewa's Future

The proposed development falls within the Urban Growth Boundary described in Section 2.2.1 of the Ewa DP. The proposed industrial development will provide new jobs located in close proximity to the western Ewa communities where morning traffic traveling to freeway on-ramps experience extended delays. Jobs at the proposed industrial park will allow nearby residents an opportunity to work close to home and to reduce traffic traveling on the freeway into town.

Final Environmental Assessment - Ewa Industrial Park

ii. Land Use Policies, Principles, and Guidelines

The applicant, based on discussions with the State Department of Transportation (DOT), the State Land Use Commission Boundary Amendment Decision and Order for a portion of the subject property, and previous Unilateral Agreements in the Ewa area, including one for the adjacent property, agrees to provide a 15-foot buffer area between the OR&L right-of-way and our security wall/fence. This will provide ample space for a possible bikeway easement for the OR&L right-of-way and additional area for landscaping. The Ewa Industrial Park development plans to provide a 15-foot setback buffer area for possible bikeway easement and/or landscape buffer outside of a security wall/fence and an additional 25-foot setback inside of the security wall/fence that will be used for parking (no structures). The 40-foot setback for structures (except for the security wall/fence) would be consistent with the Ewa zoning ordinances described in the enclosure. Our response letter to DPP, dated April 22, 2008 (Appendix IV - Agency Comments), included an email received from DOT and other

Final Environmental Assessment - Ewa Industrial Park

information about the proposed bikeway planned by DOT. It also provides additional justification for the 40-foot setback for structures (State Land Use Commission Boundary Amendment Decision and Order for a portion of the subject property and previous Unilateral Agreements in the Ewa area). There will be opportunities for pedestrian access from the project site to the Pearl Harbor Historic Trail (PHHT) within the OR&L Railroad right-of-way.

The proposed 15-foot setback to support development of a State DOT bikeway within and possibly adjacent to the OR&L right-of-way, is consistent with Adaptive Reuse in Section 3.4.3.1 of the Ewa DP. Although the 40-foot setback is less than the 50-foot setback recommended by the Adjacent Uses portion of Section 3.4.3.1 of the Ewa DP, it is consistent with other zoning setbacks within this area of Ewa. Use of the bikeway and right-of-way will be further supported by pedestrian access points for the industrial park employees and visitors.

Section 3.7.3.1 of the Ewa DP describes Industrial Centers in Ewa and recognizes that Honouliuli should remain a smaller industrial area. This section also states that the City should acquire an additional 60 acres to accomplish expansion plans for the Honouliuli Wastewater Treatment Plant (WWTP). Based on discussions with the Department of Environmental Services the expansion of the Wastewater Treatment Plant (WWPT) can be accommodated with the acquisition of a portion of the project site (the existing sewer easement on the property) and assistance from the applicant in allowing drainage from the WWTP to flow through their property. This coupled with plans to seek expansion over federally owned property at Kalaeloa will provide for the future expansion needs of the WWTP. Their position was confirmed in a memorandum from the Department of Environmental Services (DES) dated October 12, 2007, commenting on the Draft EA. DES has noted their intention to purchase a portion of the project site to accommodate planned expansion at the WWTP. The applicant supports the DES

proposal for acquiring the existing easement on the applicant's property to accommodate expansion on the existing sewage treatment plant site and further supports DES's proposal to pass their drainage flow through our property and into the Coral Creek Golf Course which will free up existing detention/retention drainage basins on the WWTP site for future expansion of facilities.

Section 3.7.3.2 of the Ewa DP cites Appropriate Scale and recommends that the visibility of large buildings volumes and tall building or machinery elements from resort areas, residential areas, commercial and civic districts, and parks should be minimized through site planning and landscaping. The proposed industrial park abuts a golf course, the WWTP, and across Geiger Road an IMX-1 Industrial-Commercial Mixed Use District on over 50% of its frontage. In the design of the proposed industrial park the applicant was sensitive to the character and culture of the surrounding community and designed the park buildings and open space to reflect plantation style buildings. The typical architecture of the industrial

Final Environmental Assessment - Ewa Industrial Park

buildings in the proposed Ewa Industrial Park will be a one or two-story plantation style building in earth tone colors with green metal pitched roofs and canopies surrounded by landscaping and shade trees. All service and loading areas will be interior screened spaces and all parking areas screened by walls, green slatted fences and landscaping with parking area lighting projecting downward away from adjacent views and residences. The section on Environmental Compatibility recommends that industries and utilities that discharge air or water pollutants, even when treated, should be located in areas where they would impose the least potential harm on the natural environment; uses that generate high noise levels should be located and operated in a way that will keep noise to an acceptable level in existing and planned residential communities; and shoreline setback for buildings should be a minimum of 60 feet and 150 feet where possible. The 48.395 acre property is planned for development with light industrial uses to include light manufacturing, warehousing, distribution, possibly a self-storage building, and

Final Environmental Assessment - Ewa Industrial Park

masonry, plumbing, electrical, glazing, painting, flooring and roofing trades. The project is also expected to include a small amount of accessory retail space such as a convenience store. Strict adherence to the CC&R's, the covenants, conditions and restrictions, will limit and control the hours of operation and uses within the proposed development. Through the CC&R's the applicant will prohibit owners/tenants from operating petroleum processing plants, explosives and chemical manufacturing or storage plants, agricultural processing plants, salvage yards, waste disposal plants, composting plants, recycling plants and demolition plants. Most of these uses would not be permitted by the Land Use Ordinance anyway, because of the project's proximity to existing and future residential zoned properties (based on the Ewa DP Urban Land Use Map). These uses would have had a significant potential for impacts related to air quality, water quality and noise. In addition, the Ewa Industrial Park development will incorporate mechanical equipment that is typical for commercial buildings and

Final Environmental Assessment - Ewa Industrial Park

industrial park lands. Noise from this equipment must meet the State DOH maximum permissible noise limits at the property line. For industrial areas adjacent to other industrial, commercial and residential areas, the noise limit is 70 dBA during the day and night. The project site is situated over 1.5 miles from the shoreline and will not have an impact to coastal waters, since the applicant will provide an on-site system to remove solids from the captured runoff and will utilize existing ponds on the golf course for additional opportunity for removal of silt and solids.

Section 3.7.3.3 Guidelines for the Honouliuli Industrial Area notes that building heights should generally not exceed 60 feet, especially for buildings of large mass. The proposed I-2 Intensive Industrial District zoning would have a 60-foot height limit, however, the proposed industrial development will not affect any important view planes in the Ewa area, and when re-zoned and developed will not exceed the 60-foot height limit in the I-2 Intensive Industrial District zoning designation. The Landscape Treatment section proposes that the visibility of parking, storage,

industrial equipment and operations areas from the street should be minimized through the planting of a landscape screen, consisting of trees and hedges, along street frontages. The project area will be landscaped and will include a 6-foot high, 8-inch thick, tilt-up concrete wall surrounding a portion of the property. The exterior side concrete walls will be covered with bougainvillea, natal plums or creeping fig to minimize the threat of graffiti and to enhance and soften the visual appearance of the solid walls on the surrounding community.

iii. Public Facilities and Infrastructure Policies and Principles

The project will comply with the Ewa Development Plan, Section 4.1.7, Comprehensive Roadway Network, as follows:

The Traffic Impact Assessment Report, Executive Summary states in part..... “Project access to Phase 1 is proposed via a Main Driveway connection to Geiger Road at the eastern boundary of the site. A Right-in/Right-out driveway connection to Geiger Road is proposed about 200 feet west of the Main Driveway. The Main Driveway would be located about 500 feet east of

Final Environmental Assessment - Ewa Industrial Park

the planned Coral Creek Road A connection to Geiger Road opposite the Honouliuli WWTP east driveway.”

It further states: “The development of the western Phase 2 portion of the Project site would provide additional Project driveway connections to Roosevelt Avenue (access 2) about 500 feet east of Philippine Sea Street and to Renton Road (Access 3) near Haakai Street.”

As mentioned earlier, the applicant understands that the State Department of Transportation (DOT) is concerned about driveways crossing the OR&L right-of-way. Based on discussions with staff at DOT, they prefer no new access crossing the OR&L right-of-way. They would consider relocating an existing access crossing the OR&L right-of-way (Phillipine Sea Road) to our property. The applicant plans to eliminate the emergency access to Renton Road near Haakai Street.

iv. Ewa Development Plan Urban Land Use Map

The Ewa Development Plan Urban Land Use Map is a conceptual plan that provides a vision on land uses. The vision for this general area is for industrial use, but is not site specific. The proposed

Final Environmental Assessment - Ewa Industrial Park

development is consistent with the vision of the Ewa Development Plan.

v. Ewa Public Infrastructure Map

The Ewa Public Infrastructure Map (PIM) shows a proposed arterial roadway running mauka of the proposed project; a drainage system running mauka of the proposed project; and PIM Symbol #013 depicts future expansion of the Honouliuli WWTP.

d. Zoning

The project area of 48.395 acres is currently zoned AG-1 Restricted Agricultural District. In Phase I the applicant will be requesting a zone change from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District for 23.3 acres, to allow the development of Phase I of the proposed industrial park. In Phase II consisting of 25.095 acres, the applicant must first obtain a State Land Use Boundary Amendment and then apply for a Zone Change from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District.

Although the applicant plans to restrict certain uses (through covenants, conditions and restrictions - CC&R's) with the potential for significant impact from the proposed industrial park, this is not an industrial park that will

Final Environmental Assessment - Ewa Industrial Park

operate under the permitted uses of the I-1 Limited Industrial District. The applicant is requesting uses permitted under the I-2 Intensive Industrial District.

The concerns with the I-1 Limited Industrial District includes the loss of the following uses:

i. Animal products processing

This use that would be appropriate given the industrial parks proximity to the Waianae farmlands that includes many of the islands piggeries and also cattle farms. Processing plants at this location could save travel time for farmers/ranchers in getting their product processed and would also be near Kalaeloa Harbor which could support shipping of processed meats to the outer islands. The site is also on the way to the Honolulu International Airport and Honolulu Harbor and would result in an efficient routing plan for delivery to the processing plant and continuing on to the major transportation terminals.

ii. Maritime-related vocational training, sales, construction, maintenance and repairing

Given the industrial parks close proximity to Ewa Marina (under construction) and the existing Ko

Final Environmental Assessment - Ewa Industrial Park

Olin Marina, maritime-related vocational training, sales, construction, maintenance and repairing would help meet an important need in support of the two marinas. This site provides a convenient location for industrial uses that would support the marinas and boating industries.

iii. Repair establishments, major

Repair establishments major is a critical use for the success of the industrial park. Repair establishments major would include many of the industrial users in Kakaako that are relocating due to increased residential and mixed use developments that are implementing the long range plan for Kakaako. These users include furniture repair, industrial machinery and heavy equipment repair, bus and truck repair, and repair of all vehicle (all types) body and fender, and straightening of frame and body parts.

These uses are not expected to have a significant impact on the surrounding uses and some are deemed important and necessary for a successful industrial park providing industrial services in support of the surrounding residential communities and the nearby Ewa Marina and Resort area.

Final Environmental Assessment - Ewa Industrial Park

Although the I-1 District's 40-foot height limit would cover the necessary height for our standard designed warehouse module which has a 36-foot height for a one-story warehouse with mezzanine office space, the proposed self storage facility would probably be developed with a 50-foot height, for a four to five-story facility. There may be other users that may need a larger more custom designed facility that would also require a 40 to 50-foot height limit.

Based on these limitations with the I-1 District zoning, this alternative is not acceptable.

The purpose of the industrial districts is to recognize the importance of industrial uses to the welfare of city residents and to provide areas for industrial uses in which the industrial uses will not have to compete with commercial uses for land.

The intent of the I-1 Limited Industrial District is to provide areas for some industrial employment and service needs of rural and suburban communities. It is intended to accommodate light industrial uses which have few environmental impacts and complement the development scale of the communities they would serve.

The intent of the I-2 Intensive Industrial District is to set aside areas for the full range of industrial uses necessary to

Final Environmental Assessment - Ewa Industrial Park

support the city. It is intended for areas with necessary public infrastructure support, near major transportation systems and other locational characteristics necessary to support industrial centers. It shall be located in areas away from residential communities where certain heavy industrial uses would be allowed. The subject property is located adjacent to a golf course, the sewage treatment plant, and an existing agricultural zoned property to the north with separation provided by the 40-foot OR&L right-of-way. To the west, a small portion of the project site abuts a small residential subdivision. To the south, west of the sewage treatment plant is primarily vacant former military land that is part of the former Barbers Point Naval Air Station.

B. TECHNICAL CHARACTERISTICS

1. Use Characteristics

The proposed light industrial condominium development will offer businesses the opportunity to purchase relatively small units, or a combination of smaller units, that are ready for occupancy requiring only the addition of an electric meter and water connection. The proposed industrial development will also provide employment and provide Ewa and nearby residents an opportunity to live, work and play in the Ewa area of Oahu. This employment is expected to reduce the need for

residents in the surrounding area and along the travel corridor into town to travel in the peak hour direction toward downtown Honolulu to work.

This 48.395 acre property is planned for development with light industrial uses to include light manufacturing, warehousing, distribution, possibly a self-storage building, and masonry, plumbing, electrical, glazing, painting, flooring and roofing trades. It is also expected to include a small amount of accessory retail space such as a convenience store.

The Ewa Development Plan Urban Land Use Map is a conceptual plan that provides a vision on land uses. The vision for this general area is for industrial use, but is not site specific. The proposed development is consistent with the vision of the Ewa Development Plan.

2. Physical Characteristics

The buildings are planned as tilt-up wall construction with concrete slab-on-grade with each building ranging in size from 6,000 to 48,000 square feet.

Phase I totaling 23.3 acres will include 11 building with approximately 489,148 square feet of building area. Approximately 930 parking stalls will be provided in Phase I. The typical architecture will be a one to two-story plantation style building in earth colors with green metal pitched roofs with canopies, surrounded by landscaping and shade trees. All

Final Environmental Assessment - Ewa Industrial Park

service and loading areas will be interior screened spaces and all parking areas screened by walls, green slatted fences and landscaping with parking area lighting projecting downward away from adjacent views and residences.

Phase II totaling 25.095 acres will include twenty (20) buildings with approximately 523,600 square feet of building area. Approximately 1,248 parking stalls will be provided in Phase II of the proposed industrial development. The typical architecture will be a one to two-story plantation style building in earth colors with green metal pitched roofs with canopies surrounded by landscaping and shade trees. All service and loading areas will be interior screened spaces and all parking areas screened by walls, green slatted fences and landscaping with parking area lighting projecting downward away from adjacent views and residences.

Access to Phase I is proposed via a Main Driveway connection to Geiger Road at the eastern boundary of the site. A right-in/right-out driveway connection to Geiger Road is proposed about 200 feet west of the Main Driveway. The Main Driveway would be located about 500 feet east of the planned Coral Creek Road A connection to Geiger Road opposite the Honouliuli WWTP east driveway.

Access to Phase II will provide an additional project driveway connection to Roosevelt Avenue (Access 2) about

500 feet east of Philippine Sea Street. However, due to community concerns expressed regarding the addition of project traffic to Renton Road, Chapter 6 of the Traffic Impact Assessment Report assesses a second scenario without the planned project driveway connection to Renton Road. The applicant understands that the State Department of Transportation (DOT) is also concerned about driveways crossing the OR&L right-of-way. Based on community and DOT concerns the earlier proposal for an emergency access at Renton Road near Haakai Street is being eliminated.

3. Construction Characteristics

The proposed Ewa Industrial Park will be constructed in two phases. Construction on Phase I will begin as soon as the applicant is able to receive approval of the development from the City and County of Honolulu, including zone change, possible subdivision, grading permit and building permit approvals.

Phase II must first obtain a State Land Use Boundary Amendment from Agricultural to Urban and then apply for a Zone Change from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District. These land use permits, in addition to the necessary grading and building permit, must be obtained prior to commencement of Phase II of the proposed Ewa Industrial Park.

Final Environmental Assessment - Ewa Industrial Park

The development will be built at or near existing grade. Excavation should be limited to the footings and foundations of the structures and underground utilities.

Flag men will be utilized as needed to assist vehicles entering and exiting the construction site.

Short term impacts on air quality are expected to be primarily related to dust generated by the construction activity. Dust will be generated in the course of excavating for foundations and utility lines. Dust control measures appropriate to the situation will be employed by the contractor, including where appropriate, the watering of exposed soils, erection of dust barriers and other methods for minimizing dust. Please refer to Appendix V - Air Quality Impact Report.

Short term noise impacts at construction sites are a normal result of construction activity. The State Department of Health administers rules and regulations relating to the hours during which construction is permitted and the noise levels permitted during those hours. The contractor will be required to apply for a permit from the State Department of Health should noise from construction activities exceed regulatory limits. The contractor will abide by the noise regulations incorporated into the permit.

Final Environmental Assessment - Ewa Industrial Park

Noise and air quality surrounding construction projects are regulated by the Department of Health. The contractor will adhere to the regulations governing noise and air quality. Please refer to Appendix VI - Environmental Noise Assessment Report.

IV. IMPACTS

A. DEMOGRAPHIC IMPACTS

1. Residential Population

The proposed industrial development will not affect the residential population in Ewa.

2. Visitor Population

The proposed industrial development will not impact on the number of visitors to the islands nor the de facto visitor population.

3. Character or Culture of the Neighborhood

The Ewa Industrial Park represents a natural progression of the Honouliuli Ahupua'a through ancestral settlement, colonization, century of sugar cane crop cultivation, and development of the plantation villages and community center to its present proposal to become a thriving business core, able to support the Ewa community with jobs and opportunities.

Final Environmental Assessment - Ewa Industrial Park

In the design of the proposed industrial park the applicant was sensitive to the character and culture of the surrounding community and designed the park buildings and open spaces to reflect plantation style buildings in earth colors with green metal pitched roofs with canopies surrounded by landscaping and shade trees. All service and loading areas will be interior screened spaces and all parking areas screened by walls, green slatted fences and landscaping with parking area lighting projecting downward away from adjacent views and residences.

The light industrial park will act as a natural zoning buffer between the Honouliuli Wastewater Treatment Plant (HWWTP), the military character of former NAS facilities and the mauka residential communities.

Chapter 3.4 Historic and Cultural Resources of the Ewa Development Plan dated August 1997 states as follows: “3.4.3 Guidelines - Adjacent Uses - New development should be set back a minimum of 50 feet on either side of the OR&L right-of-way, unless it is directly related to the operation of the railroad, or is consistent with the use of the right-of-way for open space and bikeway purposes in stretches where railroad operation is not feasible, or is otherwise specified in existing land use approvals.” As explained earlier, in the design of the proposed Ewa Industrial Development the applicant will

Final Environmental Assessment - Ewa Industrial Park

provide a 40-foot setback for structures, except for a security wall/fence (consistent with previous ordinances approved in this and other parts of Ewa), from the historic OR&L right-of-way that is adjacent to the subject property on its mauka side.

Traditionally, Honouliuli has been a flourishing and prosperous settlement, known for its taro, blue poi, sisal, ocean resources and later for its villages and sugar mill. It has always been a community core and nucleus which the Ewa Industrial Park intends to continue by providing small scale services, business opportunities and a sense of location and neighborhood for people of Ewa and the surrounding communities.

A Cultural Impact Assessment Report, dated January 2007, was prepared by Cultural Surveys Hawaii, Inc. Please refer to Appendix VII - Cultural Impact Assessment Report.

4. Displacement

There are currently two occupied structures on the property. One structure is occupied by a caretaker/owner's son and the other structure is occupied by a gentleman who keeps two or three head of cattle on the property. Each tenant is on a month to month lease and they are aware of the proposed plans for an industrial park.

B. ECONOMIC IMPACTS

1. Economic Growth

The proposed industrial development will have a positive economic effect on the Ewa community by providing employment opportunities that currently do not exist on this site. There will be opportunities for short-term construction employment during the development of the project site, and many long-term employment opportunities as the project is built-out to full capacity.

2. Employment

SMS Research & Marketing Services conducted a Job Creation Assessment, dated February 10, 2007. Please refer to Appendix VIII.

The section on Employment, page 11, states in part as follows:

“SMS professionals spoke with owners of businesses located in Campbell Industrial Park, Gentry Industrial Park and Mililani Tech Park to understand the number of employees typically found within industrial park businesses. Based solely on the businesses observed within the three industrial parks studied, there were an average of 18 employees per business.”

“Anticipated Employment Growth with this Project -
If the proposed industrial development attracts tenants

Final Environmental Assessment - Ewa Industrial Park

similar to other industrial parks in the area, SMS estimates between 2,340 and 2,700 new jobs will be added in Ewa. If the development attracts only smaller businesses, then 520 to 600 new jobs will be added to the area. More likely the projected project is likely to attract a mix, therefore an average between 1,430 and 1,650 new jobs are likely to be available to the workforce in the Ewa area.”

	4 Employees	18 Employees	Average
130 units	520	2340	1430
150 units	600	2700	1650

The proposed Ewa industrial development will allow nearby residents an opportunity to live, work and play in the Ewa area of Oahu. This employment is expected to reduce the need for residents in the surrounding area and along the travel corridor into town, to travel in the peak hour direction towards downtown Honolulu to work.

3. **Government Revenues/Taxes**

Tax revenues will be generated by the short term construction work, and long-term permanent jobs created with the development of the industrial park.

Final Environmental Assessment - Ewa Industrial Park

Property tax revenues to the City are expected to increase with the development of new improvements (buildings) on the proposed industrial site.

C. HOUSING IMPACTS

1. Increase Supply

The proposed development will not affect the supply of housing.

2. Affordable Units

The proposed development will not include new residential units and therefore will not provide affordable housing units.

D. PUBLIC SERVICES

1. Access

Access to Phase I is proposed via a main driveway connection to Geiger Road at the eastern boundary of the site. A secondary right-in/right-out driveway connection to Geiger Road is proposed about 200 feet west of the main driveway. The main driveway would be located about 500 feet east of the planned Coral Creek Road a connection to Geiger Road opposite the Honouliuli WWTP east driveway.

Access to Phase II will provide an additional project driveway connection to Roosevelt Avenue (Access 2) about 500 feet east of Philippine Sea Street. However, due to community concerns expressed regarding the addition of

Final Environmental Assessment - Ewa Industrial Park

project traffic to Renton Road, Chapter 6 of the Traffic Impact Assessment Report assesses a second scenario without the planned project driveway connection to Renton Road. The applicant understands that the State Department of Transportation (DOT) is also concerned about driveways crossing the OR&L right-of-way. Based on community and DOT concerns the earlier proposal for an emergency access at Renton Road near Haakai Street is being eliminated.

The proposed expansion may involve some short term construction disruption of traffic for transportation of construction equipment to and from the site and delivery of building materials to the site. The delays are normally of short duration and will end when the construction is completed.

2. Transportation

Wilbur Smith Associates has prepared a traffic report titled "Traffic Impact Assessment Report for Ewa Industrial Park", dated June 27, 2007. Please refer to Appendix II - Traffic Impact Assessment Report.

Please note that the Traffic Impact Assessment Report, including the Executive Summary, includes an access roadway to Renton Road. However, Chapter 6 of the report analyzes the project build-out without an access to Renton Road. This is due to community concerns expressed regarding the addition of project traffic to Renton Road. The applicant understands

Final Environmental Assessment - Ewa Industrial Park

that the State Department of Transportation (DOT) is also concerned about driveways crossing the OR&L right-of-way. Based on community and DOT concerns the earlier proposal for an emergency access at Renton Road near Haakai Street is being eliminated.

The Traffic Impact Assessment Report, “Executive Summary” and Chapter 6 states in part as follows:

“The Ewa Industrial Park (the Project) is planned for the approximately 48.395 acres located between Geiger and Renton Roads in the Ewa District of Oahu. The “L” shaped site is located along the east and mauka sides of the Honouliuli Waste Water Treatment Plant (WWTP). The 23.3 acres along the eastern boundary has previously been approved by the State Land Use Commission for urban development, with this portion of the Project identified as Phase 1.”

“The Project plans envision the development of the site with a mix of light manufacturing, warehousing, distribution, and self-storage uses, plus a small amount of accessory retail uses. The preliminary concept includes development of approximately 1,237,000 square feet of building space for light industrial uses with about 6,000 square feet of accessory retail uses.”

“The Project Phase 1 area is expected to be developed and occupied by year end 2009. The build-out of the Project is expected by year end 2012.”

“Project access to Phase 1 is proposed via a Main Driveway connection to Geiger Road at the eastern boundary of the site. A Right-in/Right-out driveway

Final Environmental Assessment - Ewa Industrial Park

connection to Geiger Road is proposed about 200 feet west of the Main Driveway. The Main Driveway would be located about 500 feet east of the planned Coral Creek Road A connection to Geiger Road opposite the Honouliuli WWTP east driveway.”

“This study has assessed traffic conditions for following scenarios:

1. Existing traffic conditions.
2. 2009 conditions without the Project to serve as a baseline for assessment of Project impacts, and 2009 with the Project Phase 1 development.
3. 2012 conditions without the Project to serve as a baseline for assessment of Project impacts, and 2012 with the Project Build-out development.

“The Traffic Impact Assessment Report for the Ewa Industrial Park focuses on the key intersections located near the Project. The study proposes roadway improvements on the adjacent roadways to accommodate 2009 and 2012 traffic needs with the Project.”

“PROJECT TRIP GENERATION

At full build-out, the land uses within Ewa Industrial Park are estimated to generate a total of 1,390 and 1,384 vehicles entering or exiting the site in the weekday morning and afternoon peak hours, respectively.”

“The trips entering accessory retail portion of the development would include both “new” vehicle trips and additional stops by vehicles that would be traveling past

Final Environmental Assessment - Ewa Industrial Park

the site whether or not the Project is developed. These additional “stops” are referred to as “pass-by” trips which would approximate between 60% of the trips for the convenience market assumed as the accessory retail use within the Project. The pass-by trips are reflected through adjustments to the numbers of vehicles entering/exiting the site and are not added as additional trips on the area roadways.”

“With the adjustments for pass-by trips, the Project is estimated to add 1,149 new vehicle trips to the off-site roadways in the weekday morning peak hour and 1,196 new trips in the afternoon y peak hour (Table S-1). The pass-by trips are reflected through adjustments to the traffic turning movement volumes at the intersections of the Project Access Driveways to reflect additional turns into/out of the Project by vehicles traveling along Geiger Road past the convenience market.”

“The development of only the Phase 1 portion of the site would generate a total of 541 and 525 additional vehicle trips on the adjacent streets during the weekday morning and afternoon peak hours, respectively, after adjustments for pass-by trips.”

Final Environmental Assessment - Ewa Industrial Park

Table S-1 VEHICLE TRIP GENERATION EWA INDUSTRIAL PARK BUILDOUT							
Item	Morning Peak Hour			Afternoon Peak Hour			24-Hour
	Total	Enter	Exit	Total	Enter	Exit	
Phase 1 Vehicle Trips							
Convenience Market (6 TSF)	402	201	201	314	160	154	4,428
<i>New Trips without pass-bys</i>	<i>161</i>	<i>80</i>	<i>80</i>	<i>126</i>	<i>64</i>	<i>62</i>	<i>1,771</i>
Mini-Storage Warehouse (211.2 TSF)	30	18	12	50	25	25	489
General Light Industrial (251.8 TSF)	270	238	32	287	35	252	2,046
Phase 1 Subtotal	702	457	245	651	220	431	6,963
Phase 2 Vehicle Trips							
General Light Industrial (747,852 TSF)	688	606	82	733	90	643	5,213
Buildout Total Trips	1,390	1,063	327	1,384	310	1,074	12,176
Buildout New Trips Without Pass-bys	1,149	942	206	1,196	214	982	9,519
Wilbur Smith Associates; June 25, 2007							

"2009 and 2012 traffic without the Project

The traffic forecasts reflect a substantial amount of new development near the Project site by 2012. The traffic for these new developments was estimated either through use of trip generation rates or through inclusion of an area traffic growth rate. The forecasts reflect the following assumptions:

- The Ewa by Gentry Makai Area was assumed to be 50% developed in 2009 and built out by 2012, with trips obtained from the developments traffic study.
- The Gentry Companies' Coral Creek Industrial Park, located across from the Ewa Industrial Park site, was assumed to be 50% developed in 2009 and built out by 2012, with trips estimated by WSA.
- The Department of Hawaiian Homelands (DHHL) West initial office and residential development was assumed to be completed by 2009.
- The University of Hawaii West Oahu (UHWO) campus and adjacent residential and commercial development was assumed to be 15% developed by 2009 and 57% developed by 2012, with trips obtained from the project traffic studies.
- Further development of the DHHL West area, Ocean Pointe, and other area developments was assumed to be included in an area-wide traffic growth rate of 3.8% per year."

Final Environmental Assessment - Ewa Industrial Park

“The forecasts also reflect the changes in area circulation patterns that are expected to result from planned roadway projects in the area. The 2009 forecasts reflect the following roadway projects:

- Widening of Geiger Road to four lanes between the Kapolei Parkway and the Honouliuli WWTP.
- Completion of the Kapolei Parkway from Ewa Beach to the City of Kapolei.
- Widening of Fort Weaver Road to six lanes between St. Francis Hospital to 900 feet makai of the Geiger Road intersection.
- Construction of the initial Phase 1 three-lane North-South Road and interchange with the H-1 Freeway.
- Construction of the Coral Creek Collector Road A which intersects Geiger Road opposite the Honouliuli WWTP.”

“In 2009 the diversion of traffic from the Geiger Road-Roosevelt Avenue route is expected to significantly reduce peak hour traffic volumes along Geiger Road by about 40% to 50% as compared to 2006. The Kapolei Parkway near Geiger Road is estimated to attract use by about 1,450 and 1,900 vehicles in the morning and afternoon peak hours, respectively. The peak hour traffic along Fort Weaver Road is estimated to increase by about 18% to 19% by 2009, as compared to the existing traffic volumes.”

“Year 2012 traffic volumes along Geiger Road are projected to remain less than the 2006 volumes. The Kapolei Parkway near the project site is estimated to attract use by about 2,600 and 3,400 vehicles in the morning and afternoon peak hours.”

“2009 traffic conditions with Project phase 1

The development of the Phase 1 portion of the Project is estimated to increase the traffic along Geiger Road between the site and the Kapolei Parkway by about 265 vehicles (+33%) over 2009 volumes without the Project in the morning peak hour and by 268 vehicles (+29.5%) in the afternoon peak hour. The traffic volumes passing through the Geiger Road intersection with Fort Weaver Road are estimated to increase by about 3.1% in the morning peak hour, and 3.5% in the afternoon peak hour.”

“The peak hour traffic conditions at the key intersections in the vicinity of the Project are summarized in Table S-2. The Without (No) Project conditions in the table reflect the planned roadway projects by 2009.”

“The addition of the Project Phase 1 traffic would impact the 2009 traffic conditions at key intersections as summarized in the following paragraphs.”

The project access points (driveways) are shown on the site plan provided in Appendix I - Conceptual Plans.

- “● The traffic turning left from the STOP sign-controlled Project Main Driveway onto Geiger Road would experience very long delays (LOS F) in both peak hours. If the narrow median provides an

effective refuge area to allow drivers to cross the westbound lanes and wait for a gap in the eastbound traffic to complete their turn, the total peak hour delay and traffic volumes would minimally satisfy the MUTCD Warrant #3 criteria to allow the consideration of a traffic signal at this intersection. If the median is not effectively used by drivers, then the total peak hour delay for traffic exiting the driveway would greatly exceed the Warrant #3 criteria to consider a traffic signal.

- Short delays (LOS B) are estimated for traffic exiting the proposed Project Right-in/Right-out Driveway onto Geiger Road.
- The Geiger Road intersection with the Kapolei Parkway is projected to operate at very acceptable conditions with the addition of the Project Phase 1 traffic.
- With the Project, the estimated peak hour traffic at the Geiger Road-Fort Weaver Road intersection would approximate 70% to 73% of the estimated intersection capacity. Average delay is estimated at LOS E without or with the Project as a result of the long cycle length and split phase signal operation.
- The Project traffic would increase average delay for vehicles turning left out of the Coral Creek Road A connection to Geiger Road, but the delay would be at acceptable levels and would not satisfy Warrant #3 criteria to consider a traffic signal.”

Final Environmental Assessment - Ewa Industrial Park

**Table S-2
2009 TRAFFIC CONDITIONS AT KEY INTERSECTIONS
WITH EWA INDUSTRIAL PARK PHASE 1**

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Fort Weaver Rd.- Geiger Rd.	Existing	0.74	70.5	E	0.78	74.1	E
	2009 No Project	0.71	70.1	E	0.67	67.8	E
	2009 With Project	0.73	71.4	E	0.70	70.3	E
Kapolei Pkwy.- Geiger Rd.	Existing	0.63	38.5	D	0.52	38.0	D
	2009 No Project	0.69	33.8	C	0.50	29.2	C
	2009 With Project	0.80	37.9	D	0.59	31.2	C
Geiger Rd.- Project Main Dwy. SB Left	Median Refuge #	0.47	30.3	D	0.77	38.0	E
	No Refuge #	0.86	102.9	F	1.10	122.5	F
Geiger Rd.- Project RIRO Dwy.	With Project #	0.11	11.9	B	0.08	10.0	B
Geiger Rd.- Coral Creek Road A	Existing	NA			NA		
	2009 No Project	0.04	27.3	D	0.05	24.8	C
	2009 With Project	0.05	32.6	D	0.06	29.4	D
Roosevelt Ave.- Philippine Sea St.	Existing	1.29	219.5	F	0.40	24.4	C
	2009 No Project	0.15	15.6	C	0.11	12.5	B
	2009 With Project	0.17	16.8	C	0.13	13.9	B
Roosevelt Ave.- Fort Barrette Rd.	Existing	1.41	218.3	F	1.76	368.5	F
	2009 No Project	0.56	20.8	C	0.50	22.2	C
	2009 With Project	0.57	30.0	D	0.51	31.0	D
Fort Weaver Rd.- Renton Rd.	Existing	1.10	118.9	F	1.28	131.1	F
	2009 No Project	0.82	53.9	D	0.87	45.8	D
	2009 With Project	0.83	54.0	D	0.88	45.9	D
Renton Rd.- Tenney St.	Existing	0.20	15.9	C	0.08	11.9	B
	2009 No Project	0.28	19.5	C	0.15	17.0	C
	2009 With Project	0.28	19.6	C	0.15	17.1	C
Renton Rd.- Kapolei Pkwy.	Existing	NA			NA		
	2009 No Project	0.59	26.9	C	0.53	26.6	C
	2009 With Project	0.60	26.6	C	0.55	26.6	C

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.
ADPV = Average delay per vehicle, in seconds.
LOS = Level of service.
NA = Not Analyzed
= Conditions with STOP sign control

Wilbur Smith Associates; June 27,2007.

- “• The project traffic would increase average delay for vehicles turning left out of the Coral Creek Road A connection to Geiger Road, but the delay would be at acceptable levels and would not satisfy the MUTCD Warrant #3 criteria to allow consideration a traffic signal.”

“2012 TRAFFIC CONDITIONS WITH PROJECT BUILDOUT

The development of the western Phase 2 portion of the Project site would provide additional Project driveway connections to Roosevelt Avenue (Access 2) about 500 feet east of Philippine Sea Street, and to Renton Road (Access 3) near Haakai Street. The additional connections would reduce the traffic using the Geiger Road driveway (Access 1) as compared to the Phase 1 development. The Renton Road driveway is expected to attract the most use with 50% to 51% of the Project build-out traffic, with the Geiger Road driveway used by 20% (PM) to 30% (AM) and the Roosevelt Avenue driveway used by 18% (AM) to 25% (PM).

Most of the Project traffic would use Renton Road to access the Kapolei Parkway, with little traffic expected to travel the section of Renton Road east of the Kapolei Parkway or the section west of the Project driveway. The traffic volumes along Renton Road between the Project driveway and the Kapolei parkway are estimated at about 880 to 900 vehicles in each peak hour, which is similar to the traffic using Renton Road in the 2006 morning peak hour.

With the additional driveways, Geiger Road is estimated to be used by about 400 vehicles in each peak hour at build-out, which is similar to the estimated usage with Project Phase 1 and driveway access only to Geiger Road.”

“Off-Site Intersections

The peak hour traffic conditions at the key intersections in the vicinity of the Project are summarized in Table S-3. The Without (No) Project conditions in the table reflect the planned roadway projects by 2012. Potential issues that would be introduced or modified with Project Build-out in 2012 are summarized in the following paragraphs.

- With the increased traffic from other area developments, the addition of the Project traffic in 2012 morning peak hour would exceed the intersection capacity by 8% versus traffic at 92% without the Project.
- The addition of the Project traffic would increase the average delay at the Geiger Road-Fort Weaver Road intersection by 2.6 seconds in the morning peak hour. However, the added 2-seconds increase the delay from just below the LOS F criteria to just above the criteria. The morning peak hour traffic is estimated at 86% of capacity with the Project, versus 84% without the Project. No physical improvements are warranted by the traffic improvement; the shortening of the extremely long signal cycle length (240 seconds) would improve the average delay.

Final Environmental Assessment - Ewa Industrial Park

**Table S-3
2012 TRAFFIC CONDITIONS AT KEY INTERSECTIONS
WITH EWA INDUSTRIAL PARK BUILDOUT**

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Fort Weaver Rd.- Geiger Rd.	Existing	0.74	70.5	E	0.78	74.1	E
	2012 No Project	0.84	79.7	E	0.79	74.0	E
	2012 With Project	0.86	82.3	F	0.83	79.3	E
Kapolei Pkwy.- Geiger Rd.	Existing	0.63	38.5	D	0.52	38.0	D
	2012 No Project	0.92	52.9	D	0.81	36.0	D
	2012 With Project	1.08	100.3	F	0.95	48.9	D
Geiger Rd.- Coral Creek Road A	Existing #		NA			NA	
	2012 No Project #	0.16	58.1	F	0.14	34.8	D
	2012 With Project #	0.21	78.6	F	0.23	60.3	F
Roosevelt Ave.- Philippine Sea St.	Existing #	1.29	219.5	F	0.40	24.4	C
	2012 No Project #	0.23	18.6	C	0.14	14.3	B
	2012 With Project #	0.25	20.1	C	0.17	16.0	C
Roosevelt Ave.- Fort Barrette Rd.	Existing #	0.67	141.5	F	0.63	159.3	F
	2012 No Project	0.64	23.9	C	0.55	20.8	C
	2012 With Project	0.67	23.6	C	0.58	21.4	C
Fort Weaver Rd.- Renton Rd.	Existing	1.10	118.9	F	1.28	131.1	F
	2012 No Project	0.97	69.2	E	0.97	61.9	E
	2012 With Project	0.98	70.1	E	0.97	62.4	E
Renton Rd.- Tenney St.	Existing #	0.20	15.9	C	0.08	11.9	B
	2012 No Project #	0.42	29.0	D	0.18	18.6	C
	2012 With Project #	0.42	29.8	D	0.18	19.0	C
Renton Rd.- Kapolei Pkwy.	Existing		NA			NA	
	2012 No Project	0.76	28.6	C	0.73	26.9	C
	2012 With Project	0.84	37.6	D	1.12	66.9	E

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.

ADPV = Average delay per vehicle, in seconds.

LOS = Level of service.

NA = No Analyzed

= Conditions for STOP sing control

Wilbur Smith Associates; June 27, 2007.

- The Project traffic would worsen the delays for vehicles turning left out of Coral Creek Road A onto Geiger Road to LOS F from LOS D in the afternoon peak hour, while the delays for the left-turn traffic is estimated at LOS F with or without the Project in the afternoon peak hour. The conditions would not satisfy the MUTCD Warrant #3 criteria to allow consideration of a traffic signal at this location.”
- With the addition of the Project, the afternoon peak hour traffic would approximate 12% over the capacity of the Renton Road intersection with the Kapolei Parkway, versus traffic at 73% of capacity without the Project.”

“Project Access Connections

Traffic conditions with Project Build-out are summarized for the Project Access intersections with the adjacent roadways in Table 5-2 for the morning and afternoon peak traffic hours.

- If the narrow Geiger Road median provides an effective refuge area to allow drivers to cross the westbound lanes and wait for a gap in the eastbound traffic to complete their turn, the vehicles turning left from the STOP sign-controlled Project Main Driveway onto Geiger Road would experience only moderate delays (LOS C or D) in both peak hours. If the median is not effectively used by drivers, then average delay could worsen to LOS F in both peak hours. However, the total peak hour delay and traffic volumes would not satisfy the MUTCD

Final Environmental Assessment - Ewa Industrial Park

Warrant #3 criteria to allow the consideration of a traffic signal at this intersection.

- During the afternoon peak hour, the average delay per vehicle for traffic turning left from the STOP sign-controlled Access 2 driveway onto eastbound Roosevelt Avenue would be at LOS F. However, the estimated cumulative delay and volumes would not satisfy the MUTCD Warrant #3 criteria to allow consideration of a traffic signal.
- Although the number of vehicles estimated to turn left from eastbound Roosevelt Avenue into Access 2 driveway would not typically merit the provision of a left-turn storage lane, many of these vehicles are likely be large trucks that may block the through lane while waiting for a longer gap in the opposing traffic to provide sufficient time to cross into the driveway.
- Few if any Project vehicles are expected to turn left out of the Access 3 intersection onto westbound Renton Road. Therefore, the Access 3 approach to Renton Road is expected to operate at very acceptable conditions with STOP control. The relatively low volume of opposing through traffic along Renton Road past the Access 3 intersection should not merit the provision of a left-turn lane on Renton Road.”

Final Environmental Assessment - Ewa Industrial Park

**Table S-4
2012 TRAFFIC CONDITIONS AT ACCESS CONNECTIONS
WITH EWA INDUSTRIAL PARK BUILD OUT**

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Geiger Rd.-Access 1 SB Left Turn	Median	0.34	33.3	D	0.73	39.4	E
	Refuge	0.66	95.0	F	1.19	168.2	F
	No Median Refuge						
Geiger Rd.- RIRO Dwy.	STOP Control	0.10	13.6	B	0.07	10.1	B
Roosevelt Ave.- Access 2 SB Left	STOP Control	0.24	33.6	D	1.01	107.3	F
Renton Rd.-Access 3 NB	STOP Control	0.13	9.8	A	0.70	20.2	C
<p>V/C = Ratio of the traffic volume to the theoretical capacity of the intersection ADPV = Average delay pr vehicle, in seconds. LOS = Level of service</p> <p align="right">Wilbur Smith Associates; June 27, 2007</p>							

"POTENTIAL MITIGATIVE ACTIONS

The following paragraphs identify potential improvements to mitigate the impacts at those intersections substantially affected by the Ewa Industrial Park traffic, as well as actions to facilitate transit, bicycle, and pedestrian transportation. The mitigative actions apply to both the Phase 1 and Build-out development unless noted otherwise.

Mitigative Actions at Project Driveways

The following actions are proposed for consideration to improve access to the Project site and minimize impacts to the off-site traffic flow.

Project Access 1 Driveway to Geiger Road

Left-turn Lane on Eastbound Geiger Road Approach
– A left-turn lane should be provided with a full-width storage length of 200 feet plus 75 feet taper.

Traffic Signal Control – The estimated conditions after the Project Buildout would not warrant a traffic signal. However, the interim higher traffic volumes before the other access driveways are open may result in much longer delays that might satisfy the warrant and merit signal installation. The construction of the driveway connection to Geiger Road should provide the conduit and boxes that would be needed within the paved roadway in the event signal installation is necessary in the future. The conditions should be monitored to determine if a signal is appropriate.

A signal would be more likely warranted if the Project Access 1 and Gentry Coral Creek Road A connections to Geiger Road are aligned opposite of each other to create a single intersection. The Project Team should meet with Gentry Company and City DPP staff to investigate the possible relocation to form a four-way intersection.

Project Access 2 Driveway Connection to Roosevelt Avenue

Traffic Signal Control - The estimated conditions after the Project Buildout would warrant a traffic signal. The construction of the driveway connection to Roosevelt Avenue should provide the conduit and boxes that would be needed within the paved roadway in the event signal installation is necessary in the future.

Left-turn Storage Lane on Eastbound Roosevelt Avenue Approach - A left-turn lane is proposed with a full-width storage length of 175 feet plus 75 feet taper.

Project Access 3 Driveway Connection to Renton Road

No modifications are proposed.

Mitigative Actions for Off-Site Roadways

The following actions are proposed at those locations anticipated to be substantially affected by the Project traffic.

Geiger Road-Kapolei Parkway Intersection

- Provide a right-turn lane on the westbound approach

Renton Road-Kapolei Parkway Intersection

- Provide a right-turn lane on the westbound approach.

Public Transit, Bicycles, and Pedestrians

Actions that could mitigate the identified issues and also encourage use of these travel modes for access to the Project are outlined in the following list.

Public Transit

- The Project Team should coordinate with the Gentry Company and with the City DTS to identify location of bus stops along Geiger Road that best serve both developments (Phase 1).
- The Project Team should coordinate with the City DTS to identify location of a new or relocated bus stop along Roosevelt Avenue to serve the Project.
- Bus shelters and seating should be provided at the bus stops located adjacent to the Project accesses along Geiger Road, Roosevelt Avenue, and the Kapolei Parkway (near Renton Road).
- The Project Team should review the driveway and sidewalk plans with the City DTS staff to ensure accommodation of TheHandiVan operations for access the Project.

Bicycles

- The preliminary design plans for the widening of Geiger Road by Gentry Homes, Inc. include construction of a bicycle path along the mauka side of the roadway from the Kapolei Parkway to the Honouliuli WWTP. The Project Team should work with the Gentry Company and City DTS staff to ensure a convenient and safe bicycle path crossing of

the planned Project driveway connections to Geiger Road (Phase 1).

- The State DOT has plans to develop a regional bike path adjacent to the OR&L railway. In compliance with the Ewa Development Plan (August, 1997), the developer is maintaining a 40' setback for structures (except for a security wall/fence) within the new development along the entire length of the OR&L boundary.

As explained earlier, in the design of the proposed Ewa Industrial Development the applicant will provide a 40-foot setback for structures, except for a security wall/fence (consistent with previous ordinances approved in this and other parts of Ewa), from the historic OR&L right-of-way that is adjacent to the subject property on its mauka side.

Pedestrians and Walkways

- A sidewalk connection should be provided from within the Project to connect to the Geiger Road bicycle/multi-purpose path to avoid pedestrians walking within the Main Driveway traffic lanes (Phase 1).
- Construct a sidewalk along the Project Access 2 and 3 driveways between the Project and the adjacent roadways to provide safe pedestrian linkages to the adjacent off-site roadways.”

CHAPTER 6 - 2012 BUILDOUT WITHOUT RENTON ROAD DRIVEWAY

CONCLUSION - Page 6-12

“With the elimination of the Access 3 connection to Renton Road (Scenario B), little or no Project traffic would use Renton Road. However, traffic entering/exiting the Project would also experience heavy delays and may require signalization at Geiger/Site Access. Additionally, increased delays and impacts will also be experienced at the intersections of Roosevelt Ave/Fort Barrette Rd and Roosevelt Ave/Philippine Sea St; impacts that may result in the need for signalization to improve traffic operations and safety after full buildout of the Project.

Therefore, if access is not provided to Renton Rd directly from Project driveway and can not utilize a cut-through street (Scenario B), signalization of Roosevelt Ave/Access 2 may be required as an improvement beyond those recommended with Scenario A. However with Scenario A, left and right turn lanes at Roosevelt Ave/Access 2 and at Geiger Rd/Access 1 would only be needed to provide adequate level of service as discussed in Chapter 5.”

Based on comments from the State Department of Transportation (DOT) on the Draft EA dated September 24, 2007 the applicant provided the following response.

- a. We are aware that the project site is subject to overflights of aircraft using Honolulu International Airport and Kalaeloa Airport. However, the project area is outside of

Final Environmental Assessment - Ewa Industrial Park

the 60 Ldn or greater noise level. The applicant will provide a disclosure statement in our sales documents on the potential aircraft overflights and further disclosure provided in the CC&R's, the covenants, conditions and restrictions on development within the industrial park; the owners/tenants will be made aware of the potential for aircraft overflights.

- b. The applicant agrees to early coordination with the State Department of Transportation in their participation of impact fees for transportation improvements. The applicant expects to mitigate regional traffic impacts from the project through payment of impact fees through the Ewa Regional Highway Fund in accordance with Chapter 33A of the Revised Ordinances of Honolulu. In addition the applicant will participate in the funding of improvements at access points to the Ewa Industrial Park. We understand that DOT will be requesting an update to the Traffic Study prior to the development of the Roosevelt Avenue access planned as part of Phase II and that improvements required to support that access are to be provided by the applicant.
- c. As mentioned in your letter, we will await the Highway Division review of our Draft EA. The developer will also discuss with the Highway Division the three items of

Final Environmental Assessment - Ewa Industrial Park

concern in your letter dated September 24, 2007. We expect that the updated traffic study will address these three items by providing a more accurate description of actual traffic on Fort Barrett Road, North-South Road and Roosevelt Avenue and the improvements necessary to support the Roosevelt Avenue access to the property.

In further discussions with staff at the DOT through emails and telephone conversations, we understand that DOT has the following additional concerns (our response to each concern is provided in italics):

- a. As mentioned earlier, the applicant understands that the State Department of Transportation (DOT) is concerned about driveways crossing the OR&L right-of-way. Based on discussions with staff at DOT, they prefer no new access crossing the OR&L right-of-way. They would consider relocating an existing access crossing the OR&L right-of-way (Phillipine Sea Road) to our property.

However, due to community concerns expressed regarding the addition of project traffic to Renton Road and DOT's concerns, the earlier proposal for an access at Renton Road near Haakai Street is being eliminated.

- b. Because of constraints within the existing OR&L right-of-way (ROW), DOT may need to construct parts of our planned leeward bikeway outside the OR&L ROW. To

Final Environmental Assessment - Ewa Industrial Park

reserve sufficient flexibility, we would like the developer of Ewa Industrial Park to dedicate a 15-foot wide bicycle/pedestrian easement within the planned 40-foot building setback, except for a security wall/fence, along the mauka side of their property abutting the OR&L ROW.

The applicant agrees to provide a 15-foot wide area along the OR&L ROW as requested by DOT. Our planned security fence will be located to create a 15-foot wide area for a possible future bikeway easement or landscaping.

- c. DOT will require an updated Traffic Impact Assessment Report (TIAR), after completion of the initial phase of our Ewa North-South Road, when the developer requests approval of the proposed industrial park's Phase II driveway to Roosevelt Avenue. The updated TIAR must explain and justify assumptions about the distribution of project traffic.

The applicant agrees to provide an updated TIAR after completion of the initial phase of the Ewa North-South Road, when the applicant requests approval of the driveway to Roosevelt Avenue. The updated TIAR will include an explanation and justifications for the distribution of project traffic.

Final Environmental Assessment - Ewa Industrial Park

- d. As a condition for approval of project entitlements, when the developer requests approval of the proposed driveway to Roosevelt Avenue, DOT will require the developer, at no cost to the State, to:
- improve the portion of Roosevelt Avenue abutting the industrial park to meet City dedication standards.
 - mitigate project traffic impacts at Roosevelt Avenue intersections. Required mitigation will probably include construction/extension of left-turn lanes and installation of signals when warranted at Roosevelt Avenue with the proposed driveway and with Fort Barrette Road.
 - extend left-turn lanes as necessary at Fort Weaver Road's intersection with Geiger Road/Iroquois Point Road.

The applicant agrees to improve the portion of Roosevelt Avenue abutting the industrial park, at no cost to the State, to meet City dedication standards.

The applicant further agrees to provide the other improvements described in the second and third bullet points, as necessary, based on the revised TIAR, at no cost to the State.

Final Environmental Assessment - Ewa Industrial Park

- e. Plans for work within the State highway ROW, including the OR&L ROW, must be submitted to Highways Division, Traffic Review Branch for review and approval.

Plans for work within the State highway ROW including the OR&L ROW will be submitted to the Highways Division, Traffic Review Branch for review and approval.

The Traffic Impact Assessment Report noted the following planned roadway projects expected to be completed by 2009:

- a. Widening of Geiger Road to four lanes between the Kapolei Parkway and the Honouliuli Wastewater Treatment Plant.
- b. Completion of Kapolei Parkway from Ewa Beach to the City of Kapolei.
- c. Widening of Fort Weaver Road to six lanes from the end of the existing six-lane section near St. Francis Hospital to 900 fee makai of the Geiger Road intersection.
- d. Construction of the initial Phase 1 three-lane North-South Road and the interchange with the H-1 Freeway.
- e. Construction of the Coral Creek Collector Road A which intersects Geiger Road opposite the Honouliuli Wastewater Treatment Plant.

Final Environmental Assessment - Ewa Industrial Park

As a further update, an administrator at Gentry has indicated that the widening of Geiger Road is expected to be completed at around the end of 2011 and the construction of Coral Creek Collector Road is expected to be completed shortly after that in 2012 (however, this is a tentative schedule that could be affected by market conditions and demand). The final 0.7 mile section of the six-lane Kapolei Parkway construction project broke ground on March 17, 2008 with completion projected for the end of 2009. The State Department of Transportation has indicated that the widening of Fort Weaver Road to just makai of Geiger Road is under construction and scheduled to be completed by the middle of 2009 and Phase 1 three-lane North-South Road and the interchange with the H-1 Freeway is scheduled to be completed as follows: Phase 1A completed on 05/01/2007, Phase 1B completion by 01/05/2010, and Phase 1C completion by 09/15/2009.

Our traffic consultant, Wilbur Smith Associates, has indicated that Geiger Road widening is not needed as a result of the Ewa Industrial Park development. However, the combination of the Gentry development accessing Geiger Road at Coral Creek Collector Road and Ewa Industrial Park together may warrant the need for the widening. While the proposed Gentry improvements seem to be running behind their earlier schedule, their improvements will still be in place by full build out of

Final Environmental Assessment - Ewa Industrial Park

Ewa Industrial Park and to support the proposed Gentry development.

3. Water

The Honolulu Board of Water Supply (BWS) currently provides potable water to the existing property.

The applicant, in a letter dated July 6, 2007 to the Board of Water Supply, has requested a domestic water allocation for the proposed light industrial development. The request is for a total water allocation of 193,600 GPD for domestic consumption, based on design standards of BWS of the City and County Honolulu.

The breakdown is as follows:

- Phase I consisting of 11 buildings on 23.3 acres (4,000 gallons per acre) will require approximately 93,200 GPD.
- Phase II consisting of 20 buildings on 25.095 acres (4,000 gallons per day) will require approximately 100,400 GPD.

Irrigation flows are not included in this request; irrigation will take place during off-peak hours.

In response to pre-comments on the Draft EA the Board of Water Supply in a letter dated October 11, 2006 (Appendix IV - Agency comments) stated in part as follows:

Final Environmental Assessment - Ewa Industrial Park

“.....The existing water system cannot provide adequate fire protection to the proposed industrial subdivision. Our Water System Standards require a fire flow of 4000 gallons per minute (gpm) for industrial subdivisions. The existing water system can only provide a flow of approximately 3000 gpm to the farthest fire hydrant. Therefore, the developer will be required to upgrade a portion of the existing water main along Geiger Road to serve the proposed development. The construction drawings should be submitted for approval. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserve the right to change any position or information stated herein up until the final approval of your building permit. The final decision on the availability of water will be confirmed when the building permit is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resources development, transmission and daily storage.”

Based on design standards of the (Department of Wastewater Management) Board of Water Supply the applicant will provide the necessary upgrades to a portion of Geiger

Final Environmental Assessment - Ewa Industrial Park

Road to adequately serve the proposed industrial park's fire flow requirements.

The Board of Water Supply (BWS) in a memorandum dated August 29, 2007, commented that the existing water system is presently adequate to provide domestic water requirements of the proposed industrial development, however, the existing water system cannot provide adequate fire protection to the proposed industrial park. BWS further commented that : availability of water will be confirmed when the building permit application is submitted; applicant will be required to pay the BWS Water System Facilities Charges when water is made available; on-site fire protection requirements should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department; and BWS requires the use of nonpotable water for irrigation of large landscaped areas, if a suitable supply is available.

The applicant agrees to follow BWS recommendations and will meet these requirements for providing adequate fire flow and use of nonpotable water where applicable. Please refer to Appendix IV - Agency Comment Letters.

4. Wastewater

The Department of Planning and Permitting (DPP), Wastewater Branch on July 16, 2007, approved a Sewer Connection Application for Phase I of the Ewa Industrial Park

Final Environmental Assessment - Ewa Industrial Park

with a condition that this project shall be allowed a sewage discharge equivalent of 5.8 ESDU's for each of the 10 buildings with 1.5-inch water meter size and 33.0 ESDU's for the one building with a 3-inch water meter size for a total of 91.0 ESDU's and that construction plans be submitted for review and approval.

DPP, Wastewater Branch on July 16, 2007, also approved a Sewer Connection Application for Phase II of the Ewa Industrial Park with a condition that this project shall be allowed a sewage discharge equivalent of 5.8 ESDU's for each of the 20 buildings with 1.5-inch water meter size for a total of 116.0 ESDU's and that construction plans be submitted for review and approval. Please refer to Appendix IV - Agency Comment Letters.

The applicant understands the limitation on capacity for the project and will submit construction drawings for DPP review and approval. The capacity approved is as follows.

- Phase I - 29,120 gpd average flow.
- Phase II - 37,120 gpd average flow.

Based on the calculated peak flows, each phase will require an 8" pipe connection. The applicant is proposing to make the following sewer connections:

- Phase I - General Industry category connection of approximately 489,148 square feet.

Final Environmental Assessment - Ewa Industrial Park

- Phase II - General Industry category connection of approximately 523,600 square feet.
- Anticipated connection points will be at Kapolei Interceptor Sewer System SMH #4 and SMH #6.

Based on a memorandum from the Department of Environmental Services (DES) dated October 12, 2007, commenting on the Draft EA, the applicant agrees to work with DES on the following:

- a. Their purchase of a strip of land between 25 feet and 35 feet within an existing City sewer easement on the applicant's property to accommodate future construction on the existing Honouliuli Wastewater Treatment Plant property (WWTP);
- b. The applicant's purchase of a small piece of the City's land at the northeast corner of the WWTP to accommodate a proposed access drive for the Ewa Industrial Park;
- c. Their request that the Coral Creek Golf Course accommodate drainage from the WWTP that will be directed onto our property and included with our flows directed to the golf course;
- d. Provision of a disclosure statement in our sales documents on the potential for noise and odor from the adjacent WWTP and further disclosure provided in the

Final Environmental Assessment - Ewa Industrial Park

CC&R's, the covenants, conditions and restrictions on development within the industrial park;

- e. Provision of a buffer area with interior access drives and/or open parking along the WWTP boundary; and
- f. Provision of landscaping with trees and planting along the WWTP boundary.

Please refer to Appendix IV - Agency Comment Letters.

5. Drainage

Gray Hong Nojima & Associates letter to Mr. Howard S. Kihune, President of Landtec, Inc., dated January 5, 2007 states in part as follows:

“.....The project site is part of the Kaloi Gulch Watershed and under existing conditions sheet-flows into the Coral Creek Golf Course. The total Kaloi Gulch Watershed is approximately 11 square miles in area with a flow of approximately 11,500 cfs as the ultimate flow at the bottom of the Kaloi Gulch Watershed.

Based upon preliminary hydrologic calculations, the Ewa Industrial Park will have a peak 50-year flow of approximately 264 cfs and water quality volume of approximately 4.1 acre-feet.

Pursuant to review of drainage reports and consultation with the engineering consultants for the original Coral Creek Golf Course, the golf course was

Final Environmental Assessment - Ewa Industrial Park

designed to handle the Kaloι Gulch peak flows as well as provide storage and water quality volumes in the various lakes. It is therefore proposed to maintain the existing drainage pattern to the two deep lakes with in the Coral Creek Golf Course adjacent to the Ewa Industrial Park. However, in lieu of direct point discharges to the golf course and to minimize overland sheet-flow, it is proposed that the storm runoff from the Ewa Industrial Park site connect directly to the two lakes by an underground drainage pipe system. The underground system could be either direct bury or possible micro-tunneling”.

Coral Creek Golf Course’s letter to Ewa Industrial Park, LLC, dated April 16, 2007 states in part as follows:

“.....this is to confirm that Coral Creek Golf, Inc. will not oppose the proposed drainage draining into our property.” Please refer to Appendix IX - Drainage.

Based on comments received in a letter from the Department of Health on the Draft EA dated September 25, 2007, the applicant provided the following response related to drainage:

- a. The project will ultimately discharge onsite storm water to the existing retention basin located in the adjacent golf course. Additionally, the project will apply best

Final Environmental Assessment - Ewa Industrial Park

management practices for control of runoff during construction.

The requirements of HAR, Section 11-54-1.1, Anti-degradation Policy, Section 11-54-3, Designated Uses, and Sections 11-54-4 through 11-54-8, Water Quality Criteria will be met.

- b. The required NPDES/NOI permit application will be submitted prior to the commencement of construction.
- c. A copy of the NPDES/NOI permit application will be submitted to the State Department of Land and Natural Resources SHPD office for their review prior to the commencement of construction.
- d. An Erosion Control Plan will be prepared in conjunction with the NPDES/NOI permit application.
- e. The applicant will update a Storm Water Pollution Control Plan to include the planned expansion and altered drainage system for submittal to your office.
- f. The applicant is aware that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards.

Please refer to Appendix IV - Agency Comment Letters.

6. Flood Plain Management

According to the Flood Insurance Rate Map (FIRM), Panel 310 of 395, dated November 20, 2000 a small portion of the project site lies within Zone X, an area determined to be outside the 0.2% annual chance floodplain. The remaining portion of the project lies within Zone D, an area in which flood hazards are undetermined, but possible.

Please refer to Appendix X - Flood Insurance Rate Map (FIRM).

7. Solid Waste Disposal

The solid waste generated by the proposed renovation and expansion will be collected by a private firm and will not impact municipal refuse services.

Based on comments received in a letter from the Department of Health on the Draft EA dated September 25, 2007, the applicant will develop a solid waste management plan that encourages recycling and use of recycled materials. Please refer to Appendix IV - Agency Comment Letters.

8. Schools

The proposed development will not impact enrollment at the local school system.

9. Parks

The proposed development will not affect the existing parks or recreation areas in the surrounding neighborhood.

10. Police

The development site will be serviced by patrol officers from District 8, the Kapolei Police Station located at 1100 Kamokila Boulevard in Kapolei. The police station is located approximately 5.70 miles from the project site with a response time of approximately 12 minutes.

The Honolulu Police Department, in a memorandum dated August 16, 2007 commenting on the Draft EA, stated that “This project should have no significant impact on the facilities or operations of the Honolulu Police Department.

Please refer to Appendix IV - Agency Comment Letters.

11. Fire

The Ewa Fire Department, Station No. 24 will provide fire protection service to the project area. Response time will be approximately 10 minutes.

Based on the Honolulu Fire Department’s (HFD) comments of the Draft EA provided in a letter dated August 22, 2007, the applicant will provide a fire apparatus access road for every facility, building, or portion of a building when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet from a fire apparatus access road as measured by an approved route around the exterior of the building or facility; meet BWS requirements for fire flow; provide fire hydrants as required;

Final Environmental Assessment - Ewa Industrial Park

and submit civil drawings to the HFD for review and approval. Please refer to Appendix IV - Agency Comment Letters.

12. Utilities

a. Electric

The Hawaiian Electric Company (HECO) has existing power lines serving this area and the applicant will coordinate development to ensure that the power lines will be adequate to support the proposed Industrial Park or work with HECO to insure adequate electrical service for the proposed development.

b. Telephone

Hawaiian TelCom has existing utility service lines in the area. It is expected that these existing lines will be adequate to service this proposed industrial development.

E. ENVIRONMENTAL IMPACTS

1. Historical

A pre-consultation letter was sent to the State Historic Preservation Division of the Department of Land and Natural Resources on September 20, 2006 requesting comments.

A response letter from the State Historic Preservation Division of the Department of Land and Natural Resources, dated November 29, 2006, stated in part as follows:

Final Environmental Assessment - Ewa Industrial Park

“..... Records maintained at the State Historic Preservation Office indicate that the area of potential effect (APE) was previously under intense sugar cane cultivation, making it unlikely that any historically significant cultural properties are present. However, the Oahu Railway and Land Co. Right-of-way (OR&L ROW), listed on the National Register of Historic Places, (SIHP No. 50-80-12-9714) lies directly adjacent to the north of the APE and we are unable to comment on the impact the proposed undertaking will have on the OR&L ROW based on the provided documents.”

A pre-consultation letter was sent to the State of Hawaii, Office of Hawaiian Affairs dated September 20, 2006 requesting comments.

A response letter from the State of Hawaii, Office of Hawaiian Affairs, dated October 11, 2006, stated in part as follows:

“.....In the last decade, unmarked burial sites have been found in the area of St. Francis West, West Loch Estates, Old Fort Weaver Road, Kalaeloa, One’ula Beach, Campbell Estate, Ko’Olina and other areas in the vicinity of this project.

Final Environmental Assessment - Ewa Industrial Park

The depth of grading activities and the likelihood of adversely impacting any sub-surface cultural sites or deposits is contingent upon understanding the original surface grade as it may have existed prior to agricultural activities such as sugarcane.

Native Hawaiian burial sites have been found just on and under the surface to depths of eight or nine feet depending upon the nature of the terrain. Further more, the nature of documented internments in the 'Ewa area (stone pits, sinkholes, crypts, etc.) could lead to the survival of these sites despite intensive agricultural activities on the surface.”

On September 25, 2007, the Office of Hawaiian Affairs sent a letter providing comments on our Draft EA for the proposed Ewa Industrial Park. Our response to this letter is provided in the Archaeological subsection IV.E.3. of this Final EA.

Please refer to Appendix IV - Agency Comment Letters.

2. Cultural

Cultural Surveys Hawaii Incorporated prepared a cultural impact evaluation for the Ewa Industrial Park project. The cultural impact assessment is titled “Cultural Impact Assessment Report for the Ewa Industrial Park Project,

Final Environmental Assessment - Ewa Industrial Park

Honouliuli Ahupua'a, 'Ewa District, O'ahu Island", dated January 2007. Please refer to Appendix VII - Cultural Impact Assessment.

The Cultural Impact Assessment "Summary" states:

"Honouliuli is associated with a number of legendary accounts. Many of these concern the actions of gods or demi-gods such as Kane, Kanaloa, Maui, Kamapua'a, the reptile deity (mo'o) Maunauna, the shark deity Ka'ahupahau, and the demigod hero Palila."

"The project area lies just back from the coast, on the extensive 'Ewa limestone plain. Based on Honouliuli settlement patterns and archaeological investigation of the ahupua'a, the 'Ewa plain was probably never permanently inhabited. It could have provided temporary habitation for gatherers and fisherman traveling to the coast. A relatively barren and waterless area, it nonetheless may have been occasionally traversed, as the project area is situated between the relatively well-watered uplands and the makai ocean resources. Based on ethnographic accounts and past archaeological investigations in the project area and its vicinity, limestone sink holes on the 'Ewa Plain were used for agriculture and burial internment, with the largest sink holes used for temporary shelter. With the

Final Environmental Assessment - Ewa Industrial Park

spread of Western land use in the 19th century, the project area was used for ranching first, then housing and pig farming. In general, the project area lies in a region that would have been less than bountiful, and therefore sparsely utilized, even in pre-contact times.”

“Hawaiian organizations, government agencies, community members, and cultural and lineal descendants with ties to Honouliuli were contacted to: (1) identify potentially knowledgeable individuals with cultural expertise and knowledge of the project area and its surrounding, and (2) identify cultural concerns and potential impact within the project area. An effort was made to locate community members with ties to Honouliuli and neighboring *ahupua'a* who live or had lived in the region or who, in the past, used the area for traditional and cultural purposes. The people contacted for this assessment were not aware of any on-going cultural practices, archaeological sites, or trails within the project area. However, Nettie Tiffany and Arline Eaton mentioned that the 'Ewa plains is a well-known place for sinkhole burials. Most of the people contacted mentioned that pig farming, military and ranching activities, heavily altered the project area. Also on the east end of the project are

Final Environmental Assessment - Ewa Industrial Park

there were approximately eight houses that OR & L owned and used to house their workers.”

“Although early historic maps show the project area was between two important *mauka-makai* trails, this use for transportation did not leave any surface or sub-surface remains. The post-contact use of the area for habitation or military activities has not left any surface trace. The extensive ground disturbance observed in the project area, including cleared areas for pastures and paddocks in the central and western portions of the project area, and trash/rock/concrete piles in the eastern area, indicates that if there were once any pre-contact or any historic (more than 50 years ago) surface features, these have probably been destroyed. Based on the evidence gathered for this evaluation, no contemporary or continuing cultural practices were discovered within the project area.”

“It should be noted that subsurface properties associated with former traditional Hawaiian activities in the project area, such as artifacts, cultural layers, and burials may be present despite the decades of modern activities. As a precautionary measure, CSH recommends that personnel involved in the ‘Ewa Industrial Park development project be informed of the possibility of in

Final Environmental Assessment - Ewa Industrial Park

advertent cultural finds, and should be made aware of the appropriate notification measures to follow”.

The applicant will direct contractors involved in earthwork that, “in the unlikely event that previously unidentified subsurface historic properties are encountered by project construction, the project proponents should immediately stop work and contact SHPD’s O’ahu Office (Tel. (808) 692-8015)”.

3. Archaeological Resources

Cultural Surveys Hawaii, Inc. prepared an archaeological assessment titled Archaeological Assessment of the Ewa Industrial Park Project, dated January 2007. Please refer to Appendix XI - Archaeological Assessment of the Ewa Industrial Park Project.

The Archaeological Assessment Report, Section 6 Summary and Interpretation, states as follows:

“Although early historic maps show the project area was between two important mauka-makai trails, this use for transportation may not have left any surface or sub-surface remains. The post-contact use for any type of habitation or military use also has not left any surface trace. The extensive ground disturbance seen in the project area, including cleared areas for pastures and paddocks in the central and western area, and trash/rock/concrete piles in the eastern area, indicate that

Final Environmental Assessment - Ewa Industrial Park

if there were once any pre-contact or any non-recent (more than 50 years ago) post-contact subsurface features, these have probably been destroyed.”

“In the absence of any sites, in the vocabulary of the state review agency (the State Historic Preservation Division), this study is being called an “Archaeological Assessment.” In conclusion, no evidence for any pre-or-post-contact use (except for livestock management) could be found in the project area, and it is unlikely that construction in the project area will negatively impact any intact subsurface features or deposits.”

“Based on the current investigation, there are no historic properties recommended Hawai’i Register-eligible within the project’s APE. Accordingly, based on the available information, it is recommended that the proposed project will have no effect on significant (i.e. Hawai’i Register-eligible) historic properties. A project specific effect determination of “no historic properties affected” is warranted for the project.”

“No further cultural resource management work is recommended for the project. In the unlikely event that previously unidentified subsurface historic properties are encountered by project construction, the project proponents should immediately stop work in the vicinity

Final Environmental Assessment - Ewa Industrial Park

and contact SHPD's O'ahu Office (Tel. (808) 692-8015).”

On September 25, 2007, the Office of Hawaiian Affairs sent a letter providing comments on our Draft EA for the proposed Ewa Industrial Park. Our response to this is provided as follows:

- a. During construction of the proposed Ewa Industrial Development Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules will be strictly followed. Should any significant cultural deposits or human skeletal remains be encountered, work will stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) will be contacted.
- b. We understand and respect your concern regarding the possible disturbance of previously unidentified Native Hawaiian burials on the subject property. The Cultural Impact Assessment Report prepared by Cultural Surveys Hawai'i, Inc for this project, dated January 2007, states in their Management Summary, Section on Cultural Impact Recommendations, page iii as follows:

“Based on the evidence gathered for this evaluation, no contemporary or continuing cultural practices were discovered within the project area. However, two study

Final Environmental Assessment - Ewa Industrial Park

participants mentioned that the ‘Ewa plains is a well-known place for sinkhole burials.”

“It should be noted that subsurface properties associated with former traditional Hawaiian activities in the project area, such as artifacts, cultural layers, and burials may be present despite the decades of modern activities. As a precautionary measure, CSH recommends that personnel involved in the Ewa Industrial Park development project be informed of the possibility of inadvertent cultural finds, and should be made aware of the appropriate notification measures to follow. In the unlikely event that previously unidentified subsurface historic properties are encountered by project construction, the project proponents should immediately stop work and contact SHPD’s Oahu Office (Tel. (808) 692-8015).”

Again, should significant cultural deposits or human skeletal remains, including Native Hawaiian burials be discovered or disturbed on the subject property the contractor will stop work and notify the State Historic Preservation Division (SHPD/DLNR) immediately.

Please refer to Appendix IV - Agency Comment Letters.

4. Natural Resources

a. Water Resources

No known wells exist on the subject property.

b. Flood Plain Management

According to the Flood Insurance Rate Map (FIRM), Panel 310 of 395, dated November 20, 2000 a small portion of the project site lies within Zone X, an area determined to be outside the 0.2% annual chance floodplain. The remaining portion of the project lies within Zone D, an area in which flood hazards are undetermined, but possible.

c. Wetlands Protection

LeGrande Biological Survey Inc. conducted a botanical resources assessment for the applicant, dated August 8, 2006. The following is quoted in part from the "Discussion" section:

".....No wetlands were encountered during this survey. None of the three essential criteria for defining a federally recognized wetland were present within the study site. Those being; hydrophytic vegetation, hydric soils, and wetland hydrology."

d. Coastal Zone Management

The project site is within a Coastal Zone Management Area being approximately 8,800 linear feet from the shoreline, but not within the Special Management Area of the island of Oahu. As such, a Special Management Area Use Permit will not be required. It is not in a forest reserve area and is not on federally owned property.

The project site's distance from the shoreline (being over 1.5 miles away), will minimize this development's impact to the Coastal Zone Management Area. It will not affect coastal and ocean resources, access to the shoreline and ocean recreation areas.

e. Unique Natural Features

The project site is relatively flat with no known unique natural features such as wetlands nor threatened or endangered wildlife species.

f. Flora

LeGrande Biological Surveys Inc. has prepared a botanical assessment for the proposed Ewa Industrial Park. The botanical assessment is titled "Botanical Resources Assessment for the Ewa Industrial Park Project, Honouliuli, Oahu, dated August 8, 2006.

Final Environmental Assessment - Ewa Industrial Park

Please refer to Appendix XII - Botanical Resources Assessment Study.

The Botanical Assessment “Discussion and Recommendation” section states as follows:

“None of the plant species observed on the project site is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service, 1999a, 1999b, 2004; Wagner et.al., 1999). A concerted effort was made in surveying the *Abutilon menziesii* within the subject property. The present known locations for this endangered Hawaiian plant are clustered on the south-west side of Palehua Road outside the boundaries of the study site. No plants of *A. Menziesii* were observed during the survey.

No wetlands were encountered during this survey. None of the three essential criteria for defining a federally recognized wetland were present within the study site. Those being; hydrophytic vegetation, hydric soils, and wetland hydrology.

The proposed development of the Ewa Industrial Park is not expected to have significant

Final Environmental Assessment - Ewa Industrial Park

negative impacts on the botanical resources of the site or the general region.”

g. Fauna

Environmental Consultant, Phillip L. Bruner prepared a avifaunal and feral mammal field survey for the proposed Ewa Industrial Park in Ewa, Oahu. The survey is titled “Avifaunal and Feral Mammal Field Survey for the Proposed Ewa Industrial Park in Ewa, Oahu. Please Refer to Appendix XIII - Avifaunal and Feral Mammal Field Survey.

The faunal (bird and Mammal) field survey “Discussion” section and “Conclusion” section states as follows:

“Birds:

Table One lists the alien (introduced) species recorded on the survey. This list does not include all the species that potentially could occur in the area but does account for the more common species that would be expected (Hawaii Audubon Society 2005, Bruner 2004, 2005). No native land birds were detected. The only species currently known from the area around this site is the Hawaiian Owl or Pueo (*Asio flammeus sandwichensis*) (Bruner 2004). This species is

listed by the State of Hawaii as endangered on Oahu. Pueo forage in a variety of habitats including forests, parklands and agricultural fields (Pratt et al. 1987, Hawaii Audubon Society 2005). No migratory shorebirds were observed on the survey. The only migrant that would be expected to “winter” in the open patches on the site is the Pacific Golden-Plover or Kolea (*Pluvialis fulva*). This species is the most abundant and well studied migratory shorebird in Hawaii (Johnson et al. 1981, 1989, 1993, 2001). They migrate to their arctic breeding grounds at the end of April and return to Hawaii in August. Kolea are not listed as threatened or endangered.

Mammals:

The only feral mammal seen on the survey was the ubiquitous Small Indian Mongoose (*Herpestes auropunctatus*). One was seen on the east end of the property. The endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) was not found. They are relatively rare on Oahu (Kepler and Scott 1990). This species roosts solitarily in trees. They forage for flying insects as dusk and as well as after dark using

echolocation (Tomich 1986). The chances of seeing a bat on Oahu are low due to their small numbers. They forage over native forest, disturbed habitats (fields and agricultural lands) and in urban settings (Bruner 2004, 2005).

Conclusion:

The site of the proposed Ewa Industrial Park is mostly disturbed by past and present human activity. The endangered (State of Hawaii listed) Pueo have been seen makai of the Honouliuli Sewage Treatment Plan as recently as 2004 (Bruner 2005) but would likely find this proposed development site a relatively unprofitable foraging ground. Much of the site is cleared and better foraging habitat can be found on nearby Barbers Point property. The absence of the migratory Kolea was not unexpected since they are in the arctic on their breeding grounds at this time of year. A few will “over-summer” (fail to migrate) but none were observed at this site. Alien birds and mammals found on the survey are those commonly seen in similar habitats in this area of Oahu. The endangered Hawaiian Hoary Bat was

Final Environmental Assessment - Ewa Industrial Park

not observed and I know of no published records for this species at this site.”

h. Agricultural Lands

The project site is zoned AG-1 Restricted Agricultural District. The Ewa Development Plan Urban Land Use Map is a conceptual plan that provides a vision on land uses. The vision for this general area is for industrial use, but is not site specific. The proposed development is consistent with the vision of the Ewa Development Plan. The State Land Use Map designates this area as ‘Urban’ for 23.3 acres of the property, and ‘Agricultural’ for 25.095 acres of the overall 48.395 acres. The property was earlier used for the growing of sugar cane, however, in recent time this area of the island has been highly developed and agricultural uses have been phased out. Immediately makai of the project site is the Honouliuli Sewage Treatment Plant. Immediately mauka of the proposed industrial park is the residential development of Ewa Villages. Kokohead of the project site is the Coral Creek Golf Course and to its ewa side is the OR&L Museum.

F. TOPOGRAPHY

The site is relatively level in the southern portion with elevations generally ranging from about +33 to +37 feet, while

elevations in the northern area typically range from about +35 to +47 feet. A heavily vegetated mound, ranging from about 3 to 11 feet in height with dimensions of approximately 250 to 150 feet, is located just east of the fenced area. Several mounds of cobbles and boulders are located in the western portion of the site.

G. SOILS

The U.S. Department of Agriculture Soil Conservation Service Soil Survey Report for the Island of Oahu indicates that the predominant surface soil type over the project site is MnC, with areas of EmA, HxA, and WkA.

Mamala Series - This series consists of shallow, well-drained soils along the coastal plains on the islands of Oahu and Kauai. These soils formed in alluvium deposits over coral limestone and consolidated calcareous sand. They are nearly level to moderately sloping. Elevations range from nearly sea level to 100 feet on Oahu but extend to 850 feet on Kauai. The annual rainfall amounts to 18 to 25 inches most of which occurs between November and April. The mean annual soil temperature is 74 degrees F. Mamala soils are geographically associated with Ewa, Honouliuli, and Lualualei soils on Oahu, and with Koloa and Nohili soils on Kauai.

These soils are used for sugarcane, truck crops, orchards and pasture. The natural vegetation consists of kiawe, koa haole, bristly foxtail, and swollen fingergrass.

Final Environmental Assessment - Ewa Industrial Park

(MnC) - Mamala stoney silty clay loam, 0 to 12 percent slopes. The slope range is this soil is 0 to 12 percent, but in most places the slope does not exceed 6 percent. Stones mostly coral rock fragments are common in the surface layer and in the profile. Included in mapping were areas of Ewa soils. Also included were nonstony areas and areas where the slope is as much as 20 percent.

In a representative profile the surface layer is dark reddish-brown stony silty clay loam about 8 inches thick. The subsoil is dark reddish-brown silty clay loam about 11 inches thick. The soil is neutral to mildly alkaline.

Permeability is moderate. Runoff is very slow to medium, and the erosion hazard is slight to moderate. The available water capacity is about 2.2 inches per foot in the surface layer and 1.9 inches per foot in the subsoil. Roots are affected by the coral limestone and consolidated sand. The stones hinder, but do not prevent, cultivation.

Ewa Series - This series consists of well-drained soils in basins and on alluvial fans on the islands of Maui and Oahu. These soils developed in alluvium derived from basic igneous rock. They are nearly level to moderately sloping. Elevations range from near sea level to 150 feet. The annual rainfall amounts to 10 to 30 inches. Most of it occurs between November and April. The mean annual soil temperature is 73

Final Environmental Assessment - Ewa Industrial Park

degrees F. Ewa soils are geographically associated with Honouliuli, Mamala, Molokia, Pulehu, and Waiakoa soils.

(EmA) - Ewa silty loam, moderately shallow, 0 to 2 percent slopes. This soil has a profile like that of Ewa silty clay loam, 3 to 6 percent slopes, except that the depth to coral limestone is 20 to 50 inches. Runoff is very slow, and the erosion hazard is no more than slight. Included in mapping were a few small areas less than 20 inches deep.

Honouliuli Series - This series consists of well-drained soils on coastal plains on the island of Oahu in the Ewa area. These soils developed in alluvium derived from basic igneous material. They are nearly level and gently sloping. Elevations range from 15 to 125 feet. The annual rainfall amounts to 18 to 30 inches and annual soil temperature is 74 degrees F. Honouliuli soils are geographically associated with Ewa, Lualualei, Mamala, and Waialua soils.

(HxA) - Honouliuli clay, 0 to 2 percent slopes. This soils occurs in the lowlands along the coastal plains. Included in mapping were small areas off fine-textured allivial soils that have a stony subsoil. Also included were small areas of shallow, red, friable soils that are underlain by reef limestone.

In a representative profile the soil is dark reddish-brown, very sticky and very plastic clay throughout. The surface layer is about 15 inches thick. The subsoil and substratum have sub-

Final Environmental Assessment - Ewa Industrial Park

angular blocky structure, and they have common to many slicken-sides. The soil is neutral to mildly alkaline.

Permeability is moderately slow. Runoff is slow, and the erosion hazard is not more than slight. The available water capacity is about 1.8 inches per foot of soil. In places roots penetrate to a depth of 5 feet or more. Workability is slightly difficult because of the very sticky and very plastic clay. The shrink-swell potential is high.

Waialua Series - This series consists of moderately well drained soils on alluvial fans on the island of Oahu. These soils developed in alluvium weathered from basic igneous rock. They are nearly level to steep. Elevations range from 10 to 100 feet. The annual rainfall amount to 25 to 50 inches; most of it occurs between and April. The mean annual soil temperature is 73 degrees F. Waialua soils are geographically associated with Honouliuli, Kaena, and Kawaihapai soils.

(WkA) - Waialua silty clay, 0 to 3 percent slopes - This soil is on smooth coastal plains. Included in mapping were small areas of Honouliuli, Kaena, and Kawaihapai soils. Also included were small areas that are gravelly.

In a representative profile the surface layer is dark reddish-brown silty clay about 12 inches thick. The subsoil, about 26 inches thick, is dark reddish-brown and reddish-brown silty clay that has subangular blocky structure. The

Final Environmental Assessment - Ewa Industrial Park

substratum is dark reddish-brown, mottled silty clay. The soil is neutral in the surface layer and slightly acid in the subsoil.

Permeability is moderate. Runoff is slow, and the erosion hazard is no more than slight. The available water capacity is about 1.8 inches per foot in the surface layer and 1.6 inches per foot in the subsoil. In places roots penetrate to a depth of 5 feet or more.

H. NOISE

D.L. Adams Associates, Ltd. conducted a noise study dated November 2006 and titled: "Environmental Noise Assessment Report Ewa Industrial Park". Please refer to Appendix VI - Environmental Noise Assessment. The Executive Summary states as follows:

"1.1 The Ewa Industrial Park development is approximately 48.4 acres of currently vacant land located between Geiger Road and Renton Road in the Ewa District of Oahu. The project site is bounded on the east by the Coral Creek Golf Course and on the north by the Oahu Railway & Land (OR&L) tracks. The south side of the site is bordered by Geiger Road, the Honouliuli Wastewater Treatment Plant (WWTP), and the Kalaeloa Redevelopment Area. The project is planned for development in two phases with light industrial uses to include light manufacturing, warehousing, distribution, and self-storage facilities. The project is also expected

Final Environmental Assessment - Ewa Industrial Park

to include a small amount of retail space such as a convenience store.”

“1.2 The existing sound levels are relatively dynamic and depend significantly on the vehicular traffic patterns and industrial activities in the area. The hourly Leq noise levels generally range from 50 dBA to 65 dBA during the daytime hours and from 45 dBA to 56 dBA during the nighttime hours. The average calculated day-night level, Ldn, was 59 dBA for the measurement period. Dominant noise sources include vehicular traffic noise from Roosevelt Road and mechanical noise from the nearby Honouliuli Wastewater Treatment Plant.”

“1.3 During the project construction, the dominant noise sources will probably be earth moving equipment, such as bulldozers and diesel powered trucks. Noise from construction activities will occur on the project site. Noise from construction activities should be short term and must comply with State of Hawaii Community noise Control Rules and a construction noise permit issued by the Department of Health.”

“1.4 The Ewa Industrial Park development will incorporate mechanical equipment that is typical for commercial buildings and light industrial lands. Noise from this equipment must meet the State DOH maximum

Final Environmental Assessment - Ewa Industrial Park

permissible noise limits at the property line. For industrial areas adjacent to other industrial, commercial and residential areas, the noise limits are 70 dBA during the day and night.”

“1.5 The vehicular traffic noise analysis shows that noise levels are expected to increase (with one exception) in the future by 1 to 5 dB without the Ewa Industrial Park project. Traffic noise levels along Geiger Road are expected to decrease by less than 2 dB, possibly due to the completion of the Kapolei Parkway extension.

Vehicular traffic noise levels are not expected to increase by a significant amount due to the project. Noise levels within the project site during peak traffic hours are expected to be below the FHWA/DOT maximum noise limit of 72 dBA due to traffic from the adjacent Roosevelt Road.”

“1.6 The Ewa Industrial Park project site is outside of the 60 Ldn noise contour of the Kalaeloa Airport. Therefore, the project will not be impacted by aircraft noise.”

Chapter 4.2 - Noise Measurement Locations states as follows:

“4.4 Kalaeloa Airport and Honolulu International Airport Noise Contours

Final Environmental Assessment - Ewa Industrial Park

The project is in the vicinity of the Kalaeloa Airport and several miles west of Honolulu International Airport. Therefore, the project site was assessed for aircraft noise using airport noise contour maps. The Kalaeloa Master Plan (Reference 7) includes year 2020 projections of airport operations and noise contour maps for airport alternates. Also included in the airport noise contour maps is the affect of the Honolulu International Airport operations (Reference 8). A complete description of the Kalaeloa Airport alternates can be found in the Kalaeloa Master Plan. The Ewa Industrial Park project site lies between the Ldn 55 and Ldn 60 noise contours for both airports based on year 2020 aircraft noise projections.”

Short term noise impacts at construction sites are a normal result of construction activity. The State Department of Health administers rules and regulations relating to the hours during which construction is permitted and the noise levels permitted during those hours. The contractor will be required to apply for a permit from the State Department of Health should noise from construction activities exceed regulatory limits. The contractor will abide by the noise regulations incorporated into the permit.

I. AIR QUALITY

J. W. Morrow, Environmental Management Consultant conducted an air quality study dated May 4, 2007 and titled: “Air

Final Environmental Assessment - Ewa Industrial Park

Quality Impact Report (AQIR), Ewa Industrial Park, Kapolei, Hawaii". Please refer to Appendix V - Air Quality Report. The Conclusion and Mitigation section states as follows:

“7.1 Short-Term Impacts. Since, as noted in Section 4, the project area is considered to be “semi-arid” by Thornwaite’s climatic classification system with a P/E index lower than that associated with the EPA fugitive dust emission factor, there appears to be an increased potential for fugitive dust. It will therefore be important to employ adequate dust control measures during the construction period, particularly during the drier summer months. Dust control could be accomplished through frequent watering of unpaved roadways and areas of exposed soil. The EPA estimates that twice daily watering can reduce fugitive dust emissions by as much as 50%. The soonest possible paving of roadways and parking areas and landscaping of bare areas will also help.

Short-term air quality impacts due to offsite activities supporting the proposed development, i.e., concrete and asphalt production, appear to be *de minimus* due in large part to the high removal of control devices typically found on such production facilities. Furthermore, any emissions will be strictly regulated by the Department of Health permit which each batch plant must have in order to operate.”

Final Environmental Assessment - Ewa Industrial Park

The applicant will employ adequate dust control measures during the construction period, particularly during the drier summer months. Dust control will be accomplished through at least twice-daily watering of unpaved roadways and areas of exposed soil. The earliest possible paving of roadways and landscaping of bare soil areas will also be done. Dust screens will be provided to reduce impacts on adjacent buildings and other areas of human activity in this area of Ewa. These dust controls will serve to mitigate concerns raised in a comment letter from the Department of Health on the Draft EA dated September 25, 2007. Please refer to Appendix IV - Agency Comment Letters.

J. VISUAL IMPACT

The proposed industrial development will not affect any important view planes in the Ewa area, and when re-zoned and developed will not exceed the 60-foot height limit in the I-2 Industrial zoning designation. On its mauka side structures will be setback 40-feet from the adjacent OR&L historic railway lines. The industrial development will act as a visual and physical buffer between the existing Honouliuli Sewage Treatment Plant and the surrounding residential developments. The project area will be fully landscaped, and will include a 6-foot high, 8 inch thick tilt-up concrete wall surrounding a portion of the property. The exterior side concrete walls will be covered with bougainvillea, natal plums or creeping fig to minimize the threat of graffiti and to enhance and soften the visual

Final Environmental Assessment - Ewa Industrial Park

appearance of the solid walls on the surrounding community. Along the golf course area the applicant is proposing a chain-link fence and again, it will be landscaped with bougainvilleas, creeping fig or charisa plants. All of these design features will aide in reducing the visual impact of the proposed industrial development to the surrounding community.

K. HAZARDS

The development site does not contain any known nuisances, airport clear zones, or other features which would jeopardize its development. However, based on comments received in a letter from the Department of Health on the Draft EA dated September 25, 2007, the applicant provided the following response related to hazards:

1. The applicant is aware of the Hazard Evaluation & Emergency Response Office (HEER) requirements. Testing and evaluation of the project site to comply with the requirements of the HEER office with respect to former use of the site for agricultural production and potential impacts of residual pesticides related to that use will be conducted.
2. Should demolition activities involve asbestos, the applicant will contact the Asbestos Abatement Office in the Noise, Radiation and Indoor Air Quality Branch at 586-5800.

Please refer to Appendix IV - Agency Comment Letters.

V. MAJOR IMPACTS AND ALTERNATIVES CONSIDERED

A. NO ACTION

This alternative was considered and rejected. The property was earlier used for the growing of sugar cane, however, in recent times this area of the island has been highly developed and agricultural use has been phased out. Kiawe scrub and weedy plant species dominate the project area. To leave the property in agricultural use would be contrary to the intent and vision of the Ewa Development Plan Urban Land Use Map. The Ewa Development Plan Urban Land Use Map is a conceptual plan that provides a vision on land uses. The vision for this general area is for industrial use, but is not site specific. The proposed development is consistent with the vision of the Ewa Development Plan. The State Land Use Map designates a portion of this property (Phase I) as Urban.

B. PROPOSED INDUSTRIAL PARK, WITH I-2 INTENSIVE INDUSTRIAL DISTRICT ZONING

Collectively the proposed industrial development will provide employment; provide the people of Ewa and nearby residents an opportunity to live, work and play in the Ewa area of Oahu; and is expected to reduce the need for residents in the surrounding area and along the travel corridor into town to travel in the peak hour direction towards downtown Honolulu to work.

Final Environmental Assessment - Ewa Industrial Park

The applicant has planned the Ewa Industrial Park as an industrial condominium development. Through the CCR's the applicant will prohibit owners/tenants from operating petroleum processing plants, explosives and chemical manufacturing or storage plants, agricultural processing plants, salvage yards, waste disposal plants, composting plants, recycling plants, and demolition plants.

SMS Research and Marketing Services conducted a market study dated June 2007. The study states in part as follows:

“.....If the proposed industrial development attracts tenants similar to other industrial parks in the area, SMS estimates between 2,340 and 2,700 new jobs will be added in Ewa. If the Development attracts only smaller businesses, then 520 to 600 new jobs will be added to the area. More likely the projected project will attract a mix, therefore an average between 1,430 and 1,650 new jobs are likely to be available to the workforce in the Ewa Area.”

The I-2 Intensive Industrial District is needed because it will allow repair establishments major (not permitted in the I-1 Limited Industrial District or the IMX-1 Industrial-Commercial Mixed Use District) which is a critical use for the success of the industrial park. Repair establishments major would include many of the industrial users in Kakaako that are relocating due to increased residential and mixed use developments that are implementing the long range plan for Kakaako. These users include furniture repair, industrial machinery

Final Environmental Assessment - Ewa Industrial Park

and heavy equipment repair, bus and truck repair, and repair of vehicle (all types) body and fender, and straightening of frame and body parts.

Another use that would be appropriate in this industrial park is animal products processing (permitted under I-2 zoning but not under I-1 and IMX-1), given its proximity to the Waianae farmlands that includes many of the islands piggeries and also cattle farms. Processing plants at this location could save travel time for farmers/ranchers in getting their product processed and would also be near Kalaeloa Harbor which could support shipping of processed meats to the outer islands. The site is also on the way to the Honolulu International Airport and Honolulu Harbor and would result in an efficient routing plan for delivery to the processing plant and continuing on to these major transportation terminals.

Given the industrial parks close proximity to Ewa Marina (under construction) and the existing Ko Olina Marina, another appropriate use would be maritime-related vocational training, sales, construction, maintenance and repairing (permitted under I-2 zoning but not under I-1 and IMX-1). This site provides a convenient location for industrial uses that would support the marinas and boating industries.

Although the I-1 District's 40-foot height limit would cover the necessary height for our standard designed warehouse module which has a 36-foot height for a one-story warehouse with mezzanine office

space, the proposed self storage facility would probably be developed with a 50-foot height, for a four to five-story facility. There may be other users that may need a larger more custom designed facility that would also require a 40 to 50-foot height limit. We discussed the 50-foot height limit at one neighborhood board presentation and the 36-foot height of our proposed warehouse module at another.

This I-2 zoning is the applicant's preferred alternative since it provides the array of uses that are expected to be included in the proposed industrial park, including some critical uses not permitted under I-1 or IMX-1 zoning.

C. PROPOSED INDUSTRIAL PARK, WITH I-1 LIMITED INDUSTRIAL DISTRICT ZONING

Collectively the proposed industrial development will provide employment; provide the people of Ewa and nearby residents an opportunity to live, work and play in the Ewa area of Oahu; and is expected to reduce the need for residents in the surrounding area and along the travel corridor into town to travel in the peak hour direction towards downtown Honolulu to work.

With this zoning district certain uses that were to be restricted in the conditions, covenants and restrictions for the industrial park anyway would not be permitted within the I-1 Limited Industrial Zoning District.

The concern with this I-1 zoning district is that the following uses would not be permitted:

Final Environmental Assessment - Ewa Industrial Park

1. Animal products processing
2. Sawmills (if lumber yards with milling machines are permitted then restriction on sawmills will not be a problem)
3. Maritime-related vocational training, sales, construction, maintenance and repairing
4. Repair establishments, major
5. Heliports
6. Truck terminals

These uses are not expected to have a significant impact on the surrounding uses and some are deemed important and necessary for a successful industrial park providing industrial services in support of the surrounding residential communities and the nearby Ewa Marina and Resort area.

Repair establishments major is a critical use for the success of the industrial park. Repair establishments major would include many of the industrial users in Kakaako that are relocating due to increased residential and mixed use developments that are implementing the long range plan for Kakaako. These users include furniture repair, industrial machinery and heavy equipment repair, bus and truck repair, and repair of all vehicle (all types) body and fender, and straightening of frame and body parts.

Another use that would be appropriate in this industrial park is animal products processing, given its proximity to the Waianae farmlands that includes many of the islands piggeries and also cattle

Final Environmental Assessment - Ewa Industrial Park

farms. Processing plants at this location could save travel time for farmers/ranchers in getting their product processed and would also be near Kalaeloa Harbor which could support shipping of processed meats to the outer islands. The site is also on the way to the Honolulu International Airport and Honolulu Harbor and would result in an efficient routing plan for delivery to the processing plant and continuing on to the major transportation terminals.

Given the industrial parks close proximity to Ewa Marina (under construction) and the existing Ko Olina Marina, another appropriate use would be maritime-related vocational training, sales, construction, maintenance and repairing. This site provides a convenient location for industrial uses that would support the marinas and boating industries.

Although the I-1 District's 40-foot height limit would cover the necessary height for our standard designed warehouse module which has a 36-foot height for a one-story warehouse with mezzanine office space, the proposed self storage facility would probably be developed with a 50-foot height, for a four to five-story facility. There may be other users that may need a larger more custom designed facility that would also require a 40 to 50-foot height limit. We discussed the 50-foot height limit at one neighborhood board presentation and the 36-foot height of our proposed warehouse module at another.

Based on these limitations with the I-1 District zoning, this alternative is not acceptable.

D. PROPOSED INDUSTRIAL PARK, WITH IMX-1 INDUSTRIAL-COMMERCIAL MIXED USE DISTRICT ZONING

Collectively the proposed industrial-commercial development will provide employment; provide the people of Ewa and nearby residents an opportunity to live, work and play in the Ewa area of Oahu; and is expected to reduce the need for residents in the surrounding area and along the travel corridor into town to travel in the peak hour direction towards downtown Honolulu to work.

The concern with this zoning district, similar to the I-1 zoning district, is that the following uses would not be permitted:

1. Animal products processing
2. Sawmills (if lumber yards with milling machines are permitted then restriction on sawmills will not be a problem)
3. Centralized bulk collection, storage and distribution of agricultural products to wholesale and retail markets
4. Storage and sale of seed, feed, fertilizer and other products essential to agricultural production
5. Freight movers
6. Heavy equipment sales and rentals
7. Linen suppliers
8. Manufacturing, processing and packaging, general
9. Maritime-related vocational training, sales, construction, maintenance and repairing
10. Repair establishments, major

11. Storage yards
12. Truck terminals

These uses are not expected to have a significant impact on the surrounding uses and some are deemed important and necessary for a successful industrial park providing industrial services in support of the surrounding residential communities and the nearby Ewa Marina and Resort area.

As mentioned in the previous section on I-1 zoning, repair establishments major, animal products processing, and maritime-related vocational training, sales, construction, maintenance and repairing are important uses in the success of the industrial park that would not be permitted under this zoning district.

Other uses that we feel would be appropriate and needed in this industrial park, but not permitted under the IMX-1 zoning, include:

- a. Centralized bulk collection, storage and distribution of agricultural products to wholesale and retail markets (this use could help to serve agricultural activities in Waianae and Central Oahu, in support of farmers with smaller operations that would not be able to individually provide for these services)
- b. Storage and sale of seed, feed, fertilizer and other products essential to agricultural production
- c. Freight movers (important activity in close proximity to Kalaeloa Harbor and Kapolei)

Final Environmental Assessment - Ewa Industrial Park

- d. Heavy equipment sales and rentals (would support ongoing construction activities in the projected urban growth planned in the Ewa area, including the University of Hawaii West campus, Ho'opili, and others)
- e. Linen suppliers (could service nearby hospitals and the proposed Ewa Marina resort development, hotels)
- f. Manufacturing, processing and packaging, general (an important use in any industrial park)

Another concern would be the potential for a greater percentage of commercial uses occurring which would detract from the amount of industrial space provided and could result in greater traffic impacts.

Based on these limitations with the IMX-1 District zoning, this alternative is not acceptable.

VI. MITIGATION MEASURES

The Executive Summary of the Traffic Impact Assessment Report prepared by Wilbur Smith & Associates, dated June 13, 2007, identifies potential improvements to mitigate the impacts at those intersections that would likely be substantially affected by the Ewa Industrial Park traffic, as well as actions to facilitate transit, bicycle, and pedestrian transportation. The mitigative actions apply to both the Phase I and build-out development and will be implemented by the applicant. Please refer to Appendix II - Traffic Impact Assessment Report.

Final Environmental Assessment - Ewa Industrial Park

In order to minimize construction impacts the applicant's contractor will employ dust control measures where appropriate, including the use of water wagons, erection of dust barriers, and other methods for minimizing dust. The contractor will also be required to apply for a permit from the State Department of Health should noise from construction activities exceed regulatory limits. The contractor will abide by the noise regulations incorporated into the permit. Flag men will be utilized as needed to assist vehicles entering and exiting the construction site.

Testing and evaluation of the project site to comply with the requirements of the Hazard Evaluation & Emergency Response Office with respect to former use of the site for agricultural production and potential impacts of residual pesticides related to that use will be conducted.

Should demolition activities involve asbestos, the applicant will contact the Asbestos Abatement Office in the Noise, Radiation and Indoor Air Quality Branch at 586-5800.

VII. GOVERNMENT PERMITS AND APPROVALS REQUIRED

The development will require the following governmental permits or approvals:

- Finding of No Significant Impact on the Final EA.
- Phase I consisting of 23.3 acres will require a Zone Change from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District.

Final Environmental Assessment - Ewa Industrial Park

- Phase II consisting of 25.095 acres will require the following land use permits:
 - a. State Land Use Boundary Amendment from Agricultural to Urban.
 - b. Zone Change from AG-1 Restricted Agricultural to I-2 Intensive Industrial District.
- Possible subdivision application from DPP, City and County of Honolulu
- Grading Permits for Phase I and Phase II from DPP, City and County of Honolulu.
- Building Permits for Phase I and Phase II from DPP, City and County of Honolulu.

VIII. SIGNIFICANCE CRITERIA

The following review of the significance criteria indicates that the development will not have a significant impact on the environment.

- **No irrevocable commitment to loss or destruction of any natural or cultural resource would result.**

There will be no loss or destruction of cultural or natural resources with the development of the proposed Ewa Industrial Park. The Cultural Impact Assessment Report (Section 7 - Summary) prepared by Cultural Surveys Hawaii, Inc. and dated January 2007 states in part as follows: “.....With the

spread of Western land use in the 19th century, the project area was used for ranching first, then housing and pig farming. In general, the project area lies in a region that would have been less than bountiful, and therefore sparsely utilized, even in pre-contact times.”

A comment letter received from the State of Hawaii, Department of Land and Natural Resources, dated November 29, 2006 states in part as follows: “.....the property was previously under intense sugar cane cultivation, making it unlikely that any historically significant cultural properties are present.”

Chapter 3.4 Historic and Cultural Resources of the Ewa Development Plan date August 1997 states as follows: “3.4.3 Guidelines - Adjacent Uses - New development should be set back a minimum of 50 feet on either side of the OR&L right-of-way, unless it is directly related to the operation of the railroad, or is consistent with the use of the right-of-way for open space and bikeway purposes in stretches where railroad operation is not feasible, or is otherwise specified in existing land use approvals.” In the design of the proposed Ewa Industrial Development the applicant will provide a 40-foot setback for structures, except for a security wall/fence, from the historic OR&L right-of-way that is adjacent to the subject property on its mauka side. This 40-foot setback is consistent

Final Environmental Assessment - Ewa Industrial Park

with previous ordinances in the surrounding Ewa area and the State Land Use Boundary Amendment Decision and Order.

During construction of the development, should any previously unidentified archaeological resources such as artifacts, shell, bone or charcoal deposits, human burial, rock or coral alignment, pavings or walls be encountered, the Applicant will stop work and contact the Historic Preservation Office for review and approval of mitigation measures.

- **The action would not curtail the range of beneficial uses of the environment.**

The proposed Ewa Industrial Park will not curtail the range of beneficial uses on the environment. The proposed project will provide an opportunity for the people of Ewa and the surrounding community to live, work and play in the Ewa area of Oahu. Another benefit of employment in the proposed Ewa Industrial Park will be the reduced need for residents in the surrounding area and along the travel corridor into town to travel in the peak hour direction towards downtown Honolulu to work.

- **The proposed action does not conflict with the state's long-term environmental policies or goals and guidelines.**

The State's environmental policies and guidelines are set forth in Chapter 344, Hawaii Revised Statutes, "State Environmental Policy". The broad policies set forth include

Final Environmental Assessment - Ewa Industrial Park

conservation of natural resources and enhancement of the quality of life. As discussed earlier, the project will not adversely affect significant natural resources, with the project site having no unique natural features such as wetlands nor threatened or endangered wildlife species. With the proposed development, short-term and long-term jobs will be created which will ultimately improve those individuals quality of life. The project will provide Ewa and nearby residents an opportunity to live, work and play in the Ewa area of Oahu. This employment is expected to reduce the need for residents in the surrounding area and along the travel corridor into town to travel in the peak hour direction toward downtown Honolulu to work.

- **The economic or social welfare of the community or state would not be substantially affected.**

The proposed development will have a positive effect on the economic and social welfare of the state with the provision of short-term construction employment and related tax impacts, and long-term primary jobs within the Ewa Industrial Park.

The economic welfare will be positively effected with prospective tenants being attracted to a condominium type industrial development where they will have the option of purchasing relatively small units, or a combination of smaller units, that are ready for occupancy requiring only the addition

of an electric meter and water connection. This built-out saves future tenants the time and expense of requesting permits and completing the units themselves, thus attracting business and economic opportunities to the Ewa area of the island.

The social welfare to residents in this area of the island will be positively affected with the opportunity to work, live and play close to home, and not having to fight the rush hour traffic associated with employment in the primary urban center of the island.

- **The proposed action does not substantially affect public health.**

The proposed action will not affect public health. Through the CC&R's, the covenants and development regulations within the condominium type industrial development the owners/tenants will be limited to the type of operations that will be allowed in the development. For example the applicant will prohibit tenants from operating petroleum processing plants, explosives and chemical manufacturing or storage plants, agricultural products processing plants, salvage yards, waste disposal plants, composting plants, recycling plants, and demolition plants through its CC&R's.

The public's health and well-being will be additionally protected by the hours of operation, noise, visual impacts and

Final Environmental Assessment - Ewa Industrial Park

many other restrictions that will be controlled through the CC&R's of the proposed Ewa Industrial Park.

- **No substantial secondary impacts, such as population changes or effects on public facilities, are anticipated.**

There will be no substantial secondary impact such as population change since the proposed project is industrial in nature and does not involve the provision of housing.

There will be no substantial secondary impacts on public facilities with development of the proposed Ewa Industrial Park as stated below:

Water - As discussed in this Final EA the Board of Water Supply will require the applicant to upgrade a portion of the existing water main along Geiger Road in order to provide adequate fire protection to the proposed industrial park. In addition, when water is made available the applicant will pay the Water System Facilities Charges for resource development, transmission and daily storage. Please refer to Appendix IV - Agency Comment Letters.

Wastewater - DPP has approved sewer connection permits for both phases of the proposed industrial park.

Traffic - Wilbur Smith Associates has prepared a traffic impact assessment report, dated June 27, 2007. Please refer to Appendix II - Chapter 4, page 11, Chapter 5

page 11 and Chapter 6, page 15 for potential mitigative actions.

- **No substantial degradation of environmental quality is anticipated.**

The industrial development itself will not result in a substantial degradation of environmental quality, only a minimal impact is projected during the construction phase. Dust control measures appropriate to the situation will be employed by the contractor, including where appropriate, the use of water wagons, erection of dust barriers and other methods for minimizing dust.

- **The proposed action does not involve a commitment to larger actions, nor would cumulative impacts result in considerable effect on the environment.**

The proposed development of the Ewa Industrial Park will not involve a commitment to larger actions, nor will it result in cumulative impacts to the environment as it will not generate future developments, thereby creating a cumulative impact.

- **No rare, threatened or endangered species or their habitats would be affected.**

According to the Botanical Resources Assessment Study, no rare, threatened or endangered flora will be affected by the proposed development and renovations.

Final Environmental Assessment - Ewa Industrial Park

According to the Avifaunal and Feral Mammal Field Survey, no rare, threatened or endangered species or their habitats would be affected by the proposed development and renovations.

- **Air quality, water quality or ambient noise levels would not be detrimentally affected.**

Air Quality - An Air Quality Impact Report, dated May 4, 2007, was prepared by J. W. Morrow, Environmental Management Consultant. The Conclusion and Mitigation section states in part as follows:

“.....the project area is considered to be “semi-arid” by Thornwaite’s climatic classification system with a P/E index lower than that associated with the EPA fugitive dust emission factor, there appears to be an increased potential for fugitive dust. It will therefore be important to employ adequate dust control measures during the construction period, particularly during the drier summer months. Dust control could be accomplished through frequent watering of unpaved roadways and areas of exposed soil. The EPA estimates that twice daily watering can reduce fugitive dust emissions by as much as 50%.”

The applicant will instruct the contractor on dust control measures that will be accomplished by erection of dust barriers

Final Environmental Assessment - Ewa Industrial Park

and at least twice daily watering of unpaved roadways and areas of exposed soil.

“Short-term impacts on air quality due to offsite activities supporting the proposed development, i.e. concrete and asphalt production, appear to be *de minimus* due in large part to the high removal control devices typically found on such production facilities. Furthermore, any emissions will be strictly regulated by the Department of Health permit which each batch plan must have in order to operate.”

“Mobile Source Activity. The traffic analysis report prepared for the proposed project served as the basis for this mobile source impact analysis.”

“.....compliance with federal and state carbon monoxide standards is demonstrated under *worst case* conditions of meteorology and peak tour traffic; thus, no special mitigative measures are required.”

Water - There will be no adverse impact to surface or groundwater quality during construction of the project. Best management practices will be utilized to minimize the erosion of soil and the discharge of other pollutants offsite. The completed project will not adversely impact surface or groundwater quality. Areas of exposed soil will be planted to minimize erosion. An underground drainage system will be

constructed which will convey surface runoff to existing retention/siltation basins in the adjacent golf course

Noise - Short-term noise impacts at construction sites are a normal result of construction activity. The State Department of Health administers rules and regulations relating to the hours during which construction is permitted and the noise levels permitted during those hours. The contractor will be required to apply for a permit from the State Department of Health should noise from construction activities exceed regulatory limits. The contractor will abide by the noise regulations incorporated into the permit.

- **The project would not affect environmentally sensitive areas, such as flood plains, tsunami zones, erosion-prone areas, geologically hazardous lands, estuaries, fresh waters or coastal waters.**

The development will not affect flood plains, tsunami zones, erosion-prone areas, geologically hazardous land, estuaries, fresh water nor coastal waters. According to the Flood Insurance Rate Map (FIRM), Panel 310 of 395, dated November 20, 2000 a small portion of the project site lies within Zone X, an area determined to be outside the 0.2% annual chance floodplain. The remaining portion of the project lies within Zone D, an area in which flood hazards are undetermined, but possible.

- **Substantially affects scenic vistas and view planes identified in county or state plans or studies.**

The proposed development will not affect any important scenic vistas nor view planes in this area.

- **Requires substantial energy consumption.**

The Hawaiian Electric Company has existing power lines serving this area and the applicant will coordinate development to ensure that the power lines will be adequate to support the proposed industrial development. Normal energy consumption for an industrial development of this nature is anticipated.

IX. COMMUNITY MEETINGS AND CORRESPONDENCE

The applicant and team members met with the Ewa Villages Owners' Association to discuss the proposed project and to request their support. The meeting dates were January 22, 2007 and April 16, 2007.

Please see support letter from the Ewa Villages Owners' Association to Mayor Mufi Hannemann dated July 10, 2007 included in Appendix XIV - Community Meetings and Correspondence.

The applicant and team members presented the proposed project to the Ewa Neighborhood Board on the evening of July 12, 2007. The following comments and responses were provided:

1. Effects of traffic were of concern. In response, the developer plans to participate in the widening of Geiger Road fronting

Final Environmental Assessment - Ewa Industrial Park

the project site. The project owner does not plan to create a second Campbell Industrial Park.

2. There will be rules and regulations to follow, the project area will be secured at night and noise and activities will be monitored. Building heights will be limited to 50 feet or less. Trees will be planted at every sixth parking stall and a concrete wall will encircle the property.

A motion was made in opposition to the project at this time as more information is needed. The motion failed with a 5 to 4 vote (need 6 votes to pass).

The applicant and team members presented the proposed project to the Ewa Neighborhood Board, a second time, on the evening of October 11, 2007. The following comments and responses were provided:

1. Alexander opposed the height limit variance and said there is not enough parking. He added a copy of the traffic study was requested several months ago and did not receive one. Kurahashi replied that the EA process has been completed. The developer is proposing only about 20% of the density permitted on the property. The rooftop will be about 36 feet high, with an architectural design. The applicant is providing more parking than required.
2. Berg commented that the final impact analysis report is the most extensive and intensive report he has read.

Final Environmental Assessment - Ewa Industrial Park

3. Atkinson asked what types of jobs are being proposed. In response, local businessmen, contractors, architects, etc. Regarding the widening of roads, the City Department of Transportation Services will determine how many feet the existing road should be widened.
4. Belford noted that the developer proactively exceed the City's expectations and put the roads in first. In answer, two developers are responsible for changes to Geiger Road and they are open to recommendations from the Board. Regarding having no recycling, follow up will be done as to the Land Use Ordinance in the process.
5. A n audience member said the development abuts her property and is welcome, but there are concerns about two large building next to the wall. The response that it is anticipated that a pitch roof (36 feet) with 22-foot eaves would be build on the buildings. She asked that the business use adjacent to the neighbors be limited to exclude bars, businesses using chemicals, audio installation shops, etc., for the safety of the children living next to the property.
6. The road widening would start from the wastewater treatment plant to Kapolei Parkway with a bike path, drain system, and increase from two to four lanes.
7. All surrounding walls will be six feet high concrete for the perimeters.

Final Environmental Assessment - Ewa Industrial Park

8. Resident Chanel asked if the developer would be willing to share the waterline because it is difficult getting water meters through the neighboring properties. The engineer replied that their waterlines will come off Geiger Road rather than Renton Road and would not be extended to her property until Phase II of the development. The engineer will look into the possibility of providing a water connection for the residents property.
9. Oamilda expressed concern relative to traffic and jobs. He thinks that the project would not increase jobs; stated that Verona Villages are dilapidated. The developer should give back to the community as a good neighbor.
10. Atkinson asked if the developer would assist the Railroad Historic Society if they are impacted. In answer the owners are in support and would help the main historical site.
11. With an additional 1,390 vehicles entering Geiger Road entrance, Alexander wanted to know if a traffic light would be installed. Kurahashi replied that the Department of Transportation Services decides if a traffic signal is warranted and the applicant would abide by their recommendation.
12. Lynn was in support of the project.
13. Malama, President of the Ewa Villages Association, relayed that the EA is complete and that the consultants went out into the community and were willing to make changes. Se asked that the Board support the project.

Final Environmental Assessment - Ewa Industrial Park

14. Bautista raised a point of order regarding Alexander's verbal abuse of the speakers. Chair acknowledged the point of order asking all Board members to address remarks to the Chair and exercise order and decorum.
15. Multiple points of orders were raised regarding Oamilda speaking out of turn. Chair acknowledged the point of orders and reminded attendees to address all remarks to the Chair and exercise order and decorum.
16. Favella and Taetui were in support of the project.
17. Board members and attendees were reminded of the time limits and order and decorum.
18. Atkinson noted that she did not see the copy of the Final EA and may have to abstain from voting. Berg reminded all that a copy of the EA is available at public libraries.
19. Belford rased concern with Board and audience members being allowed to verbally attack the developers. He noted that the development for 1,000 new homes cannot be stopped. He added the proposed development is a critical area commercial property. He questioned if it is fear, uncertainty, or doubt causing the insults to the developers. He asked that the one-minute time limit be enforced and to move on with the vote.
20. It was state that Board members and guests be courteous.

A motion to support the proposed Ewa Industrial Park development was approved by a vote of six in favor, one against and two abstentions.

Final Environmental Assessment - Ewa Industrial Park

Please refer to Appendix XIV - Community Meetings and Correspondence.

X. LAND USE ORDINANCE

In the development of the Ewa Industrial Park the applicant plans to meet the Development Standards for I-2 zoning. The Land Use Ordinance (LUO) of the City and County of Honolulu, Table 21-3.5, I-2 Industrial Development Standards for I-2 zoning are as follows:

- (1) Minimum Lot Area - 7,500 square feet

The project area covers 48.395 acres (Phase I = 23.3 acres and Phase II = 25.095 acres)

- (2) Minimum lot width and depth - 60 feet

The project area meets the minimum lot width and depth.

- (3) Yards: front - 5 feet; side and rear - 0 feet.

The applicant will provide a 40-foot setback, except for a security wall/fence, on that portion of the property that is adjacent to the OR&L Historic Railway. The applicant will also comply with required setbacks on any portion of his property adjacent to a zoning lot in a residential, apartment, apartment mixed use or resort district.

- (4) Maximum building area - 80% of zoning lot. Proposed development approximately 50% of zoning lot.

- (5) Maximum density (FAR) - 2.5

Final Environmental Assessment - Ewa Industrial Park

Phase I will total approximately 489,148 square feet and Phase II will total approximately 523,600 square feet. We project that with total build-out the development will offer approximately 1,012,748 square feet of industrial park space well under the allowable FAR.

(6) Maximum height - 60 feet

The majority of the proposed industrial buildings will be one or two-stories and built to a height of approximately 36 to 40 feet. However, the applicant may develop a self-storage facility in Phase I that could be built to a height of 50 feet and there may be other structures that require taller buildings.

(7) Height setbacks - (1) Transitional Height Setbacks. Where a zoning lot adjoins a zoning lot in a residential, apartment, apartment mixed use or resort district, the residential, apartment, apartment mixed use or resort district height setbacks shall be applicable at the buildable area boundary line on the side of the industrial zoning. (2) Street Setbacks. In the I-2 and I-3 districts, on zoning lots adjacent to a street, no portion of a structure shall exceed a height equal to twice the distance from the structure to the vertical projection of the center line of the street.

The applicant will adhere to the height setback regulations in the I-2 zoning district.

Final Environmental Assessment - Ewa Industrial Park

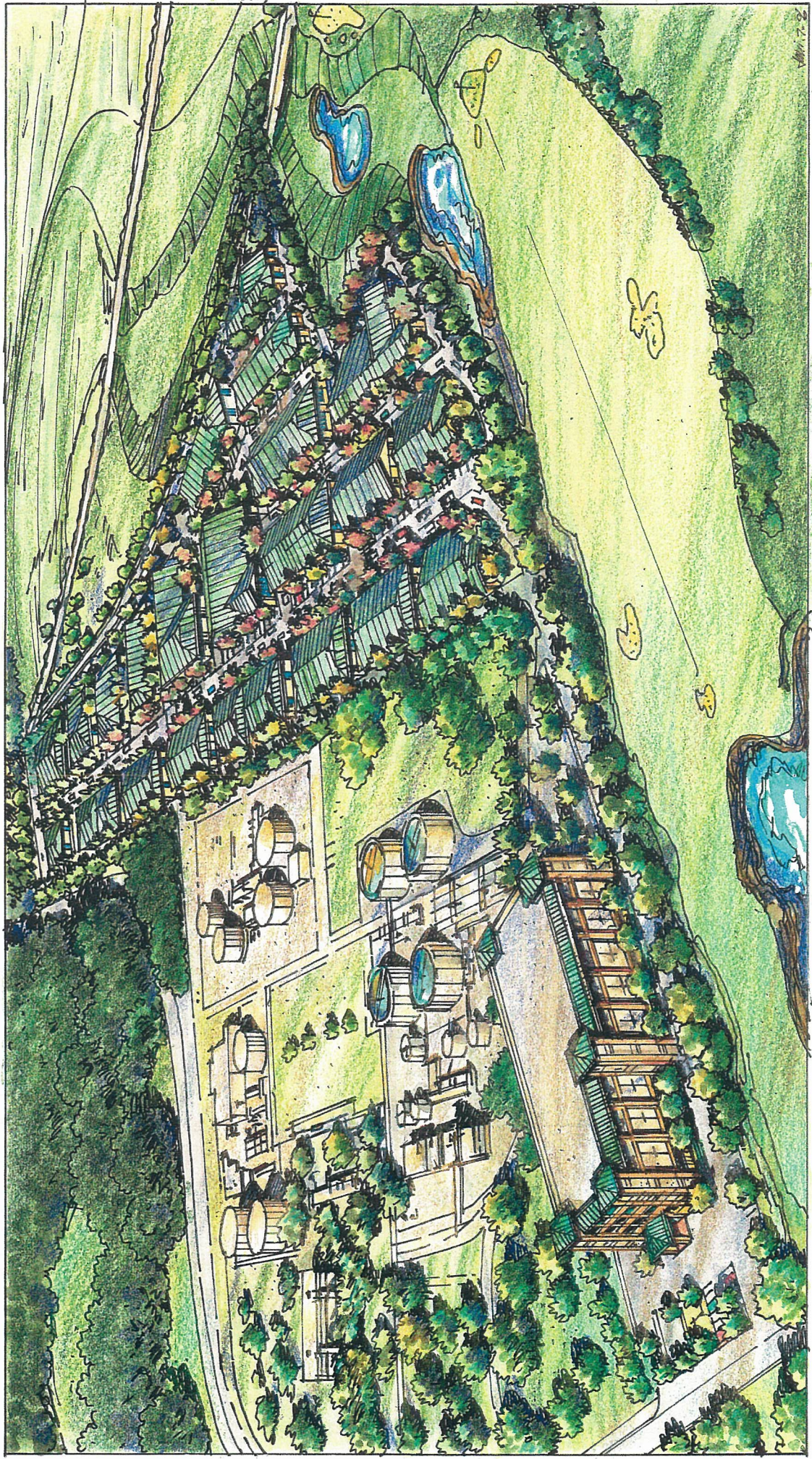
- (8) Parking - At full build-out parking required is estimated at 930 stalls. The project will provide approximately 2,178 parking stalls.

XI. RECOMMENDATION

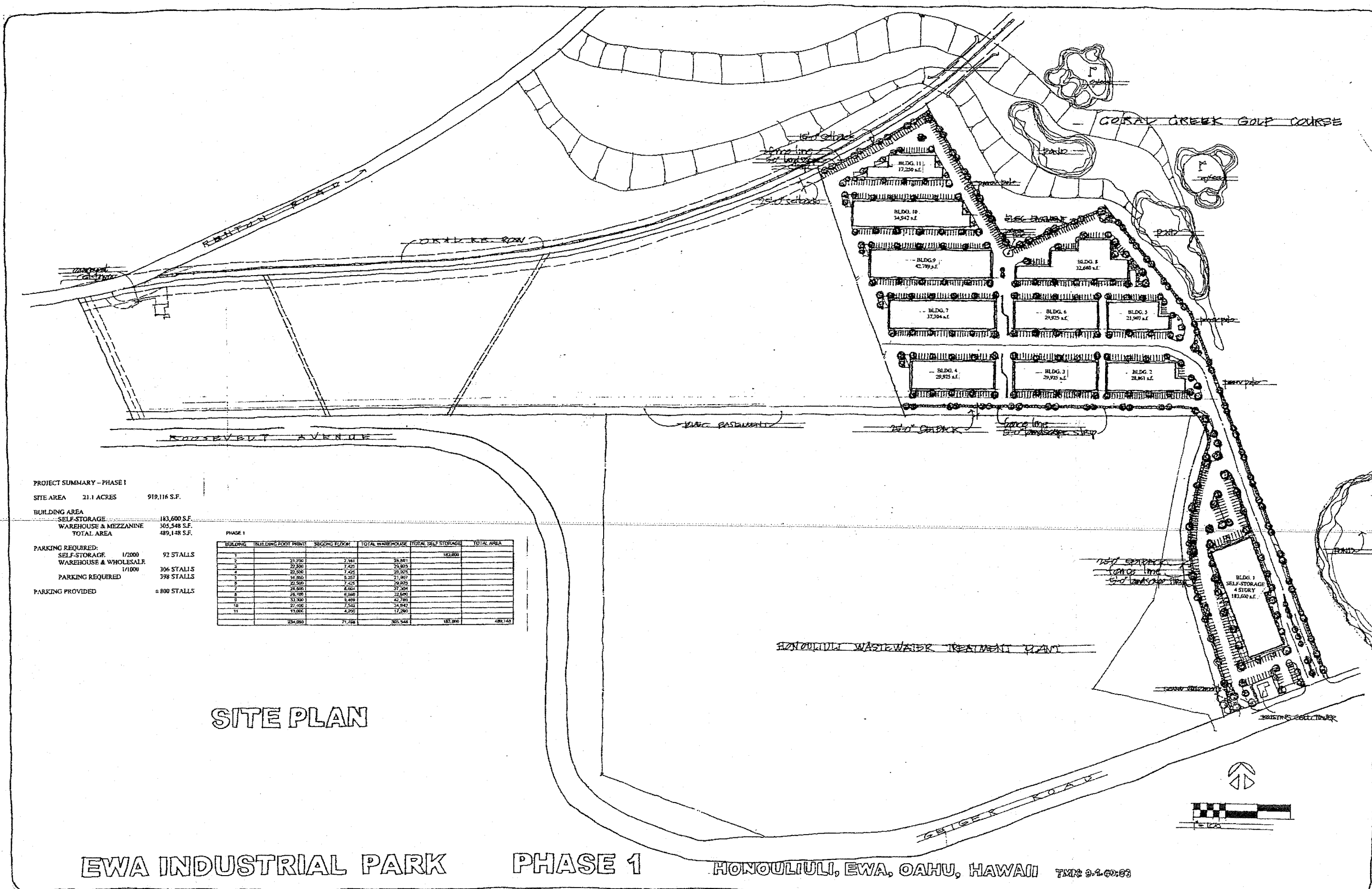
Based on this Final Environmental Assessment, a Finding of No Significant Impact (FONSI) for the proposed industrial development is anticipated. The Ewa Industrial Park project will be developed in an environmentally sensitive manner and will not result in significant impact to the environment.

APPENDIX I
CONCEPTUAL PLANS

EWA COMMERCIAL PARK



AERIAL VIEW



PROJECT SUMMARY - PHASE I
 SITE AREA 21.1 ACRES 919,116 S.F.
 BUILDING AREA
 SELF-STORAGE 183,600 S.F.
 WAREHOUSE & MEZZANINE 305,548 S.F.
 TOTAL AREA 489,148 S.F.
 PARKING REQUIRED:
 SELF-STORAGE 1/2000 92 STALLS
 WAREHOUSE & WHOLESALE 1/1000 306 STALLS
 PARKING REQUIRED 398 STALLS
 PARKING PROVIDED ± 800 STALLS

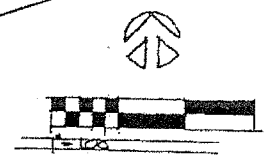
PHASE I					
BUILDING	BUILDING FOOT PRINT	SECOND FLOOR	TOTAL WAREHOUSE	TOTAL SELF STORAGE	TOTAL AREA
1				183,600	
2	21,876	7,381	29,257		
3	22,500	7,425	29,925		
4	22,500	7,425	29,925		
5	18,800	6,267	25,067		
6	22,500	7,425	29,925		
7	28,800	9,599	38,399		
8	28,800	9,599	38,399		
9	33,300	11,100	44,400		
10	27,000	9,000	36,000		
11	17,250	5,750	23,000		
	234,000	77,488	305,548	183,600	489,148

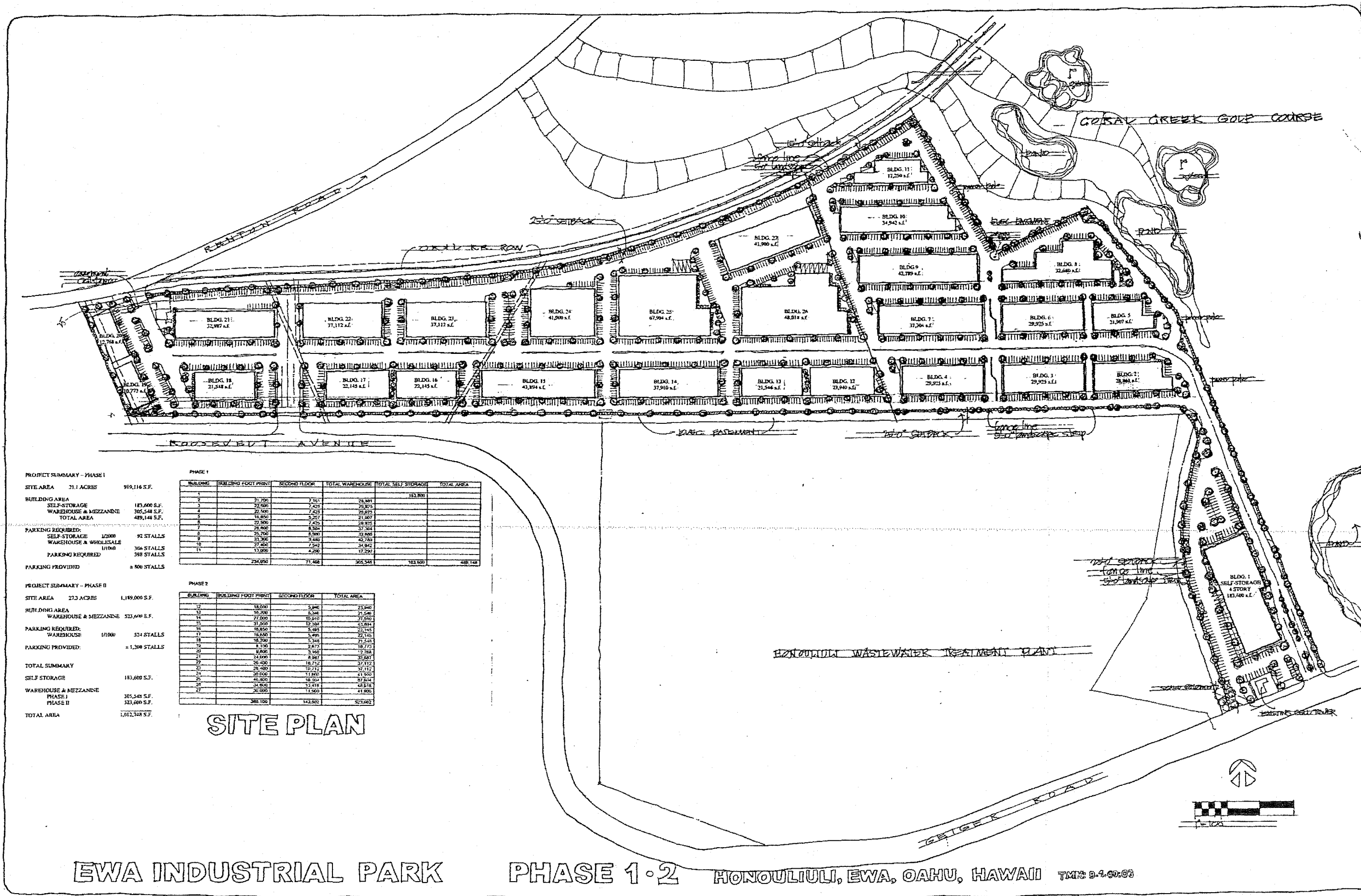
SITE PLAN

EWA INDUSTRIAL PARK

PHASE 1

HONOLULU, EWA, OAHU, HAWAII TMC 9-1-00:03





PROJECT SUMMARY - PHASE I

SITE AREA	21.1 ACRES	919,116 S.F.
BUILDING AREA		183,600 S.F.
SELF-STORAGE		305,548 S.F.
WAREHOUSE & MEZZANINE		489,148 S.F.
TOTAL AREA		978,296 S.F.
PARKING REQUIRED:		
SELF-STORAGE	12,000	92 STALLS
WAREHOUSE & WHOLESALE	17,000	366 STALLS
PARKING PROVIDED:		387 STALLS
PARKING PROVIDED:		± 806 STALLS

PROJECT SUMMARY - PHASE II

SITE AREA	27.3 ACRES	1,189,000 S.F.
BUILDING AREA		23,840
WAREHOUSE & MEZZANINE		523,690 S.F.
PARKING REQUIRED:		
WAREHOUSE	17,000	524 STALLS
PARKING PROVIDED:		± 1,308 STALLS

TOTAL SUMMARY

SELF STORAGE	183,600 S.F.
WAREHOUSE & MEZZANINE	523,690 S.F.
PHASE I	305,548 S.F.
PHASE II	523,690 S.F.
TOTAL AREA	1,012,728 S.F.

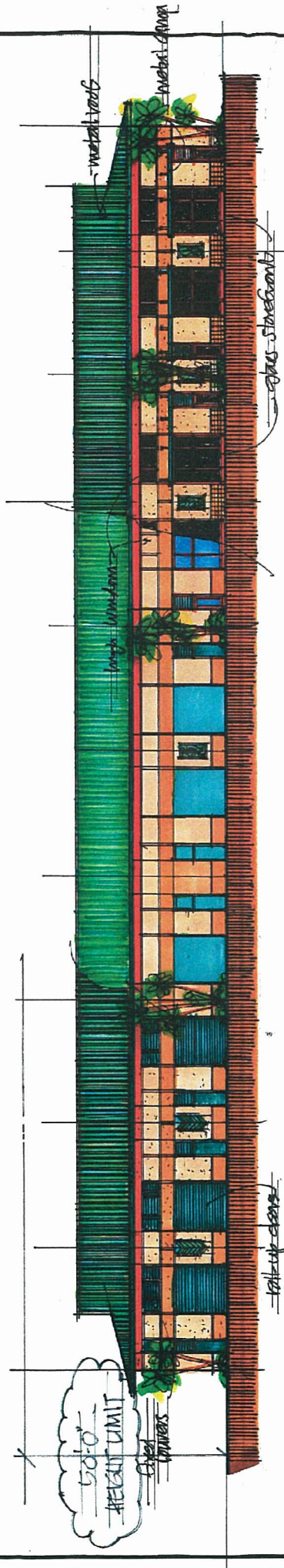
PHASE I

BUILDING	BUILDING FOOTPRINT	SECOND FLOOR	TOTAL WAREHOUSE	TOTAL SELF STORAGE	TOTAL AREA
1					
2	21,700	7,161	28,861		28,861
3	22,500	7,425	29,925		29,925
4	22,500	7,425	29,925		29,925
5	18,800	5,267	24,067		24,067
6	22,500	7,425	29,925		29,925
7	28,900	8,504	37,404		37,404
8	25,700	8,387	34,087		34,087
9	23,300	7,488	30,788		30,788
10	27,400	7,924	35,324		35,324
11	13,000	4,200	17,200		17,200
	234,600	71,468	306,068	183,600	489,668

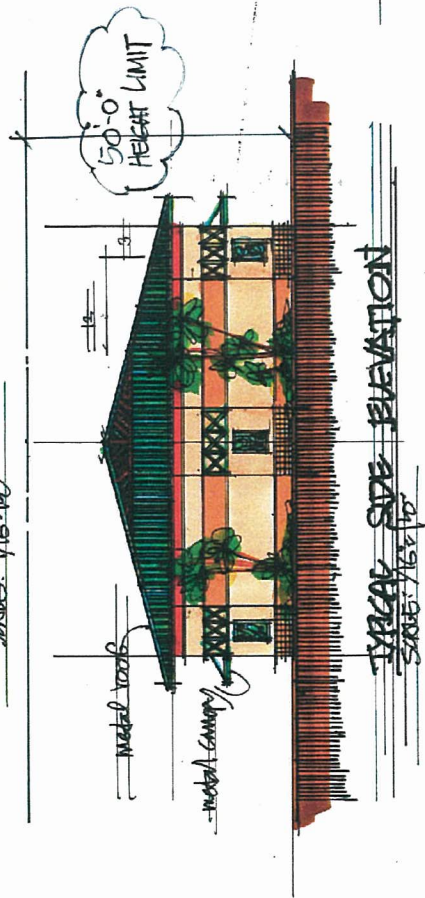
PHASE II

BUILDING	BUILDING FOOTPRINT	SECOND FLOOR	TOTAL AREA
12	18,000	5,840	23,840
13	19,200	6,040	25,240
14	27,000	8,840	35,840
15	31,500	10,160	41,660
16	18,800	5,840	24,640
17	18,800	5,840	24,640
18	18,200	5,540	23,740
19	8,100	2,670	10,770
20	8,800	2,840	11,640
21	14,600	4,640	19,240
22	26,400	8,440	34,840
23	28,400	9,040	37,440
24	20,000	6,440	26,440
25	46,800	14,040	60,840
26	24,800	7,640	32,440
27	20,000	6,440	26,440
	388,100	114,800	502,900

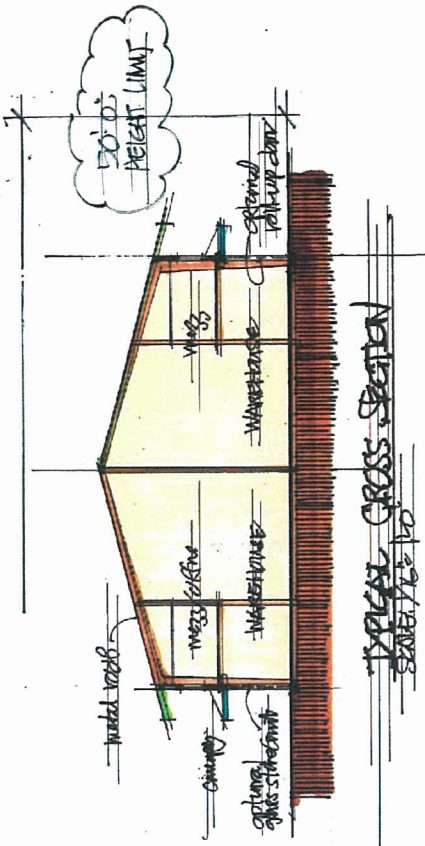
SITE PLAN



TYPICAL FRONT ELEVATION
SCALE: 1/8" = 1'-0"



TYPICAL SIDE ELEVATION
SCALE: 1/8" = 1'-0"



TYPICAL CROSS SECTION
SCALE: 1/8" = 1'-0"

APPENDIX II

TRAFFIC IMPACT ANALYSIS REPORT

FINAL

**EWA INDUSTRIAL PARK
TRAFFIC IMPACT ASSESSMENT REPORT**

EWA DISTRICT, OAHU

Prepared For:

Ewa Industrial Park, LLC
99-880 Iwaena Street
Aiea, Hawaii 96701

Prepared By:

WILBUR SMITH ASSOCIATES
421 Fayetteville Street, Suite 1303
Raleigh, NC 27601
(919) 755-0583

June 29, 2007

(WSA Project No. 100448)

TABLE OF CONTENTS

CHAPTER	Page
EXECUTIVE SUMMARY	S-1
1. INTRODUCTION	1-1
Methodology and Assumptions	1-4
Analysis Scenarios	1-4
Forecast Methodology and Assumptions	1-4
Intersection Analysis Methodology	1-6
Report Organization	1-6
2. EXISTING CONDITIONS	2-1
Existing Roadway System	2-1
Existing Traffic Volumes	2-3
Existing Traffic Conditions	2-6
Public Transportation	2-8
Bicycles and Pedestrians	2-9
3. FUTURE CONDITIONS WITHOUT PROJECT	3-1
Future Development Assumptions	3-1
Development Near the Project Site	3-1
Planned Roadways	3-3
2009 Roadway Improvements	3-3
2012 Roadway Improvements	3-4
Public Transportation	3-4
Bicycle and Pedestrian Facilities	3-6
Bicycle Facilities	3-6
Pedestrian Facilities	3-7
2009 Peak Hour Traffic Conditions	3-7
Trip Generation	3-7
2009 Peak Hour Traffic Volumes	3-8
2009 Intersection Conditions	3-11
2012 Peak Hour Traffic Conditions	3-13
Trip Generation	3-14
2012 Peak Hour Traffic Volumes	3-14
2009 Intersection Conditions	3-14

CHAPTER	Page
4. 2009 WITH EWA INDUSTRIAL PARK PHASE 1	4-1
Description of the Phase 1 Project	4-1
Project Trip Generation	4-2
Peak Hour Traffic Volumes	4-2
Peak Hour Intersection Conditions	4-6
Public Transit	4-10
Bicycle and Pedestrian Travel	4-10
Proposed Mitigative Actions	4-11
Roadways and Traffic	4-11
Public Transit, Bicycles and Pedestrians	4-11
5. 2012 WITH EWA INDUSTRIAL PARK BUILDOUT	5-1
Description of the Project Build-Out	5-1
Project Trip Generation	5-1
Peak Hour Traffic Volumes	5-3
Peak Hour Intersection Conditions	5-6
Project Access Connections	5-6
Off-Site Intersections	5-8
Public Transit, Bicycles and Pedestrians	5-11
Public Transit	5-11
Bicycle and Pedestrian Facilities	5-11
Potential Mitigative Actions	5-12
Roadways and Traffic	5-12
Public Transit, Bicycles and Pedestrians	5-13
6. 2012 WITH EWA INDUSTRIAL PARK WITHOUT RENTION RD DRIVE	6-1
Description of the Project Scenario	6-1
Project Trip Generation	6-1
Peak Hour Traffic Volumes	6-2
Peak Hour Intersection Conditions	6-2
Project Access Connections	6-5
Off-Site Intersections	6-9

APPENDICES

- A Methodology for Analyzing Levels of Service
- B Distribution of Vehicle Trips

Under Separate Cover

Existing Traffic Counts

Intersection Analysis Worksheets for Existing Conditions and Future Scenarios

ILLUSTRATIONS

Figure	Page
1-1 Project Location	1-2
1-2 Preliminary Site Plan	1-3
2-1 Existing Roadways	2-2
2-2 2006 Morning Peak Hour Traffic	2-4
2-3 2006 Afternoon Peak Hour Traffic	2-5
3-1 2009 Roadways without Project	3-5
3-2 2009 Traffic without Project, Morning Peak Hour	3-9
3-3 2009 Traffic without Project, Afternoon Peak Hour	3-10
3-4 2012 Traffic without Project, Morning Peak Hour	3-15
3-5 2012 Traffic without Project, Afternoon Peak Hour	3-16
4-1 2009 Morning Peak Hour Traffic, with Project Phase 1	4-4
4-2 2009 Afternoon Peak Hour Traffic, with Project Phase 1	4-5
5-1 2012 Morning Peak Hour with Project Buildout, Scenario A	5-4
5-2 2012 Afternoon Peak Hour with Project Buildout, Scenario A	5-5
6-1 2012 Morning Peak Hour with Project Buildout, Scenario B	6-3
6-2 2012 Afternoon Peak Hour with Project Buildout, Scenario B	6-4

TABULATIONS

Table	Page
S-1 Vehicle Trips Generated By Ewa Industrial Park Project	S-2
S-2 2009 Traffic Conditions at Key Intersections with Ewa Industrial Park Phase 1	S-5
S-3 2012 Traffic Conditions at Key Intersection with Ewa Industrial Park Buildout	S-7
S-4 2012 Traffic Conditions at Access Connections with Ewa Industrial Park Buildout	S-9
2-1 Existing Traffic Conditions at Key Intersections	2-7
3-1 Vehicle Trip Generation for Other Area Projects	3-8
3-2 2009 Traffic Conditions at Key Intersections without Ewa Industrial Park	3-11
3-3 2012 Traffic Conditions at Key Intersections without Ewa Industrial Park	3-17
4-1 Vehicle Trip Generation for Ewa Industrial Park Phase 1	4-3
4-2 2009 Traffic Conditions at Key Intersection with Ewa Industrial Park Phase 1	4-8
5-1 Vehicle Trip Generation for Ewa Industrial Park Buildout	5-2
5-2 2012 Traffic Conditions at Access Connections with Ewa Industrial Park Buildout	5-7
5-3 2012 Traffic Conditions at Key Intersection with Ewa Industrial Park Buildout	5-9
6-1 2012 Traffic Conditions at Access Connections with Ewa Industrial Park Buildout	6-6
6-2 2012 Traffic Conditions at Key Intersection with Project Access Scenarios	6-11

Final 6-27-07

EXECUTIVE SUMMARY

The Ewa Industrial Park (the Project) is planned for the approximately 48.395 acres located between Geiger and Renton Roads in the Ewa District of Oahu. The "L" shaped site is located along the east and mauka sides of the Honouliuli Waste Water Treatment Plant (WWTP). The 23.3 acres along the eastern boundary has previously been approved by the State Land Use Commission for urban development, with this portion of the Project identified as Phase 1.

The Project plans envision the development of the site with a mix of light manufacturing, warehousing, distribution, and self-storage uses, plus a small amount of accessory retail uses. The preliminary concept includes development of approximately 1,237,000 square feet of building space for light industrial uses with about 6,000 square feet of accessory retail uses.

The Project Phase 1 area is expected to be developed and occupied by yearend 2009. The build-out of the Project is expected by yearend 2012.

Project access to Phase 1 is proposed via a Main Driveway connection to Geiger Road at the eastern boundary of the site. A Right-in/Right-out driveway connection to Geiger Road is proposed about 200 feet west of the Main Driveway. The Main Driveway would be located about 500 feet east of the planned Coral Creek Road A connection to Geiger Road opposite the Honouliuli WWTP east driveway.

This study has assessed traffic conditions for following scenarios:

1. Existing traffic conditions.
2. 2009 conditions without the Project to serve as a baseline for assessment of Project impacts, and 2009 with the Project Phase 1 development.
3. 2012 conditions without the Project to serve as a baseline for assessment of Project impacts, and 2012 with the Project Build-out development.

The traffic impact assessment for the Ewa Industrial Park focuses on the key intersections located near the Project. The study proposes roadway improvements on the adjacent roadways to accommodate 2009 and 2012 traffic needs with the Project.

PROJECT TRIP GENERATION

At full build-out, the land uses within Ewa Industrial Park are estimated to generate a total of 1,390 and 1,384 vehicles entering or exiting the site in the weekday morning and afternoon peak hours, respectively.

The trips entering accessory retail portion of the development would include both “new” vehicle trips and additional stops by vehicles that would be traveling past the site whether or not the Project is developed. These additional “stops” are referred to as “pass-by” trips which would approximate between 60% of the trips for the convenience market assumed as the accessory retail use within the Project. The pass-by trips are reflected through adjustments to the numbers of vehicles entering/exiting the site and are not added as additional trips on the area roadways.

With the adjustments for pass-by trips, the Project is estimated to add 1,149 new vehicle trips to the off-site roadways in the weekday morning peak hour and 1,196 new trips in the afternoon peak hour (Table S-1). The pass-by trips are reflected through adjustments to the traffic turning movement volumes at the intersections of the Project Access Driveways to reflect additional turns into/out of the Project by vehicles traveling along Geiger Road past the convenience market.

The development of only the Phase 1 portion of the site would generate a total of 541 and 525 additional vehicle trips on the adjacent streets during the weekday morning and afternoon peak hours, respectively, after adjustments for pass-by trips.

Table S-1 VEHICLE TRIP GENERATION EWA INDUSTRIAL PARK BUILDOUT							
Item	Morning Peak Hour			Afternoon Peak Hour			24- Hour
	Total	Enter	Exit	Total	Enter	Exit	
Phase 1 Vehicle Trips							
Convenience Market (6 TSF)	402	201	201	314	160	154	4,428
<i>New Trips without pass-bys</i>	<i>161</i>	<i>80</i>	<i>80</i>	<i>126</i>	<i>64</i>	<i>62</i>	<i>1,771</i>
Mini-Storage Warehouse (195.659 TSF)	30	18	12	50	25	25	489
General Light Industrial (293.489 TSF)	270	238	32	287	35	252	2,046
Phase 1 Subtotal	702	457	245	651	220	431	6,963
Phase 2 Vehicle Trips							
General Light Industrial (747.852 TSF)	688	606	82	733	90	643	5,213
Buildout Total Trips	1,390	1,063	327	1,384	310	1,074	12,176
Buildout New Trips Without Pass-bys	1,149	942	206	1,196	214	982	9,519
Wilbur Smith Associates; June 25, 2007							

2009 AND 2012 TRAFFIC WITHOUT THE PROJECT

The traffic forecasts reflect a substantial amount of new development near the Project site by 2012. The traffic for these new developments was estimated either through use of trip generation rates or through inclusion of an area traffic growth rate. The forecasts reflect the following assumptions:

- The Ewa by Gentry Makai Area was assumed to be 50% developed in 2009 and built out by 2012, with trips obtained from the developments traffic study.
- The Gentry Companies' Coral Creek Industrial Park, located across from the Ewa Industrial Park site, was assumed to be 50% developed in 2009 and built out by 2012, with trips estimated by WSA.
- The Department of Hawaiian Homelands (DHHL) West initial office and residential development was assumed to be completed by 2009.
- The University of Hawaii West Oahu (UHWO) campus and adjacent residential and commercial development was assumed to be 15% developed by 2009 and 57% developed by 2012, with trips obtained from the project traffic studies.
- Further development of the DHHL West area, Ocean Pointe, and other area developments was assumed to be included in an area-wide traffic growth rate of 3.8% per year.

The forecasts also reflect the changes in area circulation patterns that are expected to result from planned roadway projects in the area. The 2009 forecasts reflect the following roadway projects:

- Widening of Geiger Road to four lanes between the Kapolei Parkway and the Honouliuli WWTP
- Completion of the Kapolei Parkway from Ewa Beach to the City of Kapolei
- Widening of Fort Weaver Road to six lanes from the end of the existing six-lane section near St. Francis Hospital to 900 feet makai of the Geiger Road intersection
- Construction of the initial Phase 1 three-lane North-South Road and the interchange with the H-1 Freeway
- Construction of the Coral Creek Collector Road A which intersects Geiger Road opposite the Honouliuli WWTP.

In 2009, the diversion of traffic from the Geiger Road-Roosevelt Avenue route is expected to significantly reduce peak hour traffic volumes along Geiger Road by about 40% to 50% as compared to 2006. The Kapolei Parkway near Geiger Road is estimated to attract use by about 1,450 and 1,900 vehicles in the morning and afternoon peak hours, respectively. The peak hour

traffic along Fort Weaver Road is estimated to increase by about 18% to 19% by 2009, as compared to the existing traffic volumes.

Year 2012 traffic volumes along Geiger Road are projected to remain less than the 2006 volumes. The Kapolei Parkway near the project site is estimated to attract use by about 2,600 and 3,400 vehicles in the morning and afternoon peak hours.

2009 TRAFFIC CONDITIONS WITH PROJECT PHASE 1

The development of the Phase 1 portion of the Project is estimated to increase the traffic along Geiger Road between the site and the Kapolei Parkway by about 265 vehicles (+33%) over 2009 volumes without the Project in the morning peak hour and by 268 vehicles (+29.5%) in the afternoon peak hour. The traffic volumes passing through the Geiger Road intersection with Fort Weaver Road are estimated to increase by about 3.1% in the morning peak hour, and 3.5% in the afternoon peak hour as a result of the Phase 1 development.

The peak hour traffic conditions at the key intersections in the vicinity of the Project are summarized in Table S-2. The Without (No) Project conditions in the table reflect the planned roadway projects by 2009.

The addition of the Project Phase 1 traffic would impact the 2009 traffic conditions at key intersections as summarized in the following paragraphs.

- The traffic turning left from the STOP sign-controlled Project Main Driveway onto Geiger Road would experience some delays, LOS D in the morning peak hour and LOS E in the afternoon peak hour. If the narrow median provides an effective refuge area to allow drivers to cross the westbound lanes and wait for a gap in the eastbound traffic to complete their turn, the total peak hour delay and traffic volumes would not satisfy the MUTCD Warrant #3 criteria to allow the consideration of a traffic signal at this intersection. If the median is not effectively used by drivers, then the total peak hour delay for traffic exiting the driveway would greatly exceed the Warrant #3 criteria to consider a traffic signal.
- Short delays (LOS B) are estimated for traffic exiting the proposed Project Right-in/Right-out Driveway onto Geiger Road.
- The Geiger Road intersection with the Kapolei Parkway is projected to operate at very acceptable conditions with the addition of the Project Phase 1 traffic.
- With the Project, the estimated peak hour traffic at the Geiger Road-Fort Weaver Road intersection would approximate 70% to 73% of the estimated intersection capacity. Average delay is estimated at LOS E without or with the Project as a result of the long signal cycle length and split phase signal operation.

Table S-2
2009 TRAFFIC CONDITIONS AT KEY INTERSECTIONS
WITH EWA INDUSTRIAL PARK PHASE 1

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Fort Weaver Rd.- Geiger Rd.	Existing	0.74	70.5	E	0.78	74.1	E
	2009 No Project	0.71	70.1	E	0.67	67.8	E
	2009 With Project	0.73	71.4	E	0.70	70.5	E
Kapolei Pkwy.- Geiger Rd.	Existing	0.63	38.5	D	0.52	38.0	D
	2009 No Project	0.69	33.8	C	0.50	29.2	C
	2009 With Project	0.80	37.9	D	0.59	31.2	C
Geiger Rd.-Project Main Dwy. SB Left	Median Refuge#	0.47	30.3	D	0.77	38.0	E
	No Refuge#	0.86	102.9	F	1.10	122.5	F
Geiger Rd.-Project RIRO Dwy.	With Project#	0.11	11.9	B	0.08	10.0	B
Geiger Rd.- Coral Creek Road A	Existing		NA			NA	
	2009 No Project #	0.04	27.3	D	0.05	24.8	C
	2009 With Project#	0.05	32.6	D	0.06	29.4	D
Roosevelt Ave.- Philippine Sea St.	Existing#	1.29	219.5	F	0.40	24.4	C
	2009 No Project#	0.15	15.6	C	0.11	12.5	B
	2009 With Project#	0.17	16.9	C	0.13	13.9	B
Roosevelt Ave.- Fort Barrette Rd.	Existing#	1.41	218.3	F	1.76	368.5	F
	2009 No Project#	0.56	20.8	C	0.50	22.2	C
	2009 With Project#	0.57	30.0	D	0.51	31.0	D
Fort Weaver Rd.- Renton Rd.	Existing	1.10	118.9	F	1.28	131.1	F
	2009 No Project	0.82	53.9	D	0.87	45.8	D
	2009 With Project	0.83	54.0	D	0.88	45.9	D
Renton Rd.- Tenney St.	Existing#	0.20	15.9	C	0.08	11.9	B
	2009 No Project#	0.28	19.5	C	0.15	17.0	C
	2009 With Project#	0.28	19.6	C	0.15	17.1	C
Renton Rd.- Kapolei Pkwy.	Existing		NA			NA	
	2009 No Project #	0.59	26.9	C	0.53	26.6	C
	2009 With Project #	0.60	26.6	C	0.55	26.6	C

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.

ADPV = Average delay per vehicle, in seconds.

LOS = Level of service.

NA = Not Analyzed

= Conditions with STOP sign control

Wilbur Smith Associates; June 27, 2007.

- The Project traffic would increase average delay for vehicles turning left out of the Coral Creek Road A connection to Geiger Road, but the delay would be at acceptable levels and would not satisfy the MUTCD Warrant #3 criteria to allow consideration a traffic signal.

2012 TRAFFIC CONDITONS WITH PROJECT BUILDOUT

The development of the western Phase 2 portion of the Project site would provide additional Project driveway connections to Roosevelt Avenue (Access 2) about 500 feet east of Philippine Sea Street, and to Renton Road (Access 3) near Haakai Street. The additional connections would reduce the traffic using the Geiger Road driveway (Access 1) as compared to the Phase 1 development. The Renton Road driveway is expected to attract the most use with 50% to 51% of the Project build-out traffic, with the Geiger Road driveway used by about 20% (PM) to 30% (AM) and the Roosevelt Avenue driveway used by 18% (AM) to 25% (PM).

Most of the Project traffic would use Renton Road to access the Kapolei Parkway, with little traffic expected to travel the section of Renton Road east of the Kapolei Parkway or the section west of the Project driveway. The traffic volumes along Renton Road between the Project driveway and the Kapolei Parkway are estimated at about 880 to 900 vehicles in each peak hour, which is similar to the traffic using Renton Road in the 2006 morning peak hour.

With the additional driveways, Geiger Road is estimated to be used by about 400 Project vehicles in each peak hour at build-out, which is similar to the estimated usage with Project Phase 1 and driveway access only to Geiger Road.

Off-Site Intersections

The peak hour traffic conditions at the key intersections in the vicinity of the Project are summarized in Table S-3. The Without (No) Project conditions in the table reflect the planned roadway projects by 2012. Potential issues that would be introduced or modified with Project Build-out in 2012 are summarized in the following paragraphs.

- With the increased traffic from other area developments, the addition of the Project traffic in 2012 morning peak hour would exceed the Geiger Road-Kapolei Parkway intersection capacity by 8% as compared to peak hour traffic at 92% of capacity without the Project.
- The addition of the Project traffic would increase the average delay at the Geiger Road-Fort Weaver Road intersection by 2.6 seconds in the morning peak hour. However, the added 2-seconds would increase the delay from just below the LOS F criteria to just above the criteria. The morning peak hour traffic is estimated at 86% of capacity with the Project, versus 84% without the Project. No physical improvements are warranted by the traffic improvement; the shortening of the extremely long signal cycle length (240 seconds) could improve the average delay.

**Table S-3
2012 TRAFFIC CONDITIONS AT KEY INTERSECTIONS
WITH EWA INDUSTRIAL PARK BUILDOUT**

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Fort Weaver Rd.- Geiger Rd.	Existing	0.74	70.5	E	0.78	74.1	E
	2012 No Project	0.84	79.7	E	0.79	74.0	E
	2012 With Project	0.86	82.3	F	0.83	79.3	E
Kapolei Pkwy.- Geiger Rd.	Existing	0.63	38.5	D	0.52	38.0	D
	2012 No Project	0.92	52.9	D	0.81	36.0	D
	2012 With Project	1.08	100.3	F	0.95	48.9	D
Geiger Rd.- Coral Creek Road A	Existing#		NA			NA	
	2012 No Project#	0.16	58.1	F	0.14	34.8	D
	2012 With Project#	0.21	78.6	F	0.23	60.3	F
Roosevelt Ave.- Philippine Sea St.	Existing#	1.29	219.5	F	0.40	24.4	C
	2012 No Project#	0.23	18.6	C	0.14	14.3	B
	2012 With Project#	0.25	20.1	C	0.17	16.0	C
Roosevelt Ave.- Fort Barrette Rd.	Existing#	0.67	141.5	F	0.63	159.3	F
	2012 No Project	0.64	23.9	C	0.55	20.8	C
	2012 With Project	0.67	23.6	C	0.58	21.4	C
Fort Weaver Rd.- Renton Rd.	Existing	1.10	118.9	F	1.28	131.1	F
	2012 No Project	0.97	69.2	E	0.97	61.9	E
	2012 With Project	0.98	70.1	E	0.97	62.4	E
Renton Rd.- Tenney St.	Existing#	0.20	15.9	C	0.08	11.9	B
	2012 No Project#	0.42	29.0	D	0.18	18.6	C
	2012 With Project#	0.42	29.8	D	0.18	19.0	C
Renton Rd.- Kapolei Pkwy.	Existing		NA			NA	
	2012 No Project	0.76	28.6	C	0.73	26.9	C
	2012 With Project	0.84	37.6	D	1.12	66.9	E

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.

ADPV = Average delay per vehicle, in seconds.

LOS = Level of service.

NA = Not Analyzed

= Conditions for STOP sign control

Wilbur Smith Associates; June 27, 2007.

- The Project traffic would worsen the delays for vehicles turning left out of Coral Creek Road A onto Geiger Road to LOS F from LOS D in the afternoon peak hour, while the delays for the left-turn traffic is estimated at LOS F with or without the Project in the afternoon peak hour. The conditions would not satisfy the MUTCD Warrant #3 criteria to allow consideration of a traffic signal at this location.
- With the addition of the Project, the afternoon peak hour traffic would approximate 12% over the capacity of the Renton Road intersection with the Kapolei Parkway, versus traffic at 73% of capacity without the Project.

Project Access Connections

Traffic conditions with Project Build-out are summarized for the Project Access intersections with the adjacent roadways in Table 5-2 for the morning and afternoon peak traffic hours.

- If the narrow Geiger Road median provides an effective refuge area to allow drivers to cross the westbound lanes and wait for a gap in the eastbound traffic to complete their turn, the vehicles turning left from the STOP sign-controlled Project Main Driveway onto Geiger Road would experience moderate delays (LOS D or E) in both peak hours. If the median is not effectively used by drivers, then average delay could worsen to LOS F in both peak hours. However, the total peak hour delay and traffic volumes would not satisfy the MUTCD Warrant #3 criteria to allow the consideration of a traffic signal at this intersection.
- During the afternoon peak hour, the average delay per vehicle for traffic turning left from the STOP sign-controlled Access 2 driveway onto eastbound Roosevelt Avenue would be at LOS F. However, the estimated cumulative delay and volumes would satisfy the MUTCD Warrant #3 criteria to allow consideration of a traffic signal.
- Although the number of vehicles estimated to turn left from eastbound Roosevelt Avenue into Access 2 driveway would not typically merit the provision of a left-turn storage lane, many of these vehicles are likely be large trucks that may block the through lane while waiting for a longer gap in the opposing traffic to provide sufficient time to cross into the driveway.
- Few if any Project vehicles are expected to turn left out of the Access 3 intersection onto westbound Renton Road. Therefore, the Access 3 approach to Renton Road is expected to operate at very acceptable conditions with STOP control. The relatively low volume of opposing through traffic along Renton Road past the Access 3 intersection should not merit the provision of a left-turn lane on Renton Road.

**Table S-4
2012 TRAFFIC CONDITIONS AT ACCESS CONNECTIONS
WITH EWA INDUSTRIAL PARK BUILDOUT**

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Geiger Rd.-Access 1 SB Left Turn	Median Refuge	0.34	33.3	D	0.73	39.4	E
	No Median Refuge	0.66	95.0	F	1.19	168.2	F
Geiger Rd.- RIRO Dwy.	STOP Control	0.10	13.6	B	0.07	10.1	B
Roosevelt Ave.- Access 2 SB Left	STOP Control	0.24	33.6	D	1.01	107.3	F
Renton Rd.-Access 3 NB	STOP Control	0.13	9.8	A	0.70	20.2	C

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.
ADPV = Average delay per vehicle, in seconds.
LOS = Level of service.

Wilbur Smith Associates; June 27, 2007.

POTENTIAL MITIGATIVE ACTIONS

The following paragraphs identify potential improvements to mitigate the impacts at those intersections that would likely be substantially affected by the Ewa Industrial Park traffic, as well as actions to facilitate transit, bicycle, and pedestrian transportation. The mitigative actions apply to both the Phase 1 and Build-out development unless noted otherwise.

Mitigative Actions at Project Driveways

The following actions are proposed for consideration to improve access to the Project site and minimize impacts to the off-site traffic flow.

Project Access 1 Driveway to Geiger Road

Left-turn Lane on Eastbound Geiger Road Approach – A left-turn lane should be provided with a full-width storage length of 200 feet plus 75 feet taper.

Traffic Signal Control – The estimated conditions after the Project Buildout would not warrant a traffic signal. However, the interim higher traffic volumes before the other

access driveways are open may result in much longer delays that might satisfy the warrant and merit signal installation. The construction of the driveway connection to Geiger Road should provide the conduit and boxes that would be needed within the paved roadway in the event signal installation is necessary in the future. The conditions should be monitored to determine if a signal is appropriate.

A signal would be more likely warranted if the Project Access 1 and Gentry Coral Creek Road A connections to Geiger Road are aligned opposite of each other to create a single intersection. The Project Team should meet with Gentry Company and City DPP staff to investigate the possible relocation to form a four-way intersection.

Project Access 2 Driveway Connection to Roosevelt Avenue

Traffic Signal Control – The estimated conditions after the Project Buildout would warrant a traffic signal. The construction of the driveway connection to Roosevelt Avenue should provide the conduit and boxes that would be needed within the paved roadway in the event signal installation is necessary in the future.

Left-turn Storage Lane on Eastbound Roosevelt Avenue Approach – A left-turn lane is proposed with a full-width storage length of 175 feet plus 75 feet taper.

Project Access 3 Driveway Connection to Renton Road

No modifications are proposed.

Mitigative Actions for Off-Site Roadways

The following actions are proposed at those locations anticipated to be substantially affected by the Project traffic.

Geiger Road-Kapolei Parkway Intersection

- Provide a right-turn lane on the westbound approach

Renton Road-Kapolei Parkway Intersection

- Provide a right-turn lane on the westbound approach.

Public Transit, Bicycles, and Pedestrians

Actions that could mitigate the identified issues and also encourage use of these travel modes for access to the Project are outlined in the following list.

Public Transit

- The Project Team should coordinate with the Gentry Company and with the City DTS ~~and The Bus staffs~~ to identify location of bus stops along Geiger Road that best serve both developments (Phase 1).

- The Project Team should coordinate with the City DTS ~~and The Bus~~ staffs to identify location of a new or relocated bus stop along Roosevelt Avenue to serve the Project.
- Bus shelters and seating should be provided at the bus stops located adjacent to the Project accesses along Geiger Road, Roosevelt Avenue, and the Kapolei Parkway (near Renton Road).
- The Project Team should review the on-site driveway and sidewalk plans with the City DTS staff to ensure accommodation of TheHandiVan operations for access the Project.

Bicycles

- The preliminary design plans for the widening of Geiger Road by Gentry Homes, Ltd. include construction of a bicycle path along the mauka side of the roadway from the Kapolei Parkway to the Honouliuli WWTP. The Project Team should work with the Gentry Company and City DTS staff to ensure a convenient and safe bicycle path crossing of the planned Project driveway connections to Geiger Road (Phase 1).
- The State DOT has plans to develop a regional bike path adjacent to the OR&L railway. In compliance with the Ewa Development Plan (August, 1997), the developer is maintaining a 40' setback for structures (except for a security wall/fence) within the new development along the entire length of the OR&L boundary.

Pedestrians and Walkways

- A sidewalk connection should be provided from within the Project to connect to the Geiger Road bicycle/multi-purpose path to avoid pedestrians walking within the Main Driveway traffic lanes (Phase 1).
- Construct a sidewalk along the Project Access 2 and 3 driveways between the Project and the adjacent roadways to provide safe pedestrian linkages to the adjacent off-site roadways.

Final 6-27-07

Chapter 1 INTRODUCTION

The Ewa Industrial Park development (the Project) is planned for the approximately 48.395 acres of vacant land located between Geiger and Renton Roads in the Ewa District of Oahu (Figure 1-1). The “L” shaped site is located along the east and mauka sides of the City and County of Honolulu Honouliuli Waste Water Treatment Plant (WWTP). The Project site is bounded on the east by the Coral Creek Golf Course and on the north by the Oahu Railway & Land (OR&L) tracks. The south side of the site is bordered by Geiger Road, the City WWTP, and the Kalaeloa Redevelopment Area.

The Project is planned for development with light industrial uses to include light manufacturing, warehousing, distribution, and self-storage facilities. The Project is also expected to include a small amount of accessory retail space such as a convenience store. The concept plan for the Project is depicted in Figure 1-2.

Development of the Project is planned in two phases with the approximately 23.3 acres along the eastern boundary of the site included in Phase 1, and the remaining 25.095 acres in the central and western portions of the site included in Phase 2. The Phase 1 area has previously received State Land Use Commission approval for urban use. Development and occupancy of the Phase 1 area is anticipated by the end of 2009, while the build-out of Phase 2 is expected by the end of 2012.

This study provides an analysis of the traffic impacts of the Phase 1 Project at yearend 2009 and of Project build-out at yearend 2012. This report:

1. Provides the estimated numbers of vehicle trips that would be generated by the Project.
2. Provides the resultant weekday morning and afternoon peak hour traffic volumes on the adjacent roadways and traffic conditions at key intersections in year 2009 with Phase 1 portion of the Project.
3. Provides the resultant weekday morning and afternoon peak hour traffic volumes on the adjacent roadways and traffic conditions at key intersections in year 2012 with the Project Build-out.
4. Identifies roadway modifications that may be appropriate to mitigate Project Phase 1 and Project Build-out transportation impacts on the adjacent streets.

This traffic study for the Ewa Industrial Park Project focuses on those roadways near the site that would be most directly affected by the Project traffic and would be most likely to need improvements to accommodate the Project traffic.



LANDCOURT LOT 4378
 48.395 AC.
MAY 24, 2004

APPROX. SCALE: 1"=400'

0' 150' 300' 600' 900'

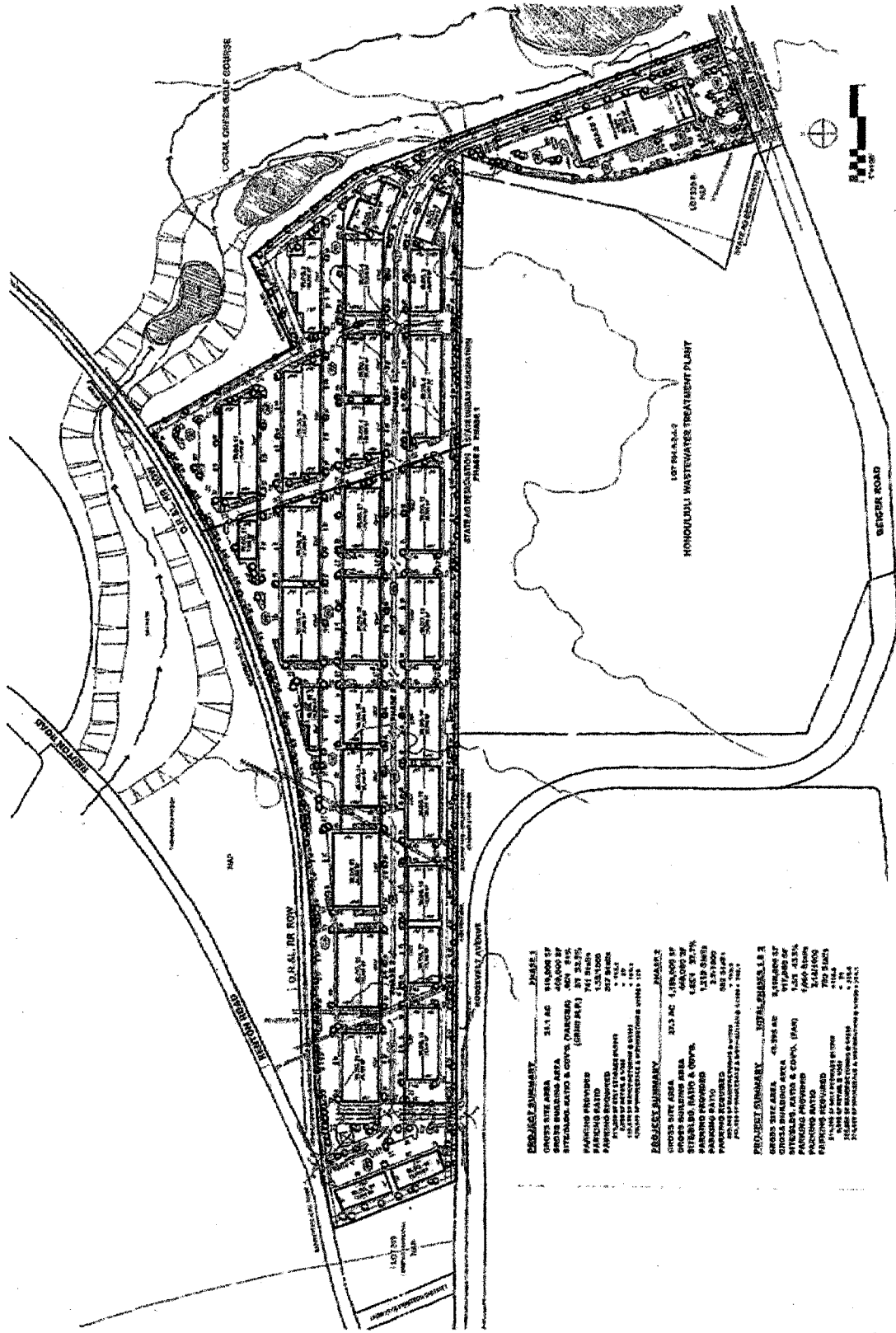
Wilbur Smith Associates

421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE: (919) 755-0583
 FAX: (919) 832-8798

EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII

PROJECT LOCATION

FIGURE 1-1
 SCALE: NONE



PROJECT SUMMARY

PHASE 1	
GROSS SITE AREA	26.1 AC
NET BUILDING AREA	460,000 SF
NET PARKING AREA	277,000 SF
NET TOTAL AREA	737,000 SF
NET BUILDING PERCENTAGE	62.4%
NET PARKING PERCENTAGE	37.6%
NET TOTAL PERCENTAGE	100%
PHASE 2	
GROSS SITE AREA	20.5 AC
NET BUILDING AREA	460,000 SF
NET PARKING AREA	277,000 SF
NET TOTAL AREA	737,000 SF
NET BUILDING PERCENTAGE	62.4%
NET PARKING PERCENTAGE	37.6%
NET TOTAL PERCENTAGE	100%

PROJECT SUMMARY

PHASE 1 & 2	
GROSS SITE AREA	46.6 AC
NET BUILDING AREA	920,000 SF
NET PARKING AREA	554,000 SF
NET TOTAL AREA	1,474,000 SF
NET BUILDING PERCENTAGE	62.4%
NET PARKING PERCENTAGE	37.6%
NET TOTAL PERCENTAGE	100%

EWA INDUSTRIAL PARK MASTERPLAN **HONOLULU, EWA, OAHU, HAWAII** **TAKG 9-1-89/03** **SITE PLAN A**

421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE : (919) 755-0583
 FAX : (919) 832-8798



EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII

PRELIMINARY SITE PLAN

FIGURE 1-2

SCALE: NONE

METHODOLOGY AND ASSUMPTIONS

The general methodology and assumptions used in the forecasting and analysis of traffic impacts with the Kapolei Commercial Development Project are outlined in the following sections.

Analysis Scenarios

The traffic study examines the traffic needs of the Phase 1 development and the Phase 2 build-out of the Project site based on the traffic analysis scenarios:

- **Year 2009 Without Project** – These forecasts and analysis reflect the anticipated development and roadway projects that are expected to occur within the study area without the Ewa Industrial Park Project. This scenario provides a baseline from which to assess the impacts of the Project Phase 1.
- **Year 2009 With Project Phase 1** – The traffic conditions were analyzed for 2009 with development of only the Phase 1 area of the Project, with access to Geiger Road.
- **Year 2012 Without Project** – These forecasts and analysis reflect the anticipated development and roadway projects that are expected to occur within the study area without the Ewa Industrial Park Project. This scenario provides a baseline from which to assess the impacts of the Project Build-out.
- **Year 2012 With Project Build-out** – The traffic conditions were analyzed for 2012 with full build-out of the Ewa Industrial Park with the expanded area allowing access to Geiger Road, Roosevelt Avenue, and Renton Road.

Forecast Methodology and Assumptions

The traffic growth *without* the Project was forecast for years 2009 and 2012 through the following methodologies:

- Planned new roadways expected to be in place by 2009 and 2012 were identified through discussions with City and State agencies.
- Area developers provided the location, type, and general timing of future development in the vicinity of the Project.
- The existing traffic (2006 counts) was reassigned to the planned future roadways for 2009 and 2012.
- A traffic growth factor was calculated and added to the 2006 traffic volumes for each of the forecast years.

- Wilbur Smith Associates (WSA) staff estimated the peak hour vehicle trip generation for each of the potential developments where trip estimates were not available from traffic impact reports for those projects.
- The origin/destination of trips for the new developments were based on a trip distribution for the Ewa area as developed from the OMPO regional model.
- The traffic to/from the new developments was assigned to the area roadway system.

The numbers of new trips generated by the Project were estimated using standard trip generation rates compiled by the Institute of Transportation Engineers (ITE).¹ The origins and destinations of the new trips were based on the trip distribution percentages developed from the Oahu Metropolitan Planning Organization (OMPO) regional travel forecasting model.

The general assumptions regarding the new development and roadway improvements in the area are outlined in the following section.

Non-Project Developments by 2009 – A substantial amount of new development is expected between 2006 and 2009. The additional development near the Project site is expected to include the following areas:

- The development of about one-half of the Ewa by Gentry Makai Area.
- The development of about one-half the Gentry commercial property across from the Project site.
- Continued development of the Ocean Pointe area.
- The start of development of the DHHL West area near the future junction of the Kapolei Parkway and North-South Road.
- The start of development of the University of Hawaii West Oahu (UHWO) campus and surrounding area near the future junction of the North-South Road with Farrington Highway.

Future Roadways by 2009 – The traffic assignments and intersection analyses reflect the construction of a number of roadway projects that would affect traffic conditions in the vicinity of the Project. The new roadways expected by 2009 that would most affect the Project area traffic conditions include:

- The widening of the two-lane section of Geiger Road between the Kapolei Parkway and the Honouliuli Waste Water Treatment Plant (WWTP).

¹ *Trip Generation, Seventh Edition*, Institute of Transportation Engineers, 2003.

- Widening of Fort Weaver Road from St. Francis Hospital to makai of the Geiger Avenue intersection.
- Completion of the Kapolei Parkway between the Villages of Kapolei and Ocean Pointe.
- Construction of the North-South Road from the Kapolei Parkway to the H-1 Freeway with an interchange at the Freeway.

Non-Project Developments by 2012 – The new development near the Project site by 2012 would include the development listed for 2009 plus the following areas:

- Completion of the Ewa by Gentry Makai Area.
- The completion of the Gentry commercial property across from the Project site.
- Continued development of the Ocean Pointe area.
- Continued development of the DHHL West area near the future junction of the Kapolei Parkway and North-South Road.
- Continued development of the University of Hawaii West Oahu (UHWO) campus and surrounding area near the future junction of the North-South Road with Farrington Highway.

Future Roadways by 2012 – No new major roadway improvements are included in 2012 beyond those identified for 2009.

Intersection Analysis Methodology

Traffic conditions at intersections controlled by traffic signals or STOP signs were analyzed using the methodology set forth in the *2000 Highway Capacity Manual*, as summarized in Appendix A, and the Synchro analysis software. The analyses of traffic signal-controlled intersections were based on the following operational assumptions:

- Use of 4-second yellow clearances and 1-second all-red intervals.
- On major through roadways, left-turns allowed only with protected left-turn phases.
- Optimized split of signal timing among the signal phases for future years.

REPORT ORGANIZATION

This traffic impact analyses for the Ewa Industrial Park Project has been organized into the following chapters:

1. Introduction
2. Existing Conditions – Describes the existing roadway facilities, public transportation services, traffic volumes, and traffic conditions in the vicinity of the Project site.
3. Future Conditions without the Project – Describes the traffic increases on area roadways and traffic conditions at key intersections in years 2009 and 2012 without the Project
4. 2009 With Project Phase 1 – Describes the traffic increases on area roadways and traffic conditions at key intersections with the development of the portion of the Project (21.1 acres) that has already received State LUC approval for urban development.
5. 2012 With Project Build-out (Scenario A) – Describes the traffic increases on area roadways and traffic conditions at key intersections in year 2012 with the full development of the entire Project site.
6. 2012 With Project Build-out (Scenario B) – Describes the traffic increases on area roadways and traffic conditions at key intersections in year 2012 with the full development of the entire Project site without Renton Road access (Scenario B).

Final 6-27-07

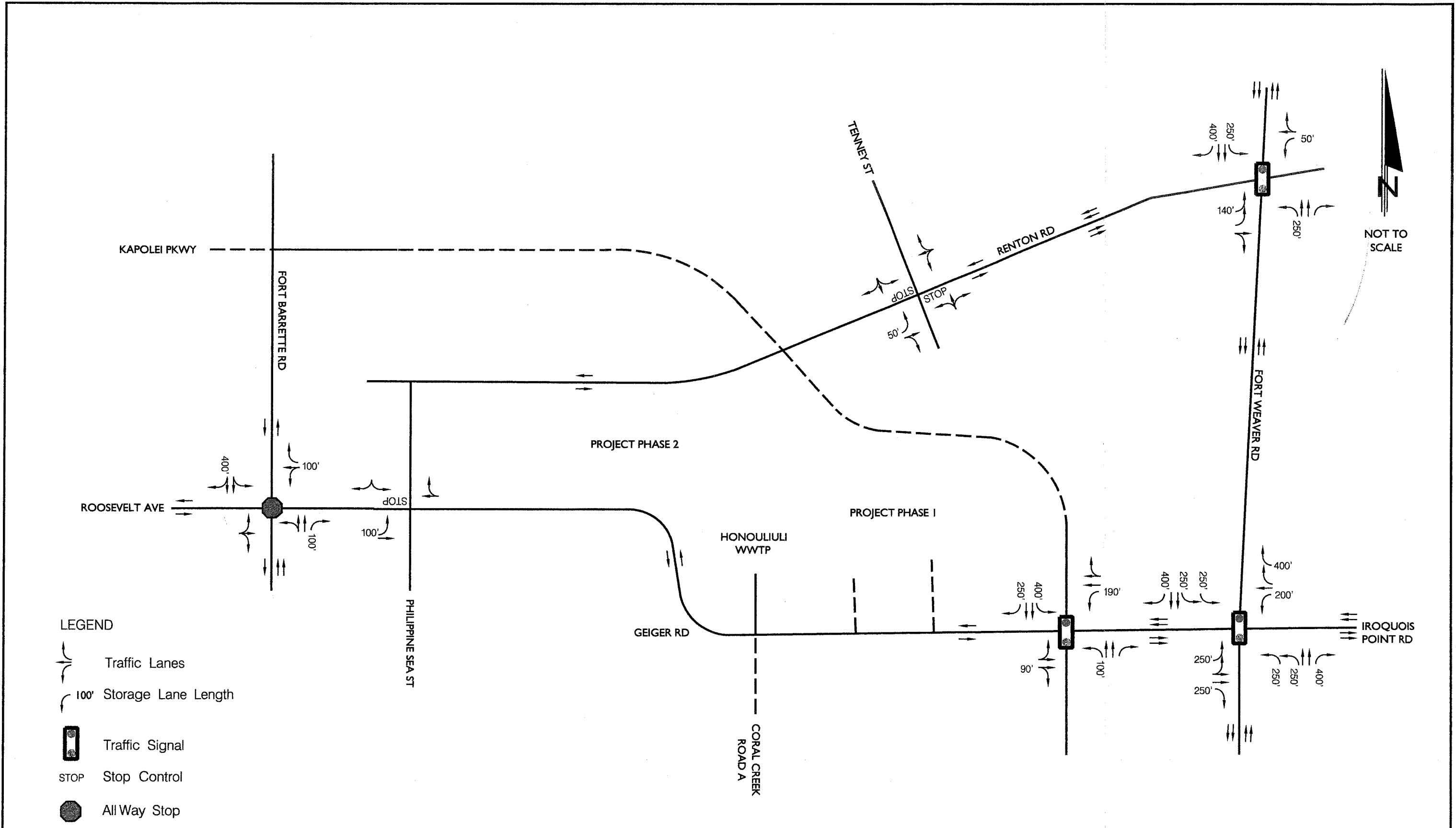
Chapter 2 EXISTING CONDITIONS

The traffic survey was made on August 22-23, 2006, approximately three weeks after the start of the regular school semester at the nearby Ewa and Holomua Elementary Schools as well as the area middle and high schools.

EXISTING ROADWAY SYSTEM

The existing major roadway system near the Ewa Industrial Park development (the Project) area is depicted in Figure 2-1. The major roadways within the area are discussed in the following paragraphs.

- **Geiger Road and Roosevelt Avenue** – This major roadway provides east-west circulation between Fort Weaver Road and the Kalaeloa Redevelopment Area (former Barbers Point NAS). The roadway continues within the Kalaeloa Redevelopment Area as Roosevelt Avenue with Roosevelt Avenue extending west of Fort Barrette Road. Geiger Road is a four-lane undivided roadway from Fort Weaver Road to just west of the Kapolei Parkway with a two-lane roadway extending westward into the Redevelopment Area. Traffic signal controls are provided at the intersections between the Kapolei Parkway and Fort Weaver Road. Four-way STOP controls are used at the intersection of Roosevelt Avenue with Fort Barrette Road/Enterprise Avenue.
- **Kapolei Parkway** - This roadway is planned to be a major east-west traffic artery connecting the Ewa Beach, East Kapolei, City of Kapolei, and Ko Olina areas. Within the Project area, the only completed portions of the roadway are the two-block segments on either side of Geiger Road. Construction is nearing completion for the other sections of the roadway makai of Geiger Road, while construction is beginning on the segment mauka of Geiger Road. These Kapolei Parkway segments near the Project site have a median-divided roadway with two or more traffic lanes in each direction and a bicycle lane in each direction.
- **Fort Weaver Road** – This major artery connects the communities in the eastern section of the Ewa District to the H-1 Freeway and to Farrington Highway. Fort Weaver Road is a four-lane roadway with median in the vicinity of the Project site, with paved shoulder areas and limited access. Traffic signal controls are provided at both the Geiger Road and Renton Road connections to Fort Weaver Road.



NOT TO SCALE

LEGEND

- Traffic Lanes
- 100' Storage Lane Length
- Traffic Signal
- Stop Control
- All Way Stop



421 FAYETTEVILLE STREET SUITE 1303
RALEIGH, NORTH CAROLINA 27601
TELE : (919) 755-0583
FAX : (919) 832-8798

EWA INDUSTRIAL PARK
TRAFFIC IMPACT ANALYSIS REPORT
HONOLULU, HAWAII

EXISTING LANES AND
TRAFFIC CONTROL

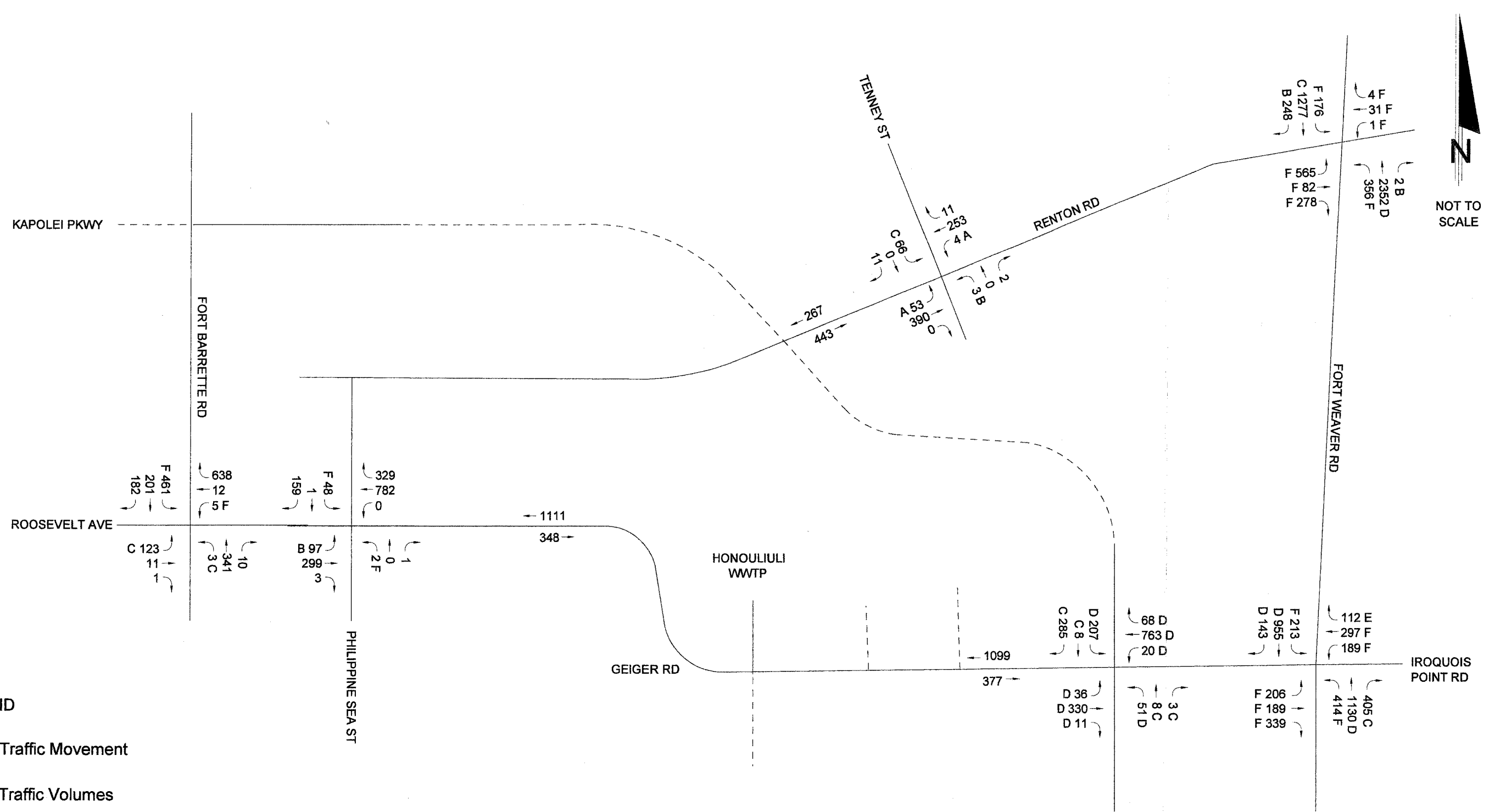
FIGURE 2-1

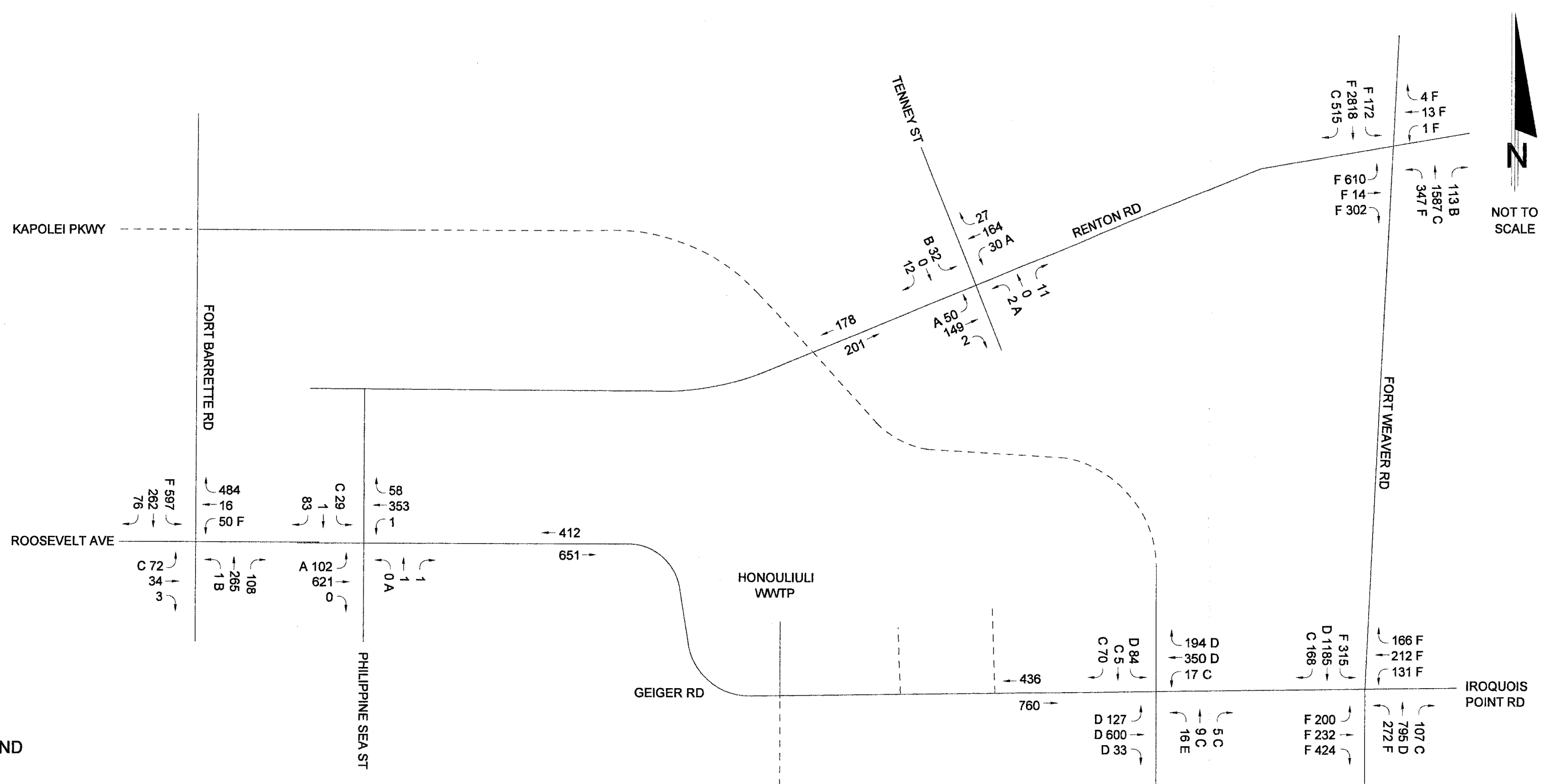
- **Renton Road** – The section of Renton Road west of the Kapolei Parkway alignment is a two-lane undivided roadway. East of the Parkway, the roadway has a landscaped median with one lane in each direction from the Parkway to Pahika Street, and two lanes in each direction between Pahika Street and Fort Weaver Road. The Ewa Elementary School is located along Renton Road east of the Kapolei Parkway, as are several daycare facilities.
- **Philippine Sea Street** – This two-lane roadway provides access to several buildings within the Kalaeloa Redevelopment Area along the makai side of Roosevelt Avenue. There is an unnamed roadway opposite Philippine Sea Street that extends one block outside the Kalaeloa Redevelopment Area to Renton Road, with this section of roadway also referred to as Philippine Sea Street for the purpose of this study. The roadway crosses the Oahu Railway and Land (OR&L) track line, with the Hawaii Rail Preservation maintenance yard located along the west side of the roadway mauka of the Kalaeloa Redevelopment Area.
- **Fort Barrette Road** – This major north-south roadway provides access between the H-1 Freeway, Farrington Highway, the Kapolei Parkway, and Roosevelt Avenue. The roadway currently has a single travel lane in each direction with turn lanes at intersections. The intersection with Roosevelt Avenue is controlled by STOP signs on all four approaches.
- **H-1 Freeway** – Although not shown in Figure 2-1, this freeway is the major east-west roadway in the Ewa District and connects the Ewa area to central Honolulu and other areas of Oahu. Project area traffic access to the freeway is primarily via the Fort Weaver Road connection to the Kunia Interchange, with access also available at the Makakilo Interchange via Fort Barrette Road. H-1 Freeway has eight travel lanes east of the Kunia Interchange and six lanes west of the interchange.

EXISTING TRAFFIC VOLUMES




Wilbur Smith Associates (WSA) conducted special traffic turning movement counts at the key intersections near the Ewa Industrial Park site during the weekday morning and afternoon peak commute traffic periods on August 22-23, 2006. Traffic counts were made for each 15-minute period between 6:00 and 8:30 AM, and between 3:30 and 6:30 PM. The 15-minute counts were used to identify the peak one-hour volumes at the study intersections in the morning and afternoon commute periods. The peak one-hour volumes generally started at 6:45 or 7:00 AM in the morning commute period, and 4:00 to 4:30 PM in the afternoon peak period.

The existing weekday morning peak one-hour traffic volumes are depicted in Figure 2-2 and the peak weekday afternoon volumes are depicted in Figure 2-3. At most locations, the afternoon peak hour two-way traffic volumes are higher than those in the morning peak hour





LEGEND

-  Traffic Movement
-  Traffic Volumes
-  Level of Service for Traffic Movement



ENGINEERS
PLANNERS
ECONOMISTS

421 FAYETTEVILLE STREET SUITE 1303
RALEIGH, NORTH CAROLINA 27601
TELE : (919) 755-0583
FAX : (919) 832-8798

EWA INDUSTRIAL PARK
TRAFFIC IMPACT ANALYSIS REPORT
HONOLULU, HAWAII

2006 PM PEAK HOUR TRAFFIC

FIGURE 2-3

Traffic volumes along the two-lane section of Geiger Road adjacent to the Project site approximated 1,470 vehicles in the morning peak hour, with about 75% of the vehicles westbound towards the Kalaeloa Redevelopment Area and the City of Kapolei. About 30% of the westbound vehicles along Geiger Road/Roosevelt Avenue turned right at Philippine Sea Street to access Renton Road. Most of this traffic likely was enroute to the Ewa Elementary School or one of the day care facilities located along Renton Road. Most of the other westbound vehicles along Geiger Road continued west to Fort Barrette Road and turned mauka towards the City of Kapolei and H-1 Freeway.

In the afternoon peak hour, approximately 1,200 vehicles passed the Project site along Geiger Road, with about 65% eastbound. The eastbound traffic pattern in the afternoon reflects similar pattern to the morning westbound traffic, with the exception that there are fewer turns to/from Philippine Sea Street to access Renton Road.

Traffic conditions are very congested along Renton Road in the morning peak hour as a result of the traffic turning into and out of the school and daycare centers. Large numbers of students also cross the street enroute to the school or to school bus and TheBus stop locations, with the school crossing guard operation in front of the elementary school resulting in traffic queues extending for several blocks in each direction.

The traffic counts at Tenney Road indicate that the traffic volumes along the western section of Renton Road amount to half or less of the volumes in the eastern section of the street.

EXISTING INTERSECTION TRAFFIC CONDITIONS

Traffic conditions were analyzed for the weekday morning and afternoon peak one-hour traffic volumes. The analyses were made for the key intersections near the Project site using the methodology and criteria described in Appendix A. The overall traffic conditions at each of the key intersections are summarized in Table 2-1 for the weekday morning and weekday afternoon peak traffic hours.

The traffic signal operation at the Fort Weaver Road intersection with Geiger Road/Iroquois Point Road operates with an extremely long cycle length (240 seconds) in both peak periods, and with split signal phases for the Geiger Road and Iroquois Point Road approaches. Although existing traffic volumes approximate only 77-78% of the intersection capacity, the signal operation results in overall average delay of LOS E for the intersection in both peak hours. The signal operations result in LOS F and average delays of about two minutes each for the Geiger Road traffic, Iroquois Point Road traffic, and the left turns from Fort Weaver Road.

**Table 2-1
2006 TRAFFIC CONDITIONS AT KEY INTERSECTIONS**

Intersections	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
	V/C	ADPV	LOS	V/C	ADPV	LOS
Geiger Rd.-Iroquois Point Rd.-Fort Weaver Rd.	0.74	70.5	E	0.78	74.1	E
Geiger Rd.-Kapolei Pkwy	0.63	38.5	D	0.52	38.0	D
Roosevelt Ave.-Philippine Sea St. Makai-bound Left-turn	1.29	219.5	F	0.40	24.4	C
Roosevelt Ave.-Fort Barrette Rd.	0.67	141.5	F	0.63	159.3	F
Renton Rd.-Fort Weaver Rd.	1.10	118.9	F	1.28	131.1	F
Renton Rd.-Tenney St. Makai-bound Left Turn	0.20	15.9	C	0.08	11.9	B

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.
ADPV = Average delay per vehicle, in seconds.
LOS = Level of service.

Wilbur Smith Associates; September 8, 2006.

Morning and afternoon peak hour traffic at the Geiger Road intersection with the Kapolei Parkway operate at acceptable levels with volumes at 63% or less of capacity and with average delay at LOS D. The traffic flow on the eastbound and westbound approaches of Geiger Road are adversely affected by the transition from the four-lane section to a two-lane roadway just over 100 feet west of the intersection, which results in low use of the outside lane on these two approaches.

The high volume of through traffic along Roosevelt Avenue results in very long delays for traffic turning left from the Philippine Sea Street makai-bound approach in the morning peak hour, which results in a long queue of traffic waiting to turn. Lower volumes of both the through traffic along Roosevelt Avenue and turning traffic from the side street result in short delays in the afternoon peak hour.

The high volume of traffic between the east leg of Roosevelt Avenue and the mauka leg of Fort Barrette Road results in long delays at this four-way STOP sign-controlled intersection. In the morning peak hour, the traffic queue on the westbound approach of Roosevelt Avenue was

observed to extend to Midway Road. In the afternoon peak hour, the makai-bound traffic queue on the Fort Barrette Road approach had extended to the vicinity of Kamaaha Avenue by 4:00 PM and later extended through the Makakilo Drive intersections with Farrington Highway and the H-1 Westbound Off-ramp.

Congested traffic conditions occurred at the Renton Road intersection with Fort Weaver Road during both the morning and afternoon peak hours. Extensive queuing and delays occurred along Fort Weaver Road for the mauka-bound traffic in the morning peak hour and for makai-bound traffic in the afternoon peak hour. The left-turn traffic from eastbound Renton Road experienced very long delays in the morning peak hour with the traffic queue extending west of Pahika Street during the count. The traffic operations on Fort Weaver Road were affected by spillback of traffic from upstream intersections in both peak hours.

Traffic at the Renton Road intersection with Tenney Street operated with short delays in both peak traffic hours. Traffic queues did develop on the sections of Renton Road near the Elementary School during the morning peak hour, but the delays and queues did not extend far enough west to affect the traffic conditions at this intersection.

PUBLIC TRANSPORTATION

The City and County of Honolulu provides public transportation services to the areas adjacent to the Kapolei West development area. These include a number of TheBus bus routes that pass in the vicinity of the Project site. TheHandiVan provides door-to-door service for persons who have difficulty in accessing the fixed-route bus service.

TheBus Routes – The existing bus routes that provide service near the Ewa Industrial Park project site include the following:

Route 41 Kapolei-Ewa Beach – This trunk route provides regular service between the Kapolei Transit Center and the Ewa Beach area with the route using portions of Fort Barrette Road, Roosevelt Avenue, Geiger Road, and Fort Weaver Road. Bus stops are provided east of the Project site just west of the Kapolei Parkway intersection. The route provides service at an approximately half-hour frequency from about 5:00 AM until 10:00 PM.

Route 42 Ewa Beach-Waikiki – This regional trunk route provides regular bus service along the Fort Weaver Road, with the service extending through the Waipahu, Pearl City, and central Honolulu areas. Near the Project site, it services bus stops on Fort Weaver Road near the Renton Road and Geiger Road intersections. Service is provided seven days a week from about 4:00 AM until after midnight, with service frequency varying between about 15 and 30 minutes between buses.

Route 44 Waipahu-Ewa Beach – This route provides regular bus service within the Fort Weaver Road corridor with the route providing service along a loop west of Fort Weaver Road following Renton Road, Philippine Sea Street, Roosevelt Avenue, Geiger Road, Kapolei Parkway, and Kolowaka Drive. Near the Project site, it services bus stops on Geiger Road west of the Kapolei Parkway intersection. Service is provided seven days a week from about 5:00 AM to 11:30 PM, with service once an hour.

Route 91 Ewa Beach Express – This express route provides service from Ewa Beach to the Downtown Honolulu area, with the route using Fort Weaver Road. The route provides nine Honolulu-bound bus trips in the morning commute period and eight Ewa Beach-bound bus trips in the afternoon commute period.

Route 101 Ewa Gentry Express – This express route provides service from Ewa Gentry area near the Project site to the Downtown Honolulu area, with the route using Fort Weaver Road. The Ewa Gentry segment of the route provides service along a one-way clockwise loop using Geiger Road, the Kapolei Parkway, and Kolowaka Drive. The route provides five Honolulu-bound bus trips in the morning commute period and five Ewa Gentry-bound bus trips in the afternoon commute period.

Route 201 Waipahu-Waikiki via Farrington Highway Express – This express route provides service from Ewa Beach to the Waikiki area, with the route using Fort Weaver Road. On weekdays, the route provides six Waikiki-bound bus trips in the morning commute period and three Ewa Beach-bound bus trips in the afternoon commute period. The route also provides four morning trips and three afternoon trips on State holidays and on weekends.

BICYCLES AND PEDESTRIANS

A bicycle path is provided along both sides of Fort Weaver Road through the study area. Bicycle lanes are provided along the block of Kapolei Parkway between Kamokila and Kalaeloa Boulevards. Along the other major roadways, bicycles either use paved shoulder areas, wide outside lanes, or travel within the regular traffic lane.

Sidewalk facilities are provided along both sides of the Kapolei Parkway, Renton Road, and the section of Geiger Road east of the Kapolei Parkway. No sidewalks are provided along the sections of Geiger Road, Roosevelt Avenue, nor Renton Road adjacent to the Project site.

Final 6-27-07

Chapter 3

FUTURE CONDITIONS WITHOUT PROJECT

Future travel on the area roadways without the Ewa Industrial Park development (the Project) was forecast by estimating traffic to/from other new developments near the Project site, and then adding a growth factor to account for increased traffic to other areas. The traffic assignments reflected the planned new roadways expected to be in place by each analysis year. The overall methodology used to estimate future traffic for years 2009 and 2012 without the Project was as follows:

- Planned new roadways expected to be in place by 2009 and 2012 were identified through discussions with City and State agencies.
- Area developers provided the location, type and general timing of future development in the vicinity of the Project.
- The existing traffic (2006 counts) was reassigned to the planned future roadways for 2009 and 2012.
- A traffic growth factor was calculated and added to the 2006 traffic volumes for each of the forecast years.
- Wilbur Smith Associates (WSA) staff estimated the peak hour vehicle trip generation for each of the potential developments where trip estimates were not available from traffic impact reports for those projects.
- The origin/destination of trips for the new developments were based on a trip distribution for the Ewa area as developed from the OMPO regional model.
- The traffic to/from the new developments was assigned to the area roadway system.

Traffic conditions were then analyzed for the key intersections within the study area.

FUTURE DEVELOPMENT AND ROADWAYS

A substantial portion of the vacant lands near the Project site are expected to be developed by 2012.

Development Near the Project Site

A number of major new developments are planned to begin construction in the next few years in the vicinity of the Project site. Those developments that are expected to contribute substantial increases to area traffic by 2009 and 2012 are identified in the following sections.

2006-2009 Development – The new developments or additions to existing development, expected between the traffic counts and the end of 2009 include the following projects:

- ◆ **Ewa by Gentry Makai Area** – Discussions with Gentry Companies staff¹ indicated that the development could be completed by 2012. The residential uses within the Makai development, as described in that project's TIAR, were assumed to be 50% developed by the end of 2009.

- ◆ **Coral Creek Industrial Park** –The site is expected to be developed with a mix of industrial services, light industrial, and storage uses, with some convenience retail uses, based on discussions with Gentry Companies staff². Approximately one-half of the approximately 30-acre site, located makai of Geiger Road opposite the City WWTP, is expected to be developed by 2009.

- ◆ **Ocean Pointe** – The development of the large project located makai of the Ewa by Gentry project is planned to extend well beyond 2009, with the development primarily adding traffic to Fort Weaver Road and the Kapolei Parkway. The traffic from this development was assumed to be accounted for through the traffic growth factor applied to the mauka-makai traffic through the study area.

- ◆ **DHHL East Kapolei Development** – This development is located near the junction of the planned Kapolei Parkway with the North-South Road. The initial development is planned to include a new administrative office for DHHL (53,000 square feet of floor area) and about 403 single family homes. These were expected to be complete by the end of 2009.

- ◆ **University of Hawaii West Oahu (UHWO) Campus** – The construction of the new campus is expected to begin in 2008 with the full development to accommodate 7,600 students completed by 2015. The development was assumed to be 15% complete by yearend 2009.

Traffic for other new, infill, or expanded developments was assumed to be reflected in the traffic background growth rate.

Additional 2010-2012 Development – The additional development expected within the study area by yearend 2012 includes the following:

- ◆ **Ewa by Gentry Makai Area** –The residential uses within the Makai development, as described in that project's TIAR, were assumed to be fully developed by the end of 2012.

- ◆ **Coral Creek Industrial Park** –The remainder of the site is expected to be developed with a mix of industrial services, light industrial, and storage uses, with some convenience retail uses by 2012.

¹ Telephone discussion with Mr. Joe Fadrowsky, The Gentry Companies, on September 6, 2006.

² Telephone discussion with Mr. Joe Fadrowsky, The Gentry Companies, on September 12, 2006.

- ◆ **Ocean Pointe** – The development of the large project located makai of the Ewa by Gentry project is planned to extend well beyond 2012, with the development primarily adding traffic to Fort Weaver Road and the Kapolei Parkway. The traffic from this development was assumed to be accounted for through the traffic growth factor applied to the mauka-makai traffic through the study area.
- ◆ **DHHL East Kapolei Development** – Any additional development between 2009 and 2012 was assumed to be included in the background traffic growth rate.
- ◆ **University of Hawaii West Oahu (UHWO) Campus** – The development was assumed to generate 57% of build-out traffic by yearend 2012.
- ◆ **Ho'opili** – This East Kapolei development by D.R. Horton Hawaii is expected to begin about 2010 and extend for a period of 20 years. The initial development would likely occur near the new North-South Road connection to the H-1 Freeway and along Farrington Highway. Since this location would likely result in limited traffic through the Project study area, the Ho'opili traffic was assumed to be reflected in the area background traffic growth rate.

Traffic for other new or infill developments was assumed to be reflected in the traffic background growth rate.

Planned Roadway Improvements in 2009

A number of new roadways are planned for the area by the 2012 analyses year, with most of these anticipated by yearend 2009. The roadway improvements assumed to be in place *without* the Ewa Industrial Park development are discussed in the following sections.

The anticipated roadway network and numbers of traffic lanes near the Project site in 2009 are depicted in Figure 3-1. Descriptions of those roadway improvements that most directly affect the Project are included in the following paragraphs.

Fort Weaver Road Widening – The roadway is planned for widening to six through lanes near the Project site, with the widening extending from the existing six-lane section near St. Francis Hospital to approximately 900 feet makai of the Geiger Road intersection. The design plans have been completed with the project expected to be advertised for bid before yearend 2006. Construction is expected to be completed by the end of 2008. The widening project will not include any additional turn lanes at the study intersections.

Kapolei Parkway – The sections of the Kapolei Parkway makai of Geiger Road and between Kolowaka Drive and Renton Road were nearing completion at the time of the traffic counts. Completion of the remaining sections by the City and by DHHL to connect to the North-South Road and to the completed section in the Villages of Kapolei is expected before yearend 2009. These sections of the roadway would be constructed as a six-lane roadway with median divider and separate left-turn lanes at cross streets. Once the roadway has been connected to Fort

Barrette Road, the Kapolei Parkway would provide the primary access route between the Geiger Road area and the City of Kapolei and divert much of the current traffic use of Roosevelt Avenue between the Fort Weaver Road corridor and Fort Barrette Road. This section of the Parkway would also provide access from the Fort Weaver Road corridor to the planned North-South Road.

Although the initial construction is planned to include STOP sign control of the Renton Road approaches at that intersection, the City plans to monitor traffic conditions to assess whether a signal would be warranted by the actual traffic volumes.

North-South Road and Interchange – The section of the North-South Road between the Kapolei Parkway and the H-1 Freeway, and the interchange ramps are expected to be completed by 2009. The initial construction is planned as a three-lane roadway.

Geiger Road Widening – The Gentry Homes, Ltd. will be widening a portion of the two-lane section of Geiger Road as a condition of their Makai Area development. The road would be widened to two lanes in each direction with left-turn lanes at cross streets and major driveways. The widening is expected to extend along the makai side from the Kapolei Parkway to the Kalaeloa Redevelopment Area while the widening on the makai side is planned to extend west at least to the Honouliuli WWTP.

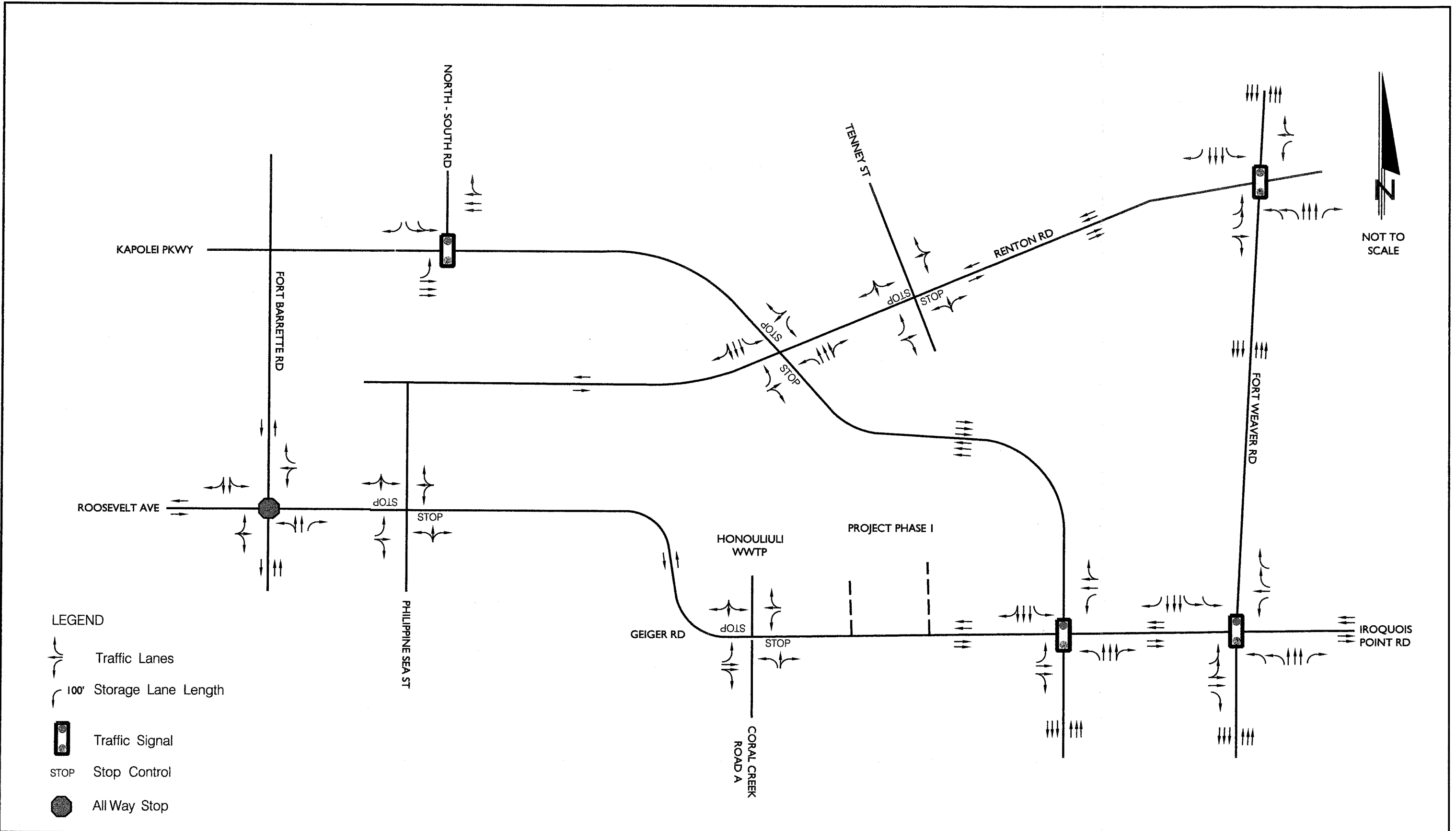
Gentry Mauka-Makai Collector Road A – Gentry Homes, Ltd. will be constructing a new roadway to provide access from Geiger Road to their new industrial property and residential development planned along the east boundary of the Kalaeloa Redevelopment Area. The new Road A is planned with a 48-foot curb-to-curb width within a 72-foot wide right-of-way. Road A is planned to intersect Geiger Road opposite the east driveway of the City WWTP.

Planned Additional Roadway Improvements in 2012

The only roadway improvement between 2009 and 2012 is expected to be the installation of a traffic signal at the intersection of the Kapolei Parkway and Renton Road. The analysis of the 2009 traffic conditions without the Project indicated the conditions would likely satisfy the MUTCD warrant to permit consideration of a traffic signal and that a traffic signal will likely be needed once the Kapolei Parkway is extended to connect to the North-South Road and/or to the existing section at the Villages of Kapolei.

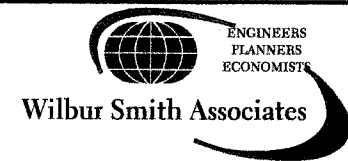
PUBLIC TRANSPORTATION

The City and County of Honolulu is expected to expand and modify the fixed route bus services in the area by 2012 to reflect the new roadways and developments.



LEGEND

- Traffic Lanes
- 100' Storage Lane Length
- Traffic Signal
- Stop Control
- All Way Stop



ENGINEERS
PLANNERS
ECONOMISTS

421 FAYETTEVILLE STREET SUITE 1303
RALEIGH, NORTH CAROLINA 27601
TELE : (919) 755-0583
FAX : (919) 832-8798

EWA INDUSTRIAL PARK
TRAFFIC IMPACT ANALYSIS REPORT
HONOLULU, HAWAII

2009 PLANNED ROADWAY LANES
TRAFFIC CONTROLS

FIGURE 3-1

TheBus Routes – The bus routes for the area are expected to be modified to increase coverage of the East Kapolei and Fort Weaver Road areas as development occurs in new areas, and service increased as the employment and number of residents increase. It is expected that TheBus service would be added or increased along the new roadway corridors near the Project site. The service expansion would likely include the Kapolei Parkway to link the Ewa Beach, East Kapolei, and City of Kapolei residential, commercial, and employment areas, as well as the North-South Road to provide connections to the planned UHWO campus and the commercial and residential developments that would be expected to develop near the campus.

Transit Corridor Study – The City and County of Honolulu is currently studying the development of a potential transit guideway that could extend from the Downtown Honolulu area into the Ewa District to pass near the Project site. Potential alignment options under consideration include: 1) along Fort Weaver Road and Geiger Road past the Project site; 2) along the planned North-South Road into the Kalaeloa Redevelopment Area just to the west of the Project site; and 3) along the North-South Roadway and west along the Kapolei Parkway, which would place the guideway within one-half mile of the site. Portions of the guideway could be open as soon as 2012. If the transit guideway is constructed, the initial system may or may not include the construction of one of the segments near the Project site.

BICYCLE AND PEDESTRIAN FACILITIES

A number of bicycle and pedestrian facilities are planned near the Project site as part of roadway projects or as independent projects.

Bicycle Facilities

Several of the roadways planned for the area by 2009 will include bicycle facilities:

- The Kapolei Parkway will include a bicycle lane in each direction which will create a regional facility connecting Ewa Beach to the City of Kapolei.
- The widening project for the section of Geiger Road between the Kapolei Parkway and the Honouliuli WWTP will include a 10-foot wide bicycle path along the mauka side of the roadway.

In addition, the State DOT plans to construct a bicycle path along the OR&L alignment through the Ewa District, including the section adjacent to the Project site. The State has not completed any survey of the corridor nor developed specific plans for the facility. The OR&L corridor includes a number of underground utilities and it is uncertain whether the bicycle path can be constructed within the existing right-of-way.³

³ Telephone discussion with Mr. Milton Oka, State DOT Design Branch, September 8, 2006.

Pedestrian Facilities

The Kapolei Parkway will include sidewalk facilities along both sides of the roadway. Crosswalks and pedestrian buttons to extend signal phases to allow pedestrian crossing time will be provided at signal-controlled intersections.

The widening project for Geiger Road will include a sidewalk along the makai side of the roadway right-of-way. A bicycle path is planned for the mauka side which could be used by pedestrians.

2009 PEAK HOUR TRAFFIC CONDITIONS

The weekday peak hour traffic volumes were forecast for 2009 without the Ewa Industrial Park based on the new developments and roadways described in the preceding sections. The peak hour traffic conditions were analyzed for the key locations that would be affected by traffic traveling to/from the Project.

Trip Generation

The numbers of vehicle trips generated by the new development near the Project site were either obtained from the traffic studies prepared for those projects, or estimates were made by WSA based on standard trip rates compiled by the Institute of Transportation Engineers (ITE).⁴

- Trip generation for the Ewa by Gentry Makai Area was obtained from the traffic study for that development, with 50% of the trips added to the 2009 volumes.
- Trip generation for the industrial and residential development along Coral Creek Road A was estimated by WSA, with 50% of the trips added to the 2009 volumes.
- Trip generation for the UHWO area was obtained from a preliminary traffic study for that development, with 15% of the trips added to the 2009 volumes.
- Trip generation for the DHHL development was estimated by WSA.

The vehicle trip generation rates and estimated vehicle trips for the Coral Creek Road A and DHHL developments are summarized in Table 3-1.

⁴ *Trip Generation, Sixth Edition*, Institute of Transportation Engineers, 1997.

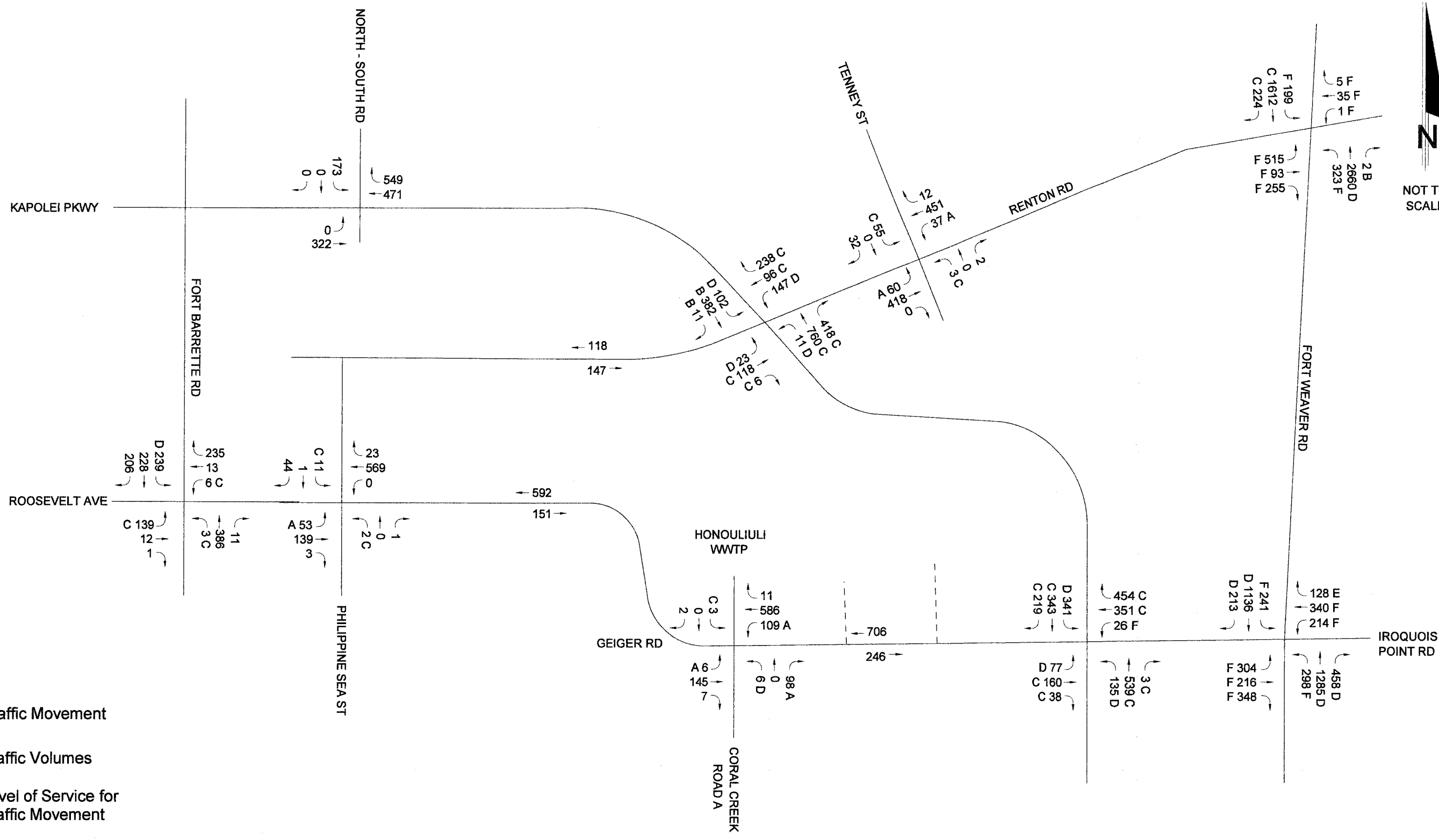
**Table 3-1
VEHICLE TRIP GENERATION
OTHER AREA PROJECTS**

Item	Morning Peak Hour			Afternoon Peak Hour			24-Hour
	Total	Enter	Exit	Total	Enter	Exit	
Vehicle Trip Rates per Thousand Square Feet (TSF) of Building Floor Area							
Single Family Houses ITE Land Use #210	0.75	0.19	0.56	1.01	0.37	0.64	9.57
General Office per TSF ITE Land Use #710	1.55	1.36	0.19	1.49	0.25	1.24	11.01
Industrial Park per acre ITE Land Use #130	8.55	7.10	1.45	8.84	1.86	6.98	63.11
Vehicle Trips for Coral Creek Road A Area							
349 Single-Family Homes	261	66	195	352	223	129	3,340
Industrial Park (30 acres)	257	213	44	265	56	209	1,890
Totals	518	279	239	617	279	338	5,230
Vehicle Trips for DHHL							
403 Single-Family Homes	303	77	226	407	258	149	3,850
Office (53 TSF)	82	72	10	79	13	66	580
Totals	385	149	236	486	271	215	4,430
TSF Thousand square feet of building floor area.							
Wilbur Smith Associates; September 19, 2006							

2009 Peak Hour Traffic Volumes

The new vehicle trips were assigned to the roadway system with origins and destinations of the trips derived from OMPO forecast data as summarized in the distribution proportions in Appendix B. The existing traffic volumes were modified where appropriate to reflect the new roadway connections that would divert traffic from existing routes. The forecast weekday traffic volumes without the Ewa Industrial Park Project are depicted in Figures 3-2 and 3-3 for the 2009 weekday morning and afternoon peak traffic hours, respectively.

The forecast traffic volumes reflect several roadway improvements that would change the present circulation patterns. The planned Kapolei Parkway connection to the North-South Road is estimated to divert about 1,450 vehicles in the morning peak hour and 1,900 vehicles in the afternoon peak hour that would otherwise travel the congested Fort Weaver Road or Roosevelt Avenue-Fort Barrette Road routes. The diversion of traffic from the Geiger Road-Roosevelt Avenue to the Kapolei Parkway is estimated to reduce peak hour traffic volumes along Geiger Road near the Project site by about 50% from 2006 traffic levels in the morning peak hour, and by about 40% in the afternoon peak hour.



NOT TO SCALE

LEGEND

Traffic Movement

330 Traffic Volumes

A Level of Service for Traffic Movement

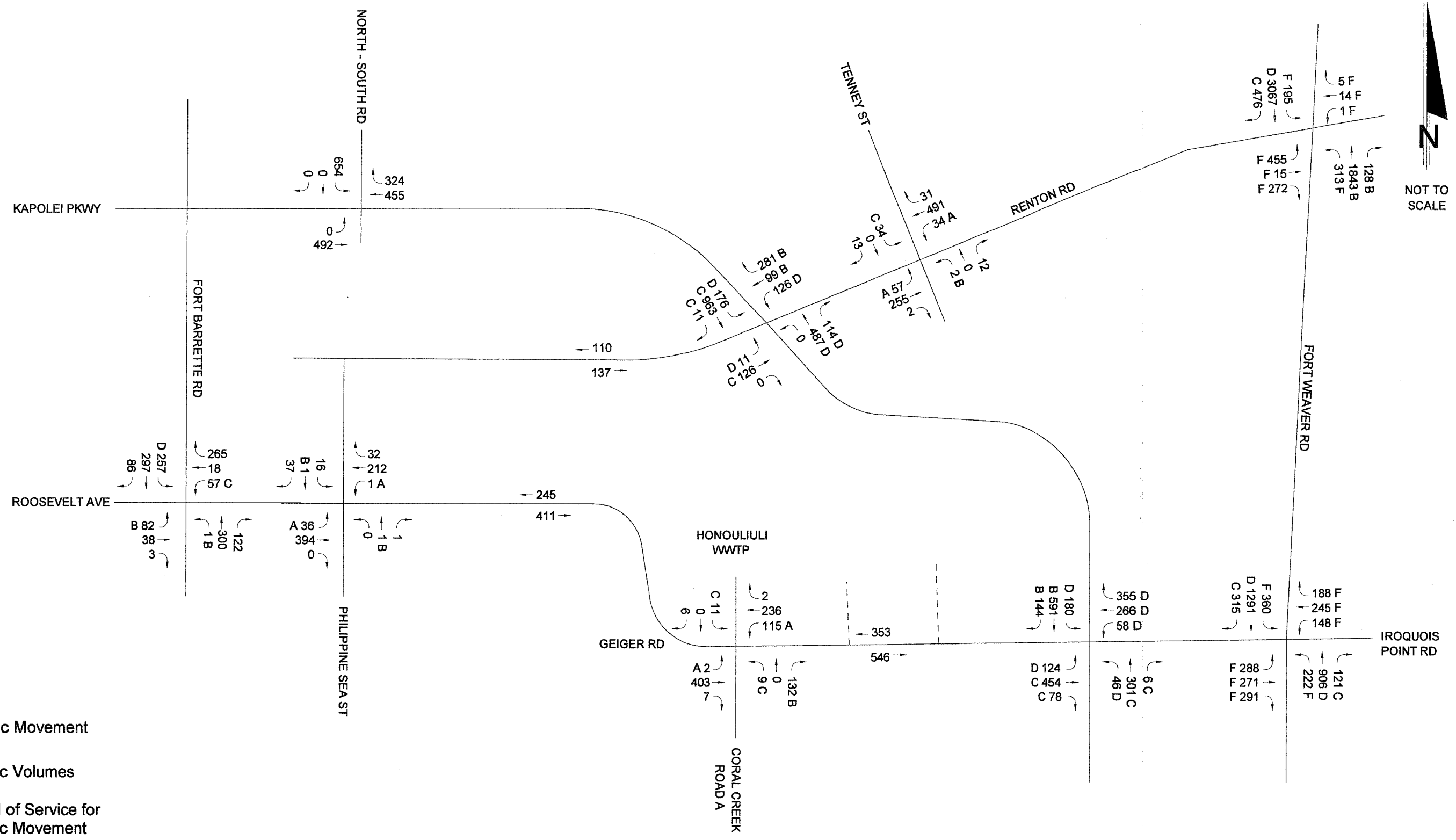


421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE : (919) 755-0583
 FAX : (919) 832-8798




EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII

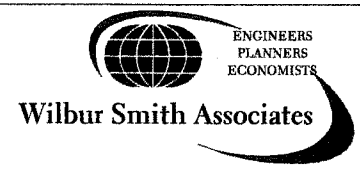
2009 AM PEAK HOUR TRAFFIC
 WITHOUT PROJECT

FIGURE 3-2



NOT TO SCALE

- LEGEND**
-  Traffic Movement
 -  Traffic Volumes
 -  Level of Service for Traffic Movement



421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE : (919) 755-0583
 FAX : (919) 832-8798

EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII

2009 PM PEAK HOUR TRAFFIC
 WITHOUT PROJECT

FIGURE 3-3

2009 Intersection Conditions

Traffic conditions were analyzed for the weekday morning and afternoon peak one-hour traffic volumes without the Project. The overall traffic conditions at each of the key intersections are summarized in Table 3-2 for the weekday morning and afternoon peak traffic hours. The level of service for individual traffic movements at the key intersections are depicted in Figures 3-2 and 3-3.

**Table 3-2
2009 TRAFFIC CONDITIONS AT KEY INTERSECTIONS
WITHOUT EWA INDUSTRIAL PARK**

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Fort Weaver Rd.- Geiger Rd.	Existing	0.74	70.5	E	0.78	74.1	E
	2009 No Project	0.71	71.0	E	0.67	67.8	E
Kapolei Pkwy.- Geiger Rd.	Existing	0.63	38.5	D	0.52	38.0	D
	2009 No Project	0.69	33.8	C	0.50	29.2	C
Geiger Rd.- Coral Creek Road A	Existing		NA			NA	
	2009 No Project	0.04	27.3	D	0.05	24.8	C
Roosevelt Ave.- Philippine Sea St.	Existing	1.29	219.5	F	0.40	24.4	C
	2009 No Project	0.15	15.6	C	0.11	12.5	B
Roosevelt Ave.- Fort Barrette Rd.	Existing	0.67	141.5	F	0.63	159.3	F
	2009 No Project	0.56	20.8	C	0.50	22.2	C
Fort Weaver Rd.- Renton Rd.	Existing	1.10	118.9	F	1.28	131.1	F
	2009 No Project	0.82	53.9	D	0.87	45.8	D
Renton Rd.- Tenney St.	Existing	0.20	15.9	C	0.08	11.9	B
	2009 No Project	0.28	19.5	C	0.15	17.0	C
Renton Rd.- Kapolei Pkwy.	Existing		NA			NA	
	2009 No Project	2.02	518.9	F	2.80	875.8	F

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.
ADPV = Average delay per vehicle, in seconds.
LOS = Level of service.
NA = Not Analyzed

Wilbur Smith Associates; September 29, 2006.

Fort Weaver Road Intersections – The combined increase in Fort Weaver Road capacity and diversion of traffic to the Kapolei Parkway is expected to improve traffic conditions at the Fort Weaver Road intersections with Geiger Road/Iroquois Point Road and with Renton Road as compared to 2006 conditions. However, the average delay would remain at LOS E at the Geiger Road intersection based on the continuation of the long signal cycle length (240 seconds) and the split phase operation.

Geiger Road Intersections – The 2009 morning peak hour traffic at the intersection with the Kapolei Parkway is estimated at 79% of capacity, in large part due to the high volume of turning traffic between the east leg and mauka leg of the intersection, with overall average delay at LOS D. Afternoon peak hour traffic amounts to 58% of capacity.

The new Coral Creek Road A intersection with Geiger Road opposite the east driveway for the Honouliuli WWTP is projected to operate at acceptable conditions with STOP sign control. The left turn out of Road A is projected with delays of LOS E and LOS D in the morning and afternoon peak hours, respectively. Note that the analysis was based on the narrow *median area not providing any refuge* for vehicles turning left out of Road A. If the median is considered as a refuge area to allow the turning vehicles to focus on one travel direction at a time, the left-turn delay would be reduced to LOS D and LOS C in the morning and afternoon peak hours, respectively.

Roosevelt Avenue Intersections – The reduction in the traffic flow along Roosevelt Avenue would result in a substantial reduction in average traffic delay at the STOP controlled intersections with Philippine Sea Street and Fort Barrette Road. Both intersections are expected to operate at acceptable conditions in both peak hours.

Renton Road Intersections – The traffic along Renton Road is forecast to experience extremely long delays at the intersection with the Kapolei Parkway with the planned STOP control. The estimated delays would merit consideration of a traffic signal controls at the intersection by 2009. Federal and state highway officials have established a series of warrants for consideration of traffic signal control at an intersection, which are set forth in the MUTCD.⁵ If conditions for an intersection do not satisfy one of the warrants, a signal is not appropriate for the location. If the conditions do satisfy one or more warrants, then a signal may be appropriate and could be considered based on further engineering studies.

Warrant #3, Peak Hour, is the primary criteria when considering whether a traffic signal is merited to address forecast future traffic conditions at an intersection. The morning peak hour traffic conditions for the two-lane approach of westbound Renton Road to the Kapolei Parkway were compared to the MUTCD Warrant #3 criteria. If the conditions do not satisfy the warrant, a traffic signal is not appropriate to address the long delays; if the conditions satisfy the warrant, a traffic signal may be considered for the intersection.

⁵ *Manual on Uniform Traffic Control Devices for Streets and Highways, 2003 Edition*, Federal Highway Administration, 2003.

- **Warrant 3 Category A**

All three conditions of these criteria must be satisfied by the same one-hour period: With the westbound Renton Road approach of the four-leg intersection striped to provide separate left-turn and through/right-turn lanes, the requirements and forecast values for the afternoon peak hour period are as follows:

Peak Hour Criteria	Minimum Requirement	Forecast Amount	Satisfy Requirement
Minor Street Delay	5 hours	92.4 hours	Yes
Minor Street Volume	150 vehicles	506 vehicles	Yes
Total Intersection Volume	800 vehicles	2,390 vehicles	Yes

The forecast intersection conditions in 2009 would satisfy the Warrant #3A criteria to permit consideration of a traffic signal at this location.

- **Warrant 3 Category B**

For the number of lanes at this intersection and the afternoon peak hour volumes along Renton Road, this warrant would require a minimum of 150 vehicles on the westbound approach in the peak hour.

The westbound approach of Renton Road, with a forecast 506 vehicles in the afternoon peak hour, has more than the minimum volume requirement and satisfies this part of the warrant.

Based on the forecast volumes and conditions in the afternoon peak hour, a traffic signal would likely be needed at this intersection by 2009. With the installation of a traffic signal and the planned lanes, the traffic conditions with the forecast 2009 traffic without the Ewa Industrial Park traffic would be as follows:.

Peak Hour	Volume-to-Capacity Ratio	Ave. Delay Per Vehicle (sec.)	Level of Service
Morning	0.59	26.9	C
Afternoon	0.53	26.6	C

Traffic conditions for 2009 with the Ewa Industrial Park were therefore analyzed with traffic signal control at this intersection, as well as 2012 conditions without and with the Project.

2012 PEAK HOUR TRAFFIC CONDITIONS

The weekday peak hour traffic volumes were forecast for 2012 without the Ewa Industrial Park based on the new developments and roadways described in the preceding sections.

Trip Generation

As described for 2009, the numbers of vehicle trips generated by the new development within and near the City of Kapolei were obtained from traffic studies for those developments or estimated by WSA based on standard trip rates compiled by the Institute of Transportation Engineers (ITE).

- Trip generation for the Ewa by Gentry Makai Area was obtained from the traffic study for that development, with 100% of the trips added to estimate the 2012 volumes.
- Trip generation for the industrial and residential development along Coral Creek Road A was estimated by WSA, with 100% of the trips added to estimate the 2012 volumes.
- Trip generation for the UHWO area was obtained from a preliminary traffic study for that development, with 57% of the trips added to estimate the 2012 volumes.

2012 Peak Hour Traffic Volumes

The forecast 2012 weekday traffic volumes without the Ewa Industrial Park Project are depicted in Figures 3-4 and 3-5 for the weekday morning and afternoon peak traffic hours, respectively.

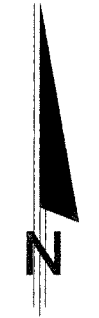
The section of the Kapolei Parkway near the Project site is estimated to attract use by about 2,600 vehicles in the morning peak hour and 3,400 vehicles in the afternoon peak hour.

Morning peak hour traffic volumes along Geiger Road near the Project site are estimated to remain below the 2006 volumes after the buildout of the nearby properties (about 1,200 in 2012 versus 1,450 in 2006). However, afternoon volumes are estimated at about 2006 levels of about 1,200 vehicles.

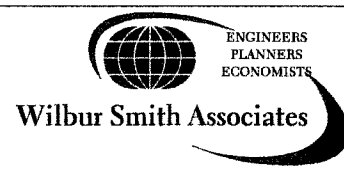
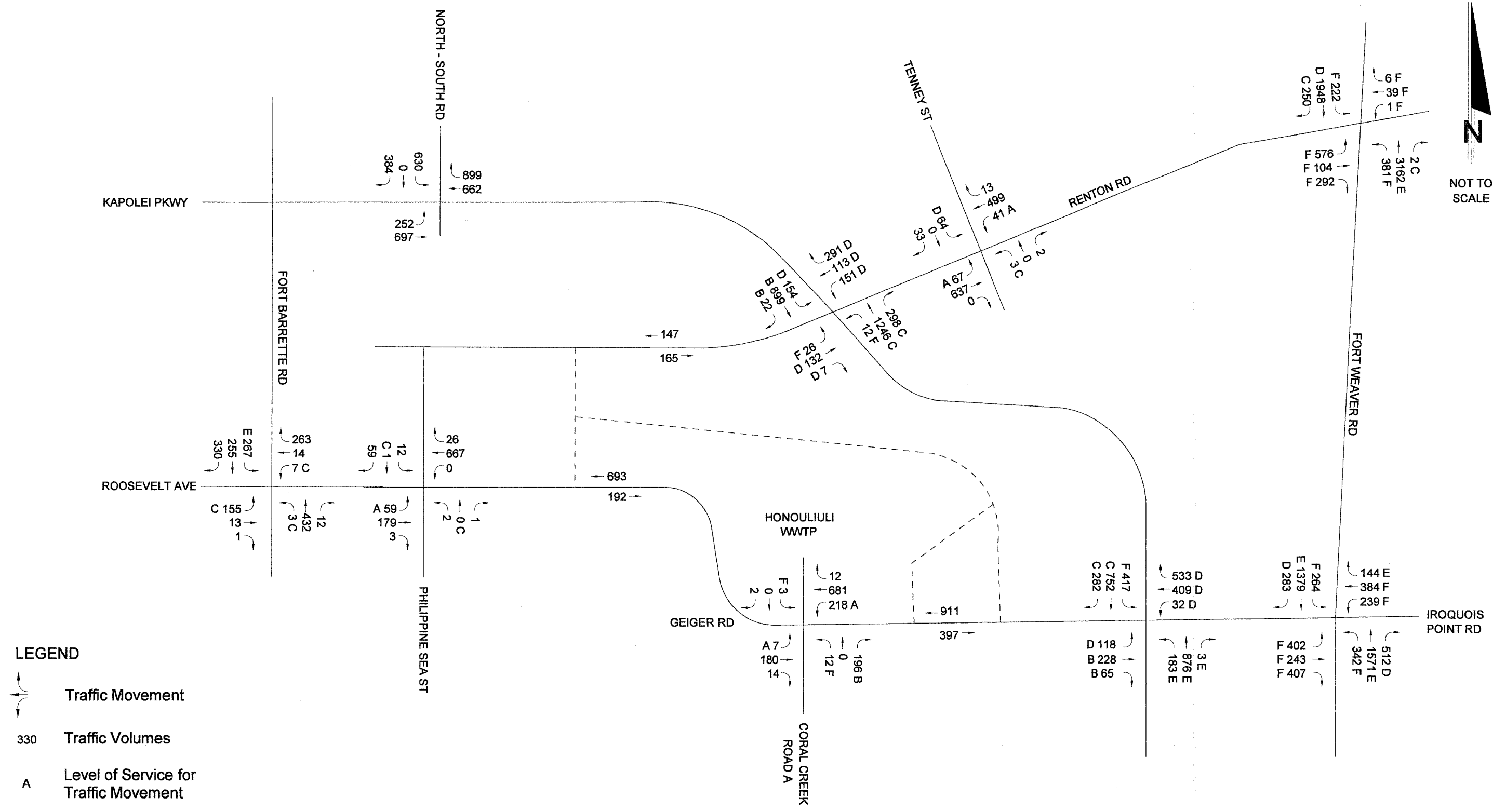
2012 Intersection Conditions

Traffic conditions were analyzed for the weekday morning and afternoon peak one-hour traffic volumes without the Project. The overall traffic conditions at each of the key intersections are summarized in Table 3-3 for the weekday morning and afternoon peak traffic hours. The level of service for individual traffic movements at the key intersections are depicted in Figures 3-4 and 3-5.

Fort Weaver Road Intersections – The increased development along the Fort Weaver Road corridor by 2012 is estimated to offset the increased capacity at the Geiger Road intersection. Morning peak hour traffic is estimated at 84% of capacity versus 97% in 2006, while the afternoon conditions would remain similar to 2006. Average delay is projected to remain at LOS E.



NOT TO SCALE

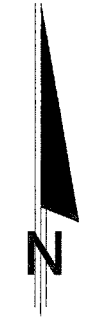


421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE : (919) 755-0583
 FAX : (919) 832-8798

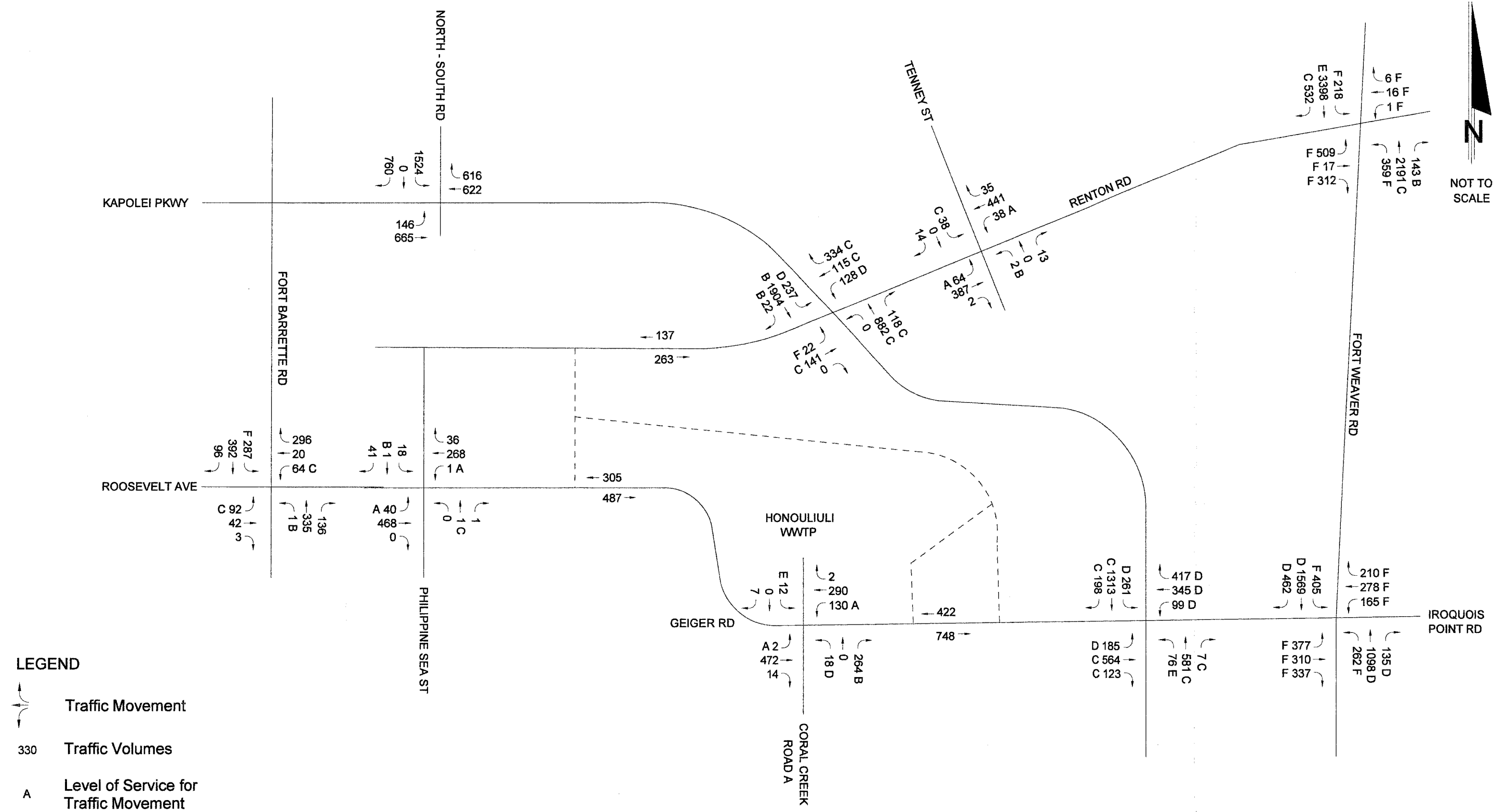
EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII

2012 AM PEAK HOUR TRAFFIC
 WITHOUT PROJECT

FIGURE 3-4



NOT TO SCALE



421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE : (919) 755-0583
 FAX : (919) 832-8798

EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII

2012 PM PEAK HOUR TRAFFIC
 WITHOUT PROJECT

FIGURE 3-5

Table 3-3
2012 TRAFFIC CONDITIONS AT KEY INTERSECTIONS
WITHOUT EWA INDUSTRIAL PARK

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Fort Weaver Rd.- Geiger Rd.	Existing	0.74	70.5	E	0.78	74.1	E
	2012 No Project	0.84	79.7	E	0.79	74.0	E
Kapolei Pkwy.- Geiger Rd.	Existing	0.63	38.5	D	0.52	38.0	D
	2012 No Project	0.92	52.9	D	0.81	36.0	D
Geiger Rd.- Coral Creek Road A	Existing		NA			NA	
	2012 No Project #	0.16	58.1	F	0.14	34.8	D
Roosevelt Ave.- Philippine Sea St.	Existing#	1.29	219.5	F	0.40	24.4	C
	2012 No Project#	0.23	18.6	C	0.14	14.3	B
Roosevelt Ave.- Fort Barrette Rd.	Existing#	0.67	141.5	F	0.63	159.3	F
	2012 No Project#	0.60	30.9	D	0.54	34.4	D
Fort Weaver Rd.- Renton Rd.	Existing	1.10	118.9	F	1.28	131.1	F
	2012 No Project	0.97	69.2	E	0.97	61.9	E
Renton Rd.- Tenney St.	Existing#	0.20	15.9	C	0.08	11.9	B
	2012 No Project#	0.42	29.0	D	0.18	18.6	C
Renton Rd.- Kapolei Pkwy.	Existing		NA			NA	
	2012 No Project	0.76	28.6	C	0.73	26.9	C

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.

ADPV = Average delay per vehicle, in seconds.

LOS = Level of service.

NA = Not Analyzed

= Conditions with STOP control.

Wilbur Smith Associates; September 29, 2006.

The increased traffic along Fort Weaver Road in 2012 is estimated to approach the capacity of the Renton Road intersection, with traffic at 97% of capacity in both peak hours. Average delay is projected to worsen to LOS E in both peak hours.

Geiger Road Intersections – The 2012 morning peak hour traffic at the intersection with the Kapolei Parkway is estimated to approximate 92% of capacity. High volumes of turns between the mauka and east legs contribute to the congested conditions. Afternoon peak hour conditions are projected at acceptable levels with traffic at 81% of capacity and average overall delays at LOS D.

Traffic turning left from Coral Creek Road A onto Geiger Road would experience long delays at LOS F in the morning peak hour. However, the low volume of vehicles making this turn and low cumulative delay would not satisfy the MUTCD Warrant #3 criteria to allow consideration of a traffic signal.

Roosevelt Avenue Intersections – The traffic at the Philippine Sea Street is expected to operate at acceptable levels.

The overall conditions at the all-way STOP controlled intersection with Fort Barrette Road are at acceptable levels. However, the makai-bound left turn from Fort Barrette Road is estimated to experience long delays at LOS F in the afternoon peak hour. The afternoon peak hour traffic conditions for the makai-bound two-lane approach of Fort Barrette Road to Roosevelt Avenue were compared to the MUTCD Warrant #3 criteria. If the conditions do not satisfy the warrant, a traffic signal is not appropriate to address the long delays; if the conditions satisfy the warrant, a traffic signal may be considered for the intersection.

- **Warrant 3 Category A**

All three conditions of these criteria must be satisfied by the same one-hour period: With the makai-bound approach of the four-leg intersection striped to provide separate through/left-turn and through/right-turn lanes, the requirements and forecast values for the afternoon peak hour period are as follows:

Peak Hour Criteria	Minimum Requirement	Forecast Amount	Satisfy Requirement
Minor Street Delay	5 hours	11.9 hours	Yes
Minor Street Volume Total Intersection	150 vehicles	755 vehicles	Yes
Volume	800 vehicles	1,740 vehicles	Yes

The forecast intersection conditions in 2012 would satisfy the Warrant #3A criteria to permit consideration of a traffic signal at this location.

- **Warrant 3 Category B**

For the number of lanes at this intersection and the afternoon peak hour volumes along Fort Barrette Road, this warrant would require a minimum of 150 vehicles on the makai-bound approach in the peak hour.

The makai-bound approach, with a forecast 755 vehicles in the afternoon peak hour, has more than the minimum volume requirement and satisfies this part of the warrant.

Based on the forecast volumes and conditions in the afternoon peak hour, a traffic signal would likely be needed at this intersection by 2012. With the installation of a traffic signal and the

existing roadway lanes, the traffic conditions with the forecast 2012 traffic without the Ewa Industrial Park traffic would be as follows:

Peak Hour	Volume-to-Capacity Ratio	Ave. Delay Per Vehicle (sec.)	Level of Service
Morning	0.64	23.9	C
Afternoon	0.55	20.8	C

Traffic conditions for 2012 with the Ewa Industrial Park were therefore analyzed with traffic signal control at this intersection.

Renton Road Intersections – The Kapolei Parkway intersection is expected to operate at acceptable conditions with signal control and the provision of separate left-turn lanes on the Renton Road approaches.

Final 6-27-07

Chapter 4

2009 WITH EWA INDUSTRIAL PARK PHASE 1

The Phase 1 portion of the Ewa Industrial Park (the Project) would encompass 23.3 acres of lands along the eastern Project boundary, with the area located between the Coral Creek Golf Course and the Honouliuli WWTP. The Phase 1 development is expected to be completed and occupied by the end of 2009.

DESCRIPTION OF THE PHASE 1 PROJECT

The Phase 1 development is planned to include approximately 489,148 square feet of building floor area. The initial development is expected to include a self-storage facility, light industrial uses, warehousing/distribution uses, and a small accessory retail use such as a convenience market and/or small specialty shops. See Figure 1-2 for Project concept plan.

The Phase 1 portion of the Project would have access to the existing roadways only at Geiger Road. The section of Geiger Road fronting the Project is expected to have two through lanes in each direction with a raised median. The Phase 1 Project driveways and circulation would include:

1. A driveway connection (Main Driveway) to Geiger Road adjacent to the eastern site boundary. This driveway is planned with two inbound and two outbound lanes, with the outbound lanes striped as a left-turn and a right-turn lane. A left-turn lane would be provided in the median to accommodate left turns from eastbound Geiger Road. The exit onto Geiger Road is proposed with STOP sign control.
2. A right-turn-in/right-turn-out (Geiger RIRO) driveway connection to Geiger Road would be constructed near the western boundary with approximately 200 feet between the two driveways.
3. The Main Driveway would extend into the site along the eastern site boundary to provide access to light industrial and warehousing uses in the mauka portion of the Phase 1 area.

The Project full-movement Main Driveway would be located about 500 feet east of the planned Coral Creek Road A intersection with Geiger Road, with the RIRO Driveway located about 300 feet from Coral Creek Road A.

PROJECT TRIP GENERATION

The numbers of vehicle trips generated by the Project were based on standard trip rates compiled by the Institute of Transportation Engineers (ITE).¹ The trip rates for a Convenience Market (ITE Land Use Category #851) were used for the small retail development. Trip rates for light industrial uses (ITE Land Use Category #110) were used for both the manufacturing and warehousing uses. Based on conversations with the client, potential future construction of 40% Mini-Storage Warehouse (Self Storage) was assumed to make up the phase 1 square footage. The trip rates and estimated numbers of vehicle trips are summarized in Table 4-1.

The numbers of vehicle trips entering or exiting a retail development include both new vehicle trips and additional stops by vehicles that would be traveling through the area whether or not the Project is developed. These additional stops by traffic passing the site to use the retail and services uses are referred to as “pass-by trips.” The ITE *Trip Generation Handbook*² provides a methodology and equation for estimating the proportion of the Project vehicle trip ends that are pass-by trips. For the Phase 1 retail uses (6,000 square feet), approximately 60% of the vehicle trips would be pass-by trips during the weekday afternoon peak hour, with the balance (40%) as new trips added to the roadway network. The weekday afternoon peak hour traffic turning movement volumes entering/exiting the Project at the Main Driveway intersection and the RIRO driveway were adjusted to reflect the Project pass-by turning volumes.

Based on these trip rates, the Phase 1 portion of the Ewa Industrial Park is estimated to generate a total of 702 vehicle trips to or from the Project land uses in the weekday morning peak hour, and 651 vehicle trips during the weekday afternoon peak hour as summarized in Table 4-1. Of these, 461 of these would be new vehicle trips added to the area roadway system in the morning peak hour and 463 would be new trips in the weekday afternoon peak hour.

PEAK HOUR TRAFFIC VOLUMES

The new vehicle trips to/from the Ewa Industrial Park Project were distributed to surrounding areas based on the percentages presented in Appendix B. The forecast traffic movements at the access points to the site were adjusted to reflect the numbers of “pass-by trips” that would turn into and out of the Project during their trip past the site. The resultant forecast of 2009 weekday morning peak hour traffic volumes on the roadways near the Project are depicted in Figure 4-1 and the afternoon peak hour traffic volumes are depicted in Figure 4-2.

¹ *Trip Generation, Seventh Edition*, Institute of Transportation Engineers, 2003.

² *Trip Generation Handbook, An ITE Recommended Practice*, Institute of Transportation Engineers, June 2004, Chapter 5 “Pass-by, Primary, and Diverted Linked Trips.”

**Table 4-1
VEHICLE TRIP GENERATION
EWA INDUSTRIAL PARK PHASE 1**

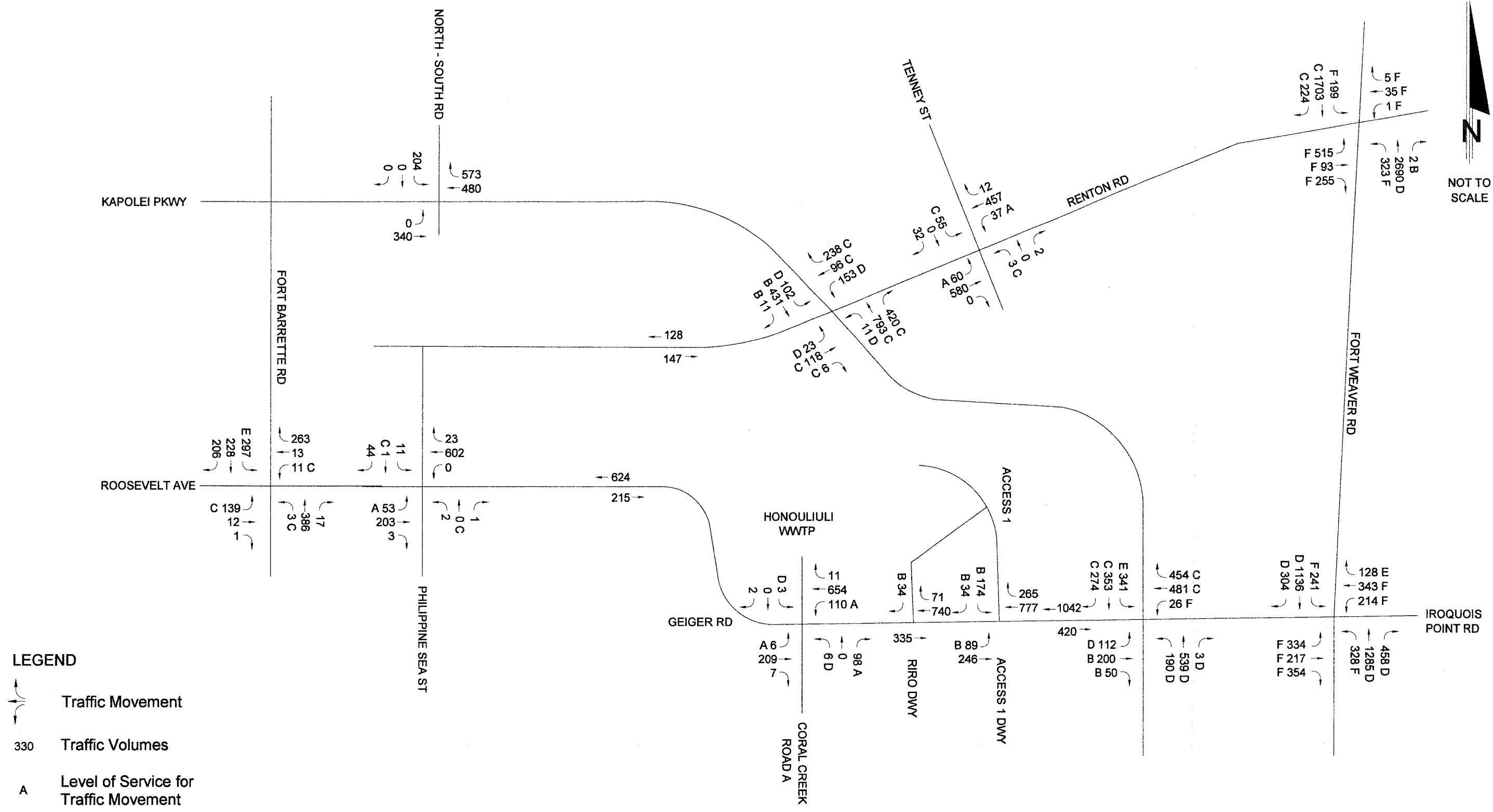
Item	Morning Peak Hour			Afternoon Peak Hour			24-Hour
	Total	Enter	Exit	Total	Enter	Exit	
Vehicle Trip Rates per Thousand Square Feet (TSF) of Building Floor Area							
Convenience Market ITE Land Use #851	67.03	33.52	33.51	52.41	26.73	25.68	737.99
Mini-Storage Warehouse ITE Land Use #151	0.15	0.09	0.06	0.26	0.13	0.13	2.50
General Light Industrial ITE Land Use #110	0.92	0.81	0.11	0.98	0.12	0.86	6.97
Vehicle Trips							
Convenience Market (6 TSF)	402	201	201	314	160	154	4,428
<i>New Trips Less 60% Pass-bys</i>	<i>161</i>	<i>80</i>	<i>80</i>	<i>126</i>	<i>64</i>	<i>62</i>	<i>1,771</i>
Mini-Storage Warehouse (195.659 TSF)	30	18	12	50	25	25	489
General Light Industrial (293.489 TSF)	270	238	32	287	35	252	2,046
Phase 1 Total Trips	702	457	245	651	220	431	6,963
New Trips Without Pass-bys	461	336	124	463	124	339	4,306
Wilbur Smith Associates; June 25, 2007							

The largest traffic increases would occur along Geiger Road between the Project and the Kapolei Parkway intersection. The Project is estimated to increase westbound traffic by about 265 vehicles (+35%) in the morning peak hour as compared to 2009 volumes without the Project and increase the eastbound traffic by 268 vehicles (+55%) in the afternoon peak hour. The Project would increase the left turn from eastbound Geiger Road onto the Kapolei Parkway by about 36 vehicles in the morning peak hour and by 61 vehicles in the afternoon peak hour.

Traffic volumes passing through the intersection of Geiger Road with Fort Weaver Road would increase by 3.1% in the morning peak hour and 3.5% in the afternoon peak hour as a result of the Project, as compared to the 2009 volumes without the Project.



NOT TO SCALE



LEGEND

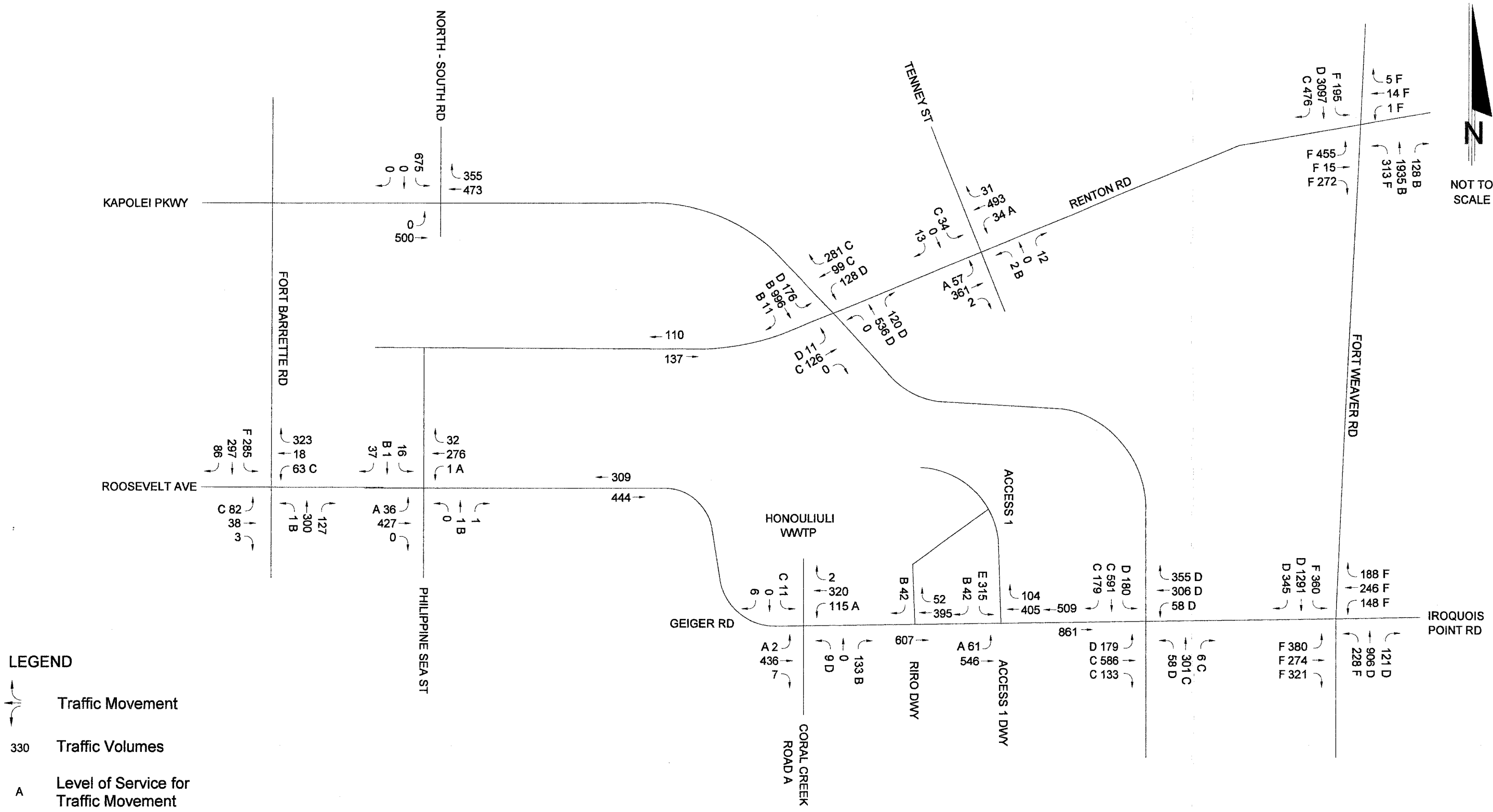
Traffic Movement

330 Traffic Volumes

A Level of Service for Traffic Movement



NOT TO SCALE



LEGEND

- Traffic Movement
- 330 Traffic Volumes
- A Level of Service for Traffic Movement



421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE : (919) 755-0583
 FAX : (919) 832-8798

EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII

2009 PM PEAK HOUR TRAFFIC
 WITH PROJECT PHASE 1

FIGURE 4-2

PEAK HOUR INTERSECTION CONDITIONS

Traffic conditions with Phase 1 of the Project are summarized for the key intersections near the Project site in Table 4-2 for the weekday morning and afternoon peak hours. For comparison, the existing and year 2009 conditions without the Project are also presented in Table 4-2. The impact on the traffic conditions at key intersections are discussed in the following paragraphs.

Geiger Road Intersections with Project Driveways – If the narrow median planned for Geiger Road is considered in the Synchro analysis to provide a refuge area for traffic use in making the left turn from the full-movement Main Driveway, the Project traffic turning left from the main driveway is estimated to experience average delay of about 30-38 seconds during both peak hours, equivalent to LOS D & E conditions. If the analysis is based on the narrow median not being usable as a refuge area during the turn maneuver, the average delay would increase to over 100 seconds in both peak hours.

The potential for the installation of traffic signal controls was assessed for the intersection. Federal and state highway officials have established a series of warrants for consideration of traffic signal control at an intersection, which are set forth in the MUTCD.³ If conditions for an intersection do not satisfy one of the warrants, a signal is not appropriate for the location. If the conditions do satisfy one or more warrants, then a signal may be appropriate and could be considered based on further engineering studies.

Warrant #3, Peak Hour, is the primary criteria when considering whether a traffic signal is merited to address forecast future traffic conditions at an intersection. The afternoon peak hour Main Driveway outbound traffic conditions with the delay estimate reflecting a median refuge area were compared to the MUTCD Warrant #3 criteria. If the conditions do not satisfy the warrant, a traffic signal is not appropriate to address the long delays; if the conditions satisfy the warrant, a traffic signal may be considered for the intersection.

- **Warrant 3 Category A**

All three conditions of these criteria must be satisfied by the same one-hour period: With the makai-bound approach of the three-leg intersection striped to provide separate left-turn and right-turn lanes, the requirements and forecast values for the afternoon peak hour period are as follows:

Peak Hour Criteria	Minimum Requirement	Forecast Amount	Satisfy Requirement
Minor Street Delay	4 hours	3.3 hours	No
Minor Street Volume	150 vehicles	373 vehicles	Yes
Total Intersection Volume	650 vehicles	1,396 vehicles	Yes

³ Manual on Uniform Traffic Control Devices for Streets and Highways, 2003 Edition, Federal Highway Administration, 2003.

The forecast intersection conditions in 2009 would not satisfy the Warrant #3A criteria to permit consideration of a traffic signal at this location.

- **Warrant 3 Category B**

For the number of lanes at this intersection and the afternoon peak hour volumes along Renton Road, this warrant would require a minimum of 150 vehicles on the westbound approach in the peak hour.

The westbound approach of Renton Road, with a forecast 373 vehicles in the afternoon peak hour, has more than the minimum volume requirement and satisfies this part of the warrant.

The forecast afternoon peak hour conditions with the median refuge does not satisfy the warrant for a traffic signal at this intersection in 2009. If the median area cannot be effectively used as a refuge by most drivers, then the delays would likely well exceed the criteria for consideration of a traffic signal.

With the installation of a traffic signal and the planned lanes, the traffic conditions with the forecast with the Ewa Industrial Park Phase 1 traffic would be as follows:.

Peak Hour	Volume-to-Capacity Ratio	Ave. Delay Per Vehicle (sec.)	Level of Service
Morning	0.49	21.2	C
Afternoon	0.41	25.8	C

However, the analysis of the traffic conditions for 2012 with the build-out of the Ewa Industrial Park (Chapter 5) indicate that the traffic volumes at this intersection would not satisfy the warrant for traffic signal control once the other driveway accesses are provided to Roosevelt Avenue and Renton Road.

Installation of signal control may be appropriate for the full movement intersection, dependent upon how effectively drivers actually use the median area.

The storage length for the left-turn lane from Geiger Road into the driveway was estimated based on STOP sign control using the Synchro queue length estimate as well as the rule of thumb formula:

$$\text{Storage Length} = \text{Average arrival in one minute} \times \text{safety factor of } 2 \times 25 \text{ feet per vehicle}$$

The estimated storage lengths based on each method are 97 feet based on signal control and Synchro 95% probability and 75 feet based on the formula. To accommodate the queue plus allow deceleration (from speed of 35 mph), the following turn lane is proposed for Phase 1:

Table 4-2
2009 TRAFFIC CONDITIONS AT KEY INTERSECTIONS
WITH EWA INDUSTRIAL PARK PHASE 1

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Fort Weaver Rd.- Geiger Rd.	Existing	0.74	70.5	E	0.78	74.1	E
	2009 No Project	0.71	70.1	E	0.67	67.8	E
	2009 With Project	0.73	71.4	E	0.70	70.5	E
Kapolei Pkwy.- Geiger Rd.	Existing	0.63	38.5	D	0.52	38.0	D
	2009 No Project	0.69	33.8	C	0.50	29.2	C
	2009 With Project	0.80	37.9	D	0.59	31.2	C
Geiger Rd.-Project Main Dwy. SB Left	Median Refuge#	0.47	30.3	D	0.77	38.0	E
	No Refuge#	0.86	102.9	F	1.10	122.5	F
Geiger Rd.-Project RIRO Dwy.	With Project#	0.11	11.9	B	0.08	10.0	B
Geiger Rd.- Coral Creek Road A	Existing		NA			NA	
	2009 No Project #	0.04	27.3	D	0.05	24.8	C
	2009 With Project#	0.05	32.6	D	0.06	29.4	D
Roosevelt Ave.- Philippine Sea St.	Existing#	1.29	219.5	F	0.40	24.4	C
	2009 No Project#	0.15	15.6	C	0.11	12.5	B
	2009 With Project#	0.17	16.9	C	0.13	13.9	B
Roosevelt Ave.- Fort Barrette Rd.	Existing#	1.41	218.3	F	1.76	368.5	F
	2009 No Project#	0.56	20.8	C	0.50	22.2	C
	2009 With Project#	0.57	30.0	D	0.51	31.0	D
Fort Weaver Rd.- Renton Rd.	Existing	1.10	118.9	F	1.28	131.1	F
	2009 No Project	0.82	53.9	D	0.87	45.8	D
	2009 With Project	0.83	54.0	D	0.88	45.9	D
Renton Rd.- Tenney St.	Existing#	0.20	15.9	C	0.08	11.9	B
	2009 No Project#	0.28	19.5	C	0.15	17.0	C
	2009 With Project#	0.28	19.6	C	0.15	17.1	C
Renton Rd.- Kapolei Pkwy.	Existing		NA			NA	
	2009 No Project	0.59	26.9	C	0.53	26.6	C
	2009 With Project	0.60	26.6	C	0.55	26.6	C

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.

ADPV = Average delay per vehicle, in seconds.

LOS = Level of service.

NA = Not Analyzed

= Conditions based on STOP control.

Wilbur Smith Associates; June 25, 2007.

Full width lane length	175 feet
Taper length	75feet.

Geiger Road –Coral Creek Road A – The Project traffic would increase the average delay for traffic turning left from the Coral Creek Road A intersection to LOS D in the morning peak hour, with the delay increasing by an average of 5.3 seconds for each vehicle. This delay would not be sufficient to satisfy MUTCD Warrant #3, both due to the relatively low number of affected vehicles and amount of cumulative delay.

Geiger Road-Kapolei Parkway – The Project would add traffic to the through movements along Geiger Road and to the turns from the west leg of Geiger Road to/from both directions of the Kapolei Parkway. The Project would increase capacity use by 11-9% in each peak hour, with the total morning peak hour traffic use estimated at 80% of capacity. The average delay in each peak hour would increase by about 2 to 4 seconds, with the morning increase resulting in average delay of LOS D versus LOS C without the Project.

Traffic conditions would be at acceptable levels and no mitigation is proposed at the intersection.

Fort Weaver Road Intersections – The Project Phase 1 traffic would add 2-3% to the level of capacity use at the Geiger Road intersection, with traffic estimated at about 73% of capacity or less. Project traffic would increase estimated overall delay in the morning peak hour by a nominal 1.3 seconds and by 2.7 seconds in the afternoon peak hour. Traffic in both peak hours is projected to experience LOS E conditions with or without the Project as a result of the long signal cycle length and split signal phase operation.

The Project Phase 1 traffic is expected to have minimal impact on the Renton Road intersection, with the traffic increasing capacity use by 1% and average delay by 0.1 seconds in each peak hour.

Other Intersections –Although the Project traffic would increase capacity use by only about 1% at the Roosevelt Avenue intersection with Fort Barrette Road, the added traffic would increase the average delay by about 10 seconds in each peak hour since the traffic is added to the two movements with the longest delays. The increase in average delay would worsen the overall conditions from LOS C to LOS D in both peak hours. The high-volume makai-bound left turn from Fort Barrette Road would experience LOS F delay with or without the Project.

The Project Phase 1 traffic would have little adverse effect on the other study intersections in 2009.

PUBLIC TRANSIT

Many of the Project employees would be expected to use public transit to access the development. Most of these trips would be made via TheBus but some may use TheHandiVan.

The nearest existing TheBus stop is located along each side of Geiger Road just west of the Kapolei Parkway intersection. Once development of the Coral Creek Industrial Park begins, bus stops may also be provided near the Road A intersection. It would be desirable to locate the Road A bus stop on the east side of the intersection to increase accessibility to the Ewa Industrial Park. The bus stops should provide seating or weather protection to encourage transit use by area employees.

The Project developer should meet with City DTS staff and Gentry Company representatives to develop a coordinated plan for location and design of the bus stops.

The Project developer should also review the site plans with City DTS to ensure that the on-site walkways and passenger pick-up/drop-off areas would be usable by TheHandiVan to load/unload passengers with mobility limitations.

BICYCLE AND PEDESTRIAN TRAVEL

Bicycles – The widening plans for Geiger Road indicate the construction of a 10-foot wide bicycle path along the mauka side of the roadway from the Kapolei Parkway to the Project site, with the intent to continue the bicycle path along the mauka side past the Honouliuli WWTP to the Kalaeloa Redevelopment Area.

The bicycle path should be continued through the Project section fronting onto Geiger Road, which would also result in the crossing of the Main Access Driveway as well as the RIRO Driveway. The two driveways would provide potential uncontrolled traffic conflict points with bicyclists. The Project developer should coordinate the design of the bicycle facility across the site with the City DTS staff to minimize safety concerns.

The State DOT plans to develop a regional bicycle path within the OR&L right-of-way including the section adjacent to the Project site. The State DOT has not yet completed any surveys of the OR&L alignment to identify whether there is adequate width to accommodate a bicycle path. Potentially, the location of underground utilities in relation to the tracks may constrain the bicycle facility design. The provision of an easement could be provided within the Project set-back area adjacent to the tracks to provide additional width to facilitate the provision of the bicycle path if the bicycle path is located along the makai side of the tracks.

Pedestrians – The planned widening of Geiger Road will provide a sidewalk along the makai side of the roadway. Pedestrians choosing to walk along the mauka side would likely use the bicycle path which is planned as a 10-foot wide facility that would satisfy the AASHTO guidelines for a multi-purpose (bicycles and pedestrians) facility. Therefore, the bicycle path should adequately serve pedestrian travel along the Project side of Geiger Road. If the bicycle lanes are routed into the Project site to reduce traffic safety concerns, then a separate sidewalk area could be considered along the Project frontage.

A convenient paved walkway and paved waiting area should be provided at the bus stop locations to facilitate accessibility. A walkway connection should be provided between the Project and the Geiger Road pedestrian facility to avoid pedestrians walking within the traffic lanes of the Main Driveway to walk to the nearby bus stops.

PROPOSED MITIGATIVE ACTIONS

The following paragraphs identify potential improvements to mitigate the impacts at those intersections substantially affected by the Ewa Industrial Park traffic in 2009, as well as actions to facilitate transit, bicycle, and pedestrian transportation.

Roadways and Traffic

The following paragraphs identify potential roadway improvements to mitigate the impacts at those intersections substantially affected by the Project traffic in 2009.

Geiger Road-Main Access Driveway – Based on the traffic forecasts, the peak hour traffic conditions would satisfy the MUTCD Warrant #3 criteria for consideration of a traffic signal. Once the Phase 2 connections are made to Roosevelt Avenue and Renton Road, the future traffic conditions at the Geiger Road Main Driveway may no longer warrant the continuation of traffic signal control.

Therefore, it is proposed that underground conduit and boxes be included in the driveway construction to facilitate any future installation of a traffic signal. Traffic conditions should be monitored to identify if there is a future need for a signal.

If the Coral Creek Road A facility were to be aligned with the Ewa Industrial Park Main Driveway, the increased traffic movements would be more likely to satisfy one of the MUTCD warrants to allow the consideration of a traffic signal. The Project Team should investigate the possibility with Gentry Company staff and with City DTS staff.

Public Transit, Bicycles, and Pedestrians

Actions to encourage use of these travel modes for access to the Project are outlined in the following list.

Public Transit

- The Project Team should coordinate with the Gentry Company and the with the City DTS and TheBus staffs to identify location of bus stops along Geiger Road that best serve both developments.
- Bus shelters and seating should be provided at the bus stop locations on Geiger Road located adjacent to the Project.
- The Project Team should review the driveway and sidewalk plans with the City DTS staff to ensure accommodation of TheHandiVan operations for access the Project.

Bicycles

- The preliminary design plans for the widening of Geiger Road by Gentry Homes, Inc. include construction of a bicycle path along the mauka side of the roadway from the Kapolei Parkway to the Honouliuli WWTP. The Project Team should work with the Gentry Company and City DTS staff to ensure a convenient and safe bicycle path crossing of the planned Project driveway connections to Geiger Road.
- The State DOT has plans to develop a regional bike path adjacent to the OR&L railway. In compliance with the Ewa Development Plan (August, 1997), the developer is maintaining a 40' setback for structures (except for a security wall/fence) within the new development along the entire length of the OR&L boundary.

Pedestrians and Walkways

- A sidewalk connection should be provided from within the Project to connect to the Geiger Road multi-purpose bicycle path to avoid pedestrians walking within the Main Driveway traffic lanes.

Final 6-27-07

Chapter 5 2012 WITH EWA INDUSTRIAL PARK BUILDOUT

The Phase 2 portion of the Ewa Industrial Park (the Project) is expected to extend through year 2012. This chapter assesses the effects of Project Buildout as compared to 2012 traffic conditions without the Project.

DESCRIPTION OF PROJECT BUILD-OUT

The Phase 2 area encompasses 25.095 acres located along the makai side of the OR&L tracks in the center and western portions of the site as depicted in Figure 1-2. This portion of the site is expected to be developed with a mix of light manufacturing, warehousing, and distribution types of uses. The Phase 2 development could amount to as much as about 747,852 square feet of building floor area.

The Phase 2 area would provide potential access to both Roosevelt Avenue and Renton Road. The Project concept plan includes a driveway connection to both Roosevelt Avenue and Renton Road near the west end of the site.

- The driveway connection to Roosevelt Avenue would be located to align with existing Ticonderoga Street. The preliminary plan indicates two lanes in each direction on the driveway. STOP sign control would be used on the driveway approach.
- The driveway to Renton Road would align with or be located near the Haakei Street intersection. The preliminary plan indicates one driveway lane in each direction at the intersection to Renton Road. The driveway would access Renton Road where the OR&L tracks are located close to the street.
- The Geiger Road driveways would remain as described in Chapter 4.

The Project layout would provide internal circulation driveways that provide access to all three access connections to the off-site roadways.

PROJECT TRIP GENERATION

The numbers of vehicle trips generated by the Project were based on standard trip rates compiled by the Institute of Transportation Engineers (ITE).¹ Trip rates for light industrial uses (ITE Land Use Category #110) were used for both the manufacturing and warehousing uses. The trip rates

¹ *Trip Generation, Seventh Edition*, Institute of Transportation Engineers, 2003.

and estimated numbers of vehicle trips are summarized in Table 5-1 for Phase 2 as well as the entire Project.

Based on these trip rates, the Phase 2 portion of the Ewa Industrial Park is estimated to generate a total of 688 vehicle trips to or from the Project land uses in the weekday morning peak hour, and 733 vehicle trips during the weekday afternoon peak hour. The total Project is estimated to add 1,149 be new trips (exclusive of pass-bys) in the morning peak hour and 1,196 new trips in the afternoon peak hour.

Table 5-1 VEHICLE TRIP GENERATION EWA INDUSTRIAL PARK BUILDOUT							
Item	Morning Peak Hour			Afternoon Peak Hour			24- Hour
	Total	Enter	Exit	Total	Enter	Exit	
Vehicle Trip Rates per Thousand Square Feet (TSF) of Building Floor Area							
Convenience Market ITE Land Use #851	67.03	33.52	33.51	52.41	26.73	25.68	737.99
Mini-Storage Warehouse ITE Land Use #151	0.15	0.09	0.06	0.26	0.13	0.13	2.50
General Light Industrial ITE Land Use #110	0.92	0.81	0.11	0.98	0.12	0.86	6.97
Vehicle Trips							
Convenience Market (6 TSF)	402	201	201	314	160	154	4,428
<i>Less pass-bys (60%)</i>	<i>161</i>	<i>80</i>	<i>80</i>	<i>126</i>	<i>64</i>	<i>62</i>	<i>1,771</i>
Mini-Storage Warehouse (195.659 TSF)	30	18	12	50	25	25	489
General Light Industrial (293.489 TSF)	270	238	32	287	35	252	2,046
Phase 1 Subtotal	702	457	245	651	220	431	6,963
General Light Industrial (747.852 TSF)	688	606	82	733	90	643	5,213
Buildout Total Trips	1,390	1,063	327	1,384	310	1,074	12,176
Buildout New Trips Without Pass-bys	1,149	942	206	1,196	214	982	9,519
Wilbur Smith Associates; June 25, 2007							

PEAK HOUR TRAFFIC VOLUMES

The new vehicle trips to/from the Project were distributed to surrounding areas based on the percentages presented in Appendix B. The forecast traffic movements at the access points to the site were adjusted to reflect the numbers of "pass-by trips" that would turn into and out of the Project during their trip past the site. The resultant forecast of 2012 morning peak hour traffic volumes on the roadways near the Project are depicted in Figure 5-1 and the afternoon peak hour traffic volumes in Figure 5-2.

The relative convenience of the Project access to the Kapolei Parkway via the Renton Road driveway connection would likely result in the majority of Project traffic using that route to travel to/from the site. The Renton Road connection would provide the most direct connection to the H-1 Freeway via the North-South Road as well as to the Kapolei Parkway connection to the City of Kapolei and East Kapolei areas. An estimated 574 (50% of total trips) and 606 (51% of total trips) of the Project trips are estimated to use the Renton Road connection to the Kapolei Parkway in the morning and afternoon peak hours, respectively. With this connection the traffic along Renton Road west of the Kapolei Parkway would total about 880 to 900 vehicles in each peak hour, which approximates the morning peak hour volume (710 vehicles) during the August 2006 traffic survey.

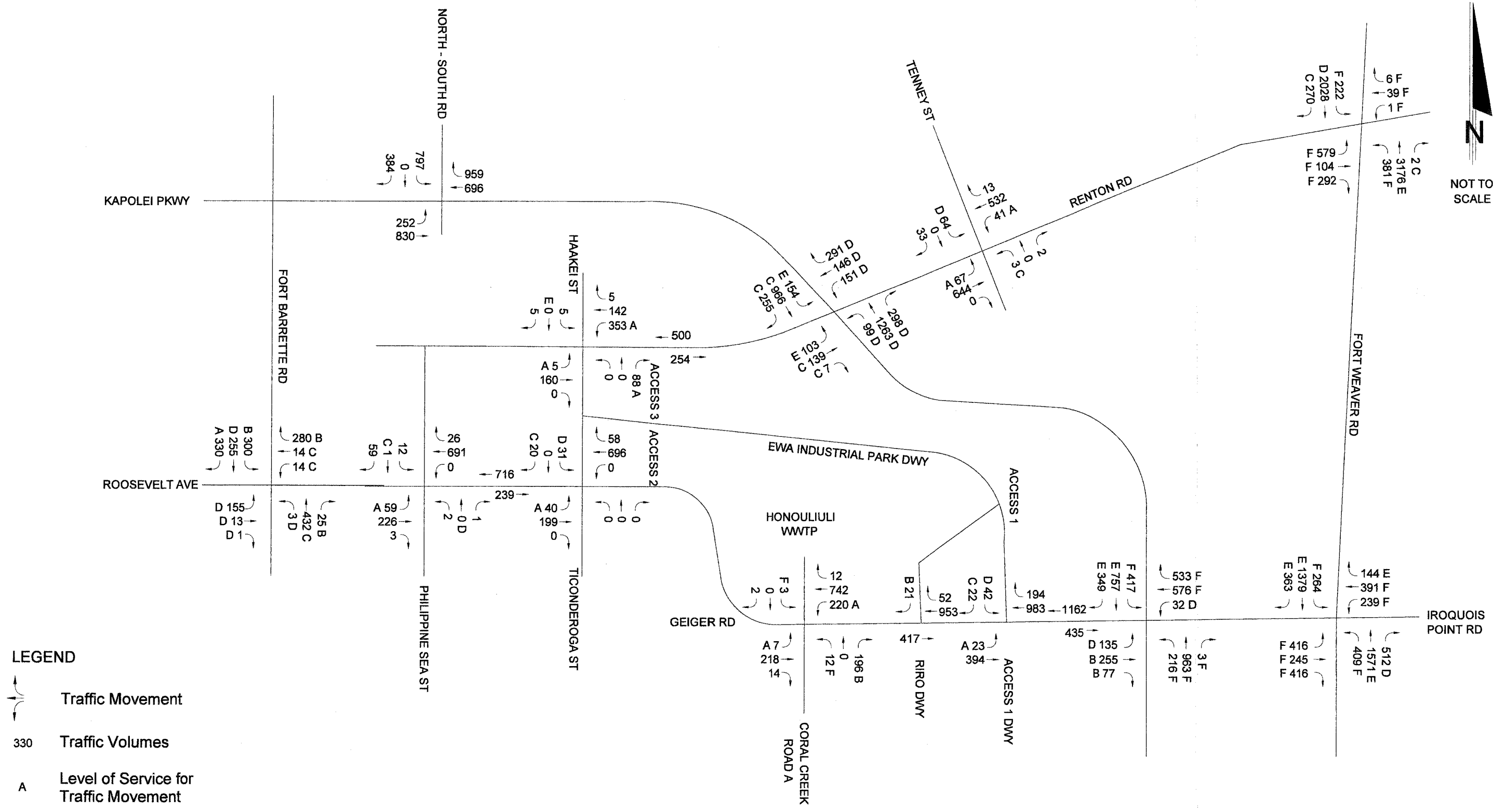
The Renton Road connection is not expected to attract much additional traffic to/from Fort Weaver Road, particularly in the morning peak period when the school traffic and congestion would deter use by through traffic. The Renton Road-Fort Weaver Road connection would be expected to attract use primarily for traffic to/from the Waipahu area and the areas along Fort Weaver Road mauka of Renton Road. Traffic to/from the sections of the Fort Weaver Road corridor makai of Renton Road would likely use the Kapolei Parkway and/or Geiger Road.

The Geiger Road driveway is expected to be primarily used by Project traffic to/from the Fort Weaver Road corridor, particularly those sections makai of Geiger Road and, to a lesser extent, the Waipahu area. About 400 and 330 of the new Project trips are forecast to use the driveway connection to Geiger Road in the morning and afternoon peak hours, respectively.

About 200 and 290 of the Project trips in the morning and afternoon peak hours, respectively, are estimated to use the Access 2 connection to Roosevelt Avenue. This connection would primarily be used by traffic traveling to/from the Kalaeloa Redevelopment Area and to a lesser extent, the City of Kapolei and Makakilo areas.



NOT TO SCALE




LEGEND

Traffic Movement

Traffic Volumes

Level of Service for Traffic Movement


WILBUR SMITH ASSOCIATES
 ENGINEERS
 PLANNERS
 ECONOMISTS
 421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE : (919) 755-0583
 FAX : (919) 832-8798

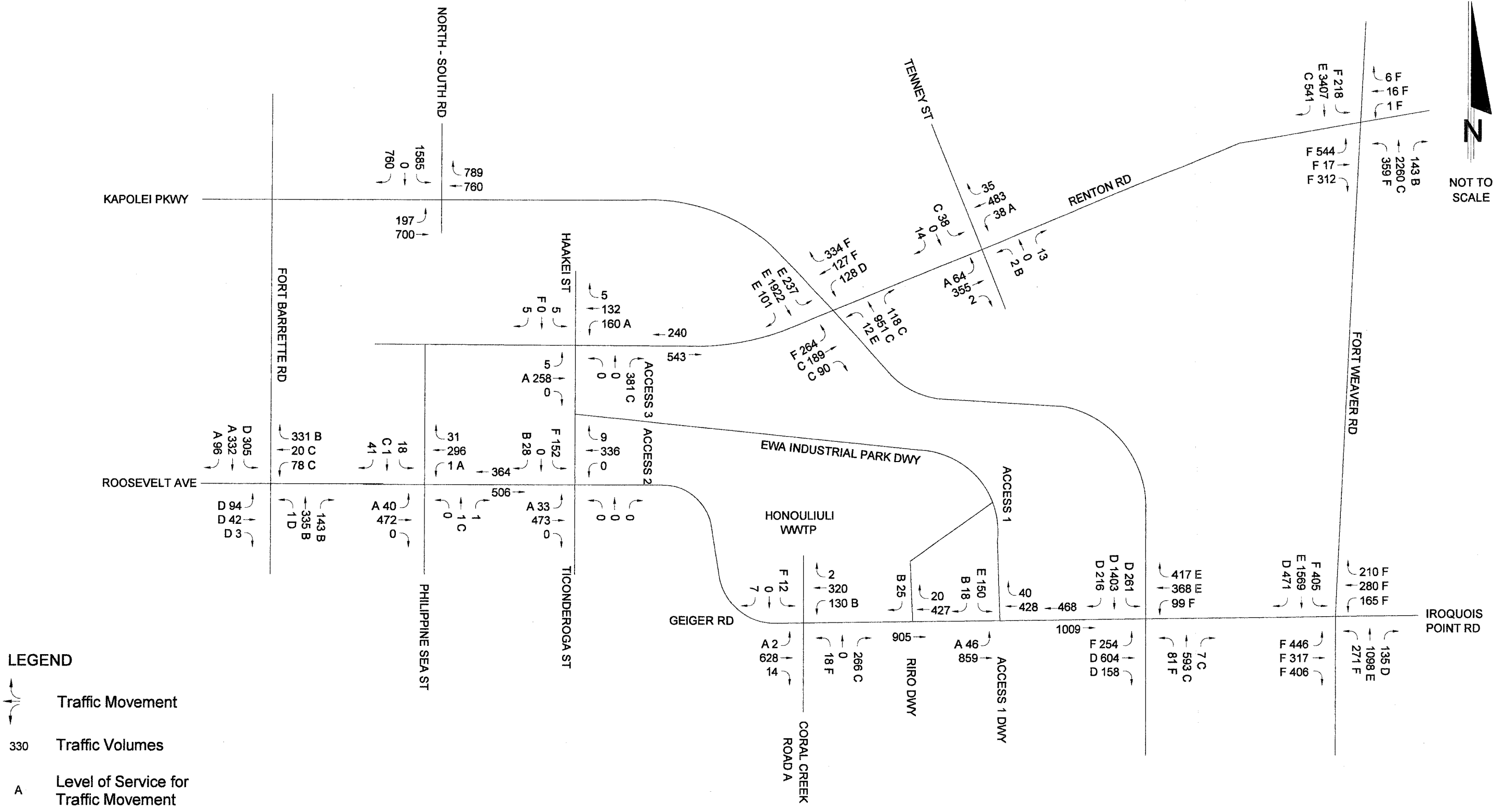
EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII

2012 AM PEAK HOUR TRAFFIC
 WITH PROJECT BUILDOUT

FIGURE 5-1



NOT TO SCALE

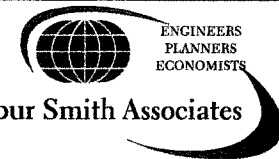


LEGEND

Traffic Movement

330 Traffic Volumes

A Level of Service for Traffic Movement



421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE : (919) 755-0583
 FAX : (919) 832-8798

EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII

2012 PM PEAK HOUR TRAFFIC
 WITH PROJECT BUILDOUT

FIGURE 5-2

PEAK HOUR INTERSECTION CONDITIONS

Traffic conditions with Project Build-out were analyzed for the intersection of Project accesses with the adjacent off-site roadways and for the key intersections near the Project site for the weekday morning and afternoon peak traffic hours.

Project Access Connections

Traffic conditions with Project Build-out are summarized for the Project Access intersections with the adjacent roadways in Table 5-2 for the morning and afternoon peak traffic hours.

Geiger Road Intersections with Project Driveways – With STOP control of the Project driveway, the Project traffic turning left from the full-movement Main Driveway (Access 1) is projected to experience only moderate delay (LOS D or E) during both peak hours if the narrow median planned for Geiger Road is considered as providing an effective refuge area for traffic use in making the left turn. If the analysis is based on the narrow median not being usable as a refuge area during the turn maneuver, the average delay would be at LOS F in both peak hours.

An assessment was made of the MUTCD Warrant #3 criteria to allow consideration of traffic signal at the intersection based on the delay estimated with median not serving as an effective refuge. The intersection would not satisfy the warrant with the afternoon peak hour cumulative delay for the driveway totaling only 2.7 hours versus a minimum criteria of 4 hours.

The average delays for the traffic exiting the proposed Geiger Road RIRO driveway would be at LOS B or better.

The storage length for the left-turn lane from Geiger Road into the driveway was estimated using the Synchro queue length estimate as well as the rule of thumb formula:

$$\text{Storage Length} = \text{Average arrival in one minute} \times \text{safety factor of } 2 \times 25 \text{ feet per vehicle}$$

The estimated queue lengths based on each method are 61 feet based on Synchro 95% probability and 39 feet based on the formula. However, the queue length should be increased to reflect at least one truck in the queue. With this increase, the length would be slightly less than the Phase 1 proposed length of:

Full width lane length	200 feet
Taper length	75 feet.

**Table 5-2
2012 TRAFFIC CONDITIONS AT ACCESS CONNECTIONS
WITH EWA INDUSTRIAL PARK BUILDOUT**

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Geiger Rd.-Access 1 SB Left Turn	Median Refuge	0.34	33.3	D	0.73	39.4	E
	No Median Refuge	0.66	95.0	F	1.19	168.2	F
Geiger Rd.- RIRO Dwy.	STOP Control	0.10	13.6	B	0.07	10.1	B
Roosevelt Ave.- Access 2 SB Left	STOP Control	0.24	33.6	D	1.01	107.3	F
Renton Rd.-Access 3 NB	STOP Control	0.13	9.8	A	0.70	20.2	C

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.
ADPV = Average delay per vehicle, in seconds.
LOS = Level of service.

Wilbur Smith Associates; June 27, 2007.

Roosevelt Avenue-Project Access 2 – During the afternoon peak hour, the traffic turning left from the STOP sign-controlled Access 2 driveway onto eastbound Roosevelt Avenue would amount to about 1% of estimated over capacity for this movement with the average delay per vehicle at LOS F. However, the estimated cumulative delay of 6.6 vehicle hours would satisfy the MUTCD Warrant #3 criteria to allow consideration of a traffic signal (minimum of 4 hours).

With the installation of a traffic signal and the planned lanes, the traffic conditions with the forecast with the Ewa Industrial Park Phase 1 traffic would be as follows:

Peak Hour	Volume-to-Capacity Ratio	Ave. Delay Per Vehicle (sec.)	Level of Service
Morning	0.60	9.4	A
Afternoon	0.50	23.6	C

The peak hour left-turn volume from the eastbound approach of Roosevelt Avenue (57 vehicles) typically would not merit a left-turn storage lane. However, since many of the vehicles are likely be trucks, a left-turn storage lane is proposed for the eastbound approach.

Renton Road-Project Access 3 – Few if any Project vehicles are expected to turn left out of the Access 3 intersection onto westbound Renton Road since either the Access 2 connection or the right-turn onto Renton Road and use of the Kapolei Parkway would provide a much more convenient route for vehicles traveling west from the Project site. Therefore, the Access 3 approach to Renton Road is expected to operate at very acceptable conditions with STOP control. The relatively low volume of through traffic along Renton Road past the Access 3 intersection should not merit the provision of a left-turn lane on Renton Road.

Off-site Intersections

Traffic conditions with Project Build-out are summarized for the key intersections near the Project site in Table 5-3 for the morning and afternoon peak traffic hours. For comparison, the existing and year 2012 conditions without the Project are also presented in Table 5-3. The impact on the traffic conditions at key intersections are discussed in the following paragraphs.

Geiger Road –Coral Creek Road A – The Project traffic would increase the average delay for traffic turning left from the Coral Creek Road A intersection by about 20 to 25 seconds in each peak hour. The increase in average delay for the left turn traffic would worsen from LOS D to LOS F in the afternoon peak hour, while the conditions would be at LOS F without or with the Project in the morning peak hour. This delay would not be sufficient to satisfy MUTCD Warrant #3, both due to the relatively low number of affected vehicles and amount of cumulative delay. This assessment was made on the basis that the median would not provide any effective refuge for the traffic turning left from Road A.

No mitigative actions are proposed for this intersection.

Geiger Road-Kapolei Parkway – With the addition of the Project build-out traffic, the morning peak hour traffic is estimated to exceed intersection capacity use by 8%, with the average delay at LOS F versus LOS D without the Project. The afternoon peak hour traffic is estimated to operate at acceptable levels with the Project Build-out traffic.

Traffic conditions in the morning peak hour would merit mitigative actions at the intersection.

Fort Weaver Road Intersections – At the Geiger Road intersection, the Project build-out traffic would increase capacity use to 86% versus 84% without the Project, with the Project traffic increasing average delay by about 2.6 seconds per vehicle during the weekday morning peak hour. However, the calculated delay per vehicle for the Without Project scenario is just below the 80-second criteria for LOS F conditions, so the 2-second increase worsens the LOS from E to F. In the afternoon peak hour, the traffic would approximate 83% of capacity use, with the average delay per vehicle increased by 5 seconds and remaining within LOS E conditions both without and with the Project. The overall long delays would result in large part from the extremely long signal cycle length and split phase operation. No mitigative actions are proposed at this intersection.

At the Renton Road intersection, the Project traffic would increase intersection use to 98% of capacity versus 97% of capacity without the Project in each peak hour. Traffic conditions would

remain at LOS E with the Project adding 0.9 and 0.5 seconds to average overall delay in the morning and afternoon peak hours, respectively. No mitigation is proposed for Project traffic impacts at this intersection.

Table 5-3
2012 TRAFFIC CONDITIONS AT KEY INTERSECTIONS
WITH EWA INDUSTRIAL PARK BUILDOUT

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Fort Weaver Rd.- Geiger Rd.	Existing	0.74	70.5	E	0.78	74.1	E
	2012 No Project	0.84	79.7	E	0.79	74.0	E
	2012 With Project	0.86	82.3	F	0.83	79.3	E
Kapolei Pkwy.- Geiger Rd.	Existing	0.63	38.5	D	0.52	38.0	D
	2012 No Project	0.92	52.9	D	0.81	36.0	D
	2012 With Project	1.08	100.3	F	0.95	48.9	D
Geiger Rd.- Coral Creek Road A	Existing		NA			NA	
	2012 No Project#	0.16	58.1	F	0.14	34.8	D
	2012 With Project#	0.21	78.6	F	0.23	60.3	F
Roosevelt Ave.- Philippine Sea St.	Existing#	1.29	219.5	F	0.40	24.4	C
	2012 No Project#	0.23	18.6	C	0.14	14.3	B
	2012 With Project#	0.25	20.1	C	0.17	16.0	C
Roosevelt Ave.- Fort Barrette Rd.	Existing#	0.67	141.5	F	0.63	159.3	F
	2012 No Project	0.64	23.9	C	0.55	20.8	C
	2012 With Project	0.67	23.6	C	0.58	21.4	C
Fort Weaver Rd.- Renton Rd.	Existing	1.10	118.9	F	1.28	131.1	F
	2012 No Project	0.97	69.2	E	0.97	61.9	E
	2012 With Project	0.98	70.1	E	0.97	62.4	E
Renton Rd.- Tenney St.	Existing#	0.20	15.9	C	0.08	11.9	B
	2012 No Project#	0.42	29.0	D	0.18	18.6	C
	2012 With Project#	0.42	29.8	D	0.18	19.0	C
Renton Rd.- Kapolei Pkwy.	Existing		NA			NA	
	2012 No Project	0.76	28.6	C	0.73	26.9	C
	2012 With Project	0.84	37.6	D	1.12	66.9	E

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.

ADPV = Average delay per vehicle, in seconds.

LOS = Level of service.

NA = Not Analyzed

= Conditions with STOP controls.

Wilbur Smith Associates; June 27, 2007.

Roosevelt Avenue Intersections – The addition of Project traffic along Roosevelt Avenue would increase the average delay for traffic turning left from the makai-bound approach of Philippine Sea Street by about 1.5 second in the morning peak hour and 1.7 seconds in the afternoon peak hour. The average delay for the left-turn traffic is estimated at very acceptable LOS C or better in both peak hours.

If signal control is in place at the Fort Barrette Road intersection with Roosevelt Avenue, the intersection would operate at very acceptable conditions with the Project Build-out traffic (Table 5-3).

If the Fort Barrette Road intersection were still controlled as an all-way STOP in 2012, the Project traffic would add about 6.7 and 4.5 seconds to overall average delay per vehicle in the morning and afternoon peak hours, respectively. The increased delays would result in conditions at LOS E versus LOS D without the Project in both peak hours. The average delay for the makai-bound approach would increase about 16 seconds in the morning peak hour and 10 seconds in the afternoon peak hour. The traffic conditions for the intersection would satisfy the MUTCD Warrant #3 criteria for consideration of traffic signal control both without and with the Project. No mitigative actions are proposed for the intersection beyond those without the Project.

Renton Road Intersections – Along Renton Road, the Project is expected to primarily affect traffic conditions at the Kapolei Parkway intersection. In the morning peak hour, the Project is expected to primarily increase the right-turn volume from the makai-bound Kapolei Parkway and the left-turn volume from the mauka-bound Kapolei Parkway. The Project is estimated to increase average overall delay by 9.0 seconds in the morning peak hour, from LOS C to LOS D. With capacity use at 84%, the morning peak hour conditions would be at acceptable levels. In the afternoon peak hour, the Project is expected primarily increase traffic on the eastbound approach of Renton Road with high volumes of Project vehicles turning left onto the Parkway. With the addition of the Project traffic, the 2012 afternoon peak hour traffic is estimated to approximate the intersection capacity. Although the average overall delay could remain at acceptable LOS E, the projected afternoon capacity-level traffic would merit additional capacity at the intersection.

Since very little traffic is expected to access the Project from Fort Weaver Road via Renton Road, the Project should have minor impacts on the other intersections along Renton Road. As noted in Table 5-3, the Project traffic is estimated to increase the delay to traffic turning out of Tenney Road by about 0.8 seconds and 0.5 seconds in the morning and afternoon peak hours, respectively.

PUBLIC TRANSIT, BICYCLES, AND PEDESTRIANS

The issues identified with the Project Phase 1 (Chapter 4) along Geiger Road would also apply to the Project Buildout. The following sections address issues concerning the Roosevelt Avenue and Renton Road connections.

Public Transit

TheBus currently provides service along Roosevelt Avenue with the closest bus stop located just west of the Philippine Sea Street intersection. It would be desirable to locate a bus stop closer to the Project Access 2 intersection with Roosevelt Avenue. This could be done by adding a bus stop east of the Access 2 intersection, or by relocating the existing bus stop from west of Philippine Sea Street to midway between Philippine Sea Street and the Access 2 driveway, which would be located about 500 feet apart. The Project Team should meet with DTS and TheBus staffs to coordinate the provision of a bus stop to serve the Project.

TheBus is expected to provide regional trunk route service along the Kapolei Parkway once the roadway is completed between Renton Road and the Villages of Kapolei. Bus stops should be provided in each direction along the Kapolei Parkway near the Renton Road intersection to service both area residents and the Project employees and visitors.

The Project plans should provide for convenient and safe pedestrian linkages between the Project and the nearby bus stops. This should include a sidewalk along each driveway connection to the adjacent streets.

Bus shelters and seating should be provided at the bus stops that serve the Roosevelt Avenue and Renton Road accesses to the Project.

Bicycle and Pedestrian Facilities

The State DOT plans to develop a regional bicycle path within the OR&L right-of-way including the section adjacent to the Project site. The State DOT has not yet completed any surveys of the OR&L alignment to identify whether there is adequate width to accommodate a bicycle path. Potentially, the location of underground utilities in relation to the tracks may constrain the bicycle facility design. The provision of an easement could be provided within the Project set-back area adjacent to the tracks to provide additional width to facilitate the provision of the bicycle path if located along the makai side of the tracks.

Sidewalks should be provided along each driveway connection to the adjacent streets to provide a pedestrian linkage to the nearby bus stops.

POTENTIAL MITIGATIVE ACTIONS

The following paragraphs identify potential improvements to mitigate the impacts at those intersections substantially affected by the Ewa Industrial Park traffic in 2012, as well as actions to facilitate transit, bicycle, and pedestrian transportation.

Roadways and Traffic

The following paragraphs identify potential roadway improvements to mitigate the impacts at those intersections substantially affected by the Project traffic in 2012.

Roosevelt Avenue-Project Access 2 – Although the estimated volume of traffic turning left into the Project access from eastbound Roosevelt Avenue is not high enough to normally merit the provision of a storage lane, the driveway is likely to be used by a high proportion of trucks which would require longer gaps in opposing traffic to complete their turns and thus would block eastbound through traffic while waiting. It is proposed that a left-turn storage lane be constructed on the eastbound approach, with the lane providing a full-width storage length of 175 feet plus a taper of 75 feet.

Geiger Road-Kapolei Parkway – The Project Build-out traffic may adversely affect morning peak hour traffic conditions at this intersection. Two potential mitigative actions were evaluated:

- Widen the westbound approach of Geiger Road to provide a right-turn lane to accommodate the high volume of turning traffic, thereby increasing the capacity available to through traffic. The westbound right-turn lane would reduce capacity use in the morning peak hour to 88% with average delay at 49.3 seconds (LOS D).
- Widen the eastbound approach of Geiger Road to provide two (double) left-turn lanes. The double left-turn lane would only improve conditions to 100% of capacity with average delay at 76.5 seconds (LOS E).

The proposed approach would be to add the westbound right-turn lane. The lane should provide full width storage of 300 feet plus taper of 75 feet.

Renton Road-Kapolei Parkway – The Project Build-out traffic may adversely affect afternoon peak hour traffic conditions at this intersection when exiting Project employees increase the left-turn volume from eastbound Renton Road approach. Two potential mitigative actions were evaluated:

- Widen the westbound approach of Renton Road to provide a right-turn lane to accommodate the high volume of turning traffic, thereby reducing the portion of the signal time needed to accommodate the through traffic and allowing more time for the left turn from eastbound Renton Road approach. The westbound right-turn lane would reduce capacity use in the morning peak hour to 82% with average delay at 33.5 seconds (LOS C).

- Widen the eastbound approach of Renton Road to provide two (double) left-turn lanes. The double left-turn lane would improve conditions to 86% of capacity with average delay at 41.2 seconds (LOS D).

The proposed approach would be to add the westbound right-turn lane. The lane should provide full-width storage of 300 feet plus taper of 75 feet.

Public Transit, Bicycles, and Pedestrians

Actions that could mitigate the identified issues and also encourage use of these travel modes for access to the Project are outlined in the following list. .

Public Transit

- The Project Team should coordinate with the City DTS and TheBus staffs to identify location of a new or relocated bus stop along Roosevelt Avenue to serve the Project.
- Bus shelters and seating should be provided at the bus stops located along Roosevelt Avenue and along the Kapolei Parkway located adjacent to the Project.
- The Project Team should review the driveway and sidewalk plans with the City DTS staff to ensure accommodation of TheHandiVan operations for access the Project.

Bicycles

- The State DOT has plans to develop a regional bike path adjacent to the OR&L railway. In compliance with the Ewa Development Plan (August, 1997), the developer is maintaining a 40' setback for structures (except for a security wall/fence) within the new development along the entire length of the OR&L boundary.

Pedestrians and Walkways

- Construct a sidewalk along the Project Access 2 and 3 driveways between the Project and the adjacent roadways to provide safe pedestrian linkages to the adjacent off-site roadways.

Final 6-27-07

Chapter 6

2012 WITH EWA INDUSTRIAL PARK WITHOUT RENTON ROAD DRIVEWAY

This chapter assesses the buildout of Phase 2 portion of the Ewa Industrial Park (the Project) in year 2012 without the planned Project driveway connection to Renton Road. This scenario has been analyzed in view of community concerns expressed regarding the addition of Project traffic to Renton Road.

DESCRIPTION OF PROJECT SCENARIO

For this scenario, the land uses and trip generation for the Project (Phases 1 and 2) would be the same as the description provided in Chapter 5. The scenario would differ only in the absence of the Project driveway connection to Renton Road. Access to/from the Project would be provided through the driveway connections to Geiger Road and to Roosevelt Avenue as described in Chapters 4 and 5.

Even with the absence of the Renton Road driveway connection, much of the traffic would likely continue to use the section of Renton Road to access the H-1 Freeway and East Kapolei via the Renton Road connection to the Kapolei Parkway and linkage to the North-South Road. Therefore, traffic forecasts and impact analyses were developed for an additional scenario in addition to the proposed plan with the Renton Road driveway connection. The scenarios are:

Scenario A – The base scenario for 2012 as described in the Project plan and assessed in Chapter 5.

Scenario B – This scenario reflects conditions without the Renton Road driveway plus the restriction of use of Renton Road by Project traffic. This would require traffic management measures such as the prohibition of left turns out of the Renton Road-Philippines Sea Street makai-bound approach onto Roosevelt Avenue and the right turn movement from westbound Roosevelt Avenue onto Philippines Sea Street during the peak commute traffic periods.

PROJECT TRIP GENERATION

The numbers of vehicle trips generated by the Project would be the same as those presented in Table 5-1.

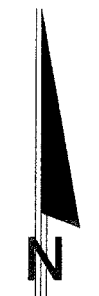
PEAK HOUR TRAFFIC VOLUMES

The new vehicle trips to/from the Project were assigned to the surrounding roadway system based on no Project driveway connection to Renton Road (Access 3 in Chapter 5). For Scenario B, the Project trips were assumed to be largely restricted from use of Renton Road.

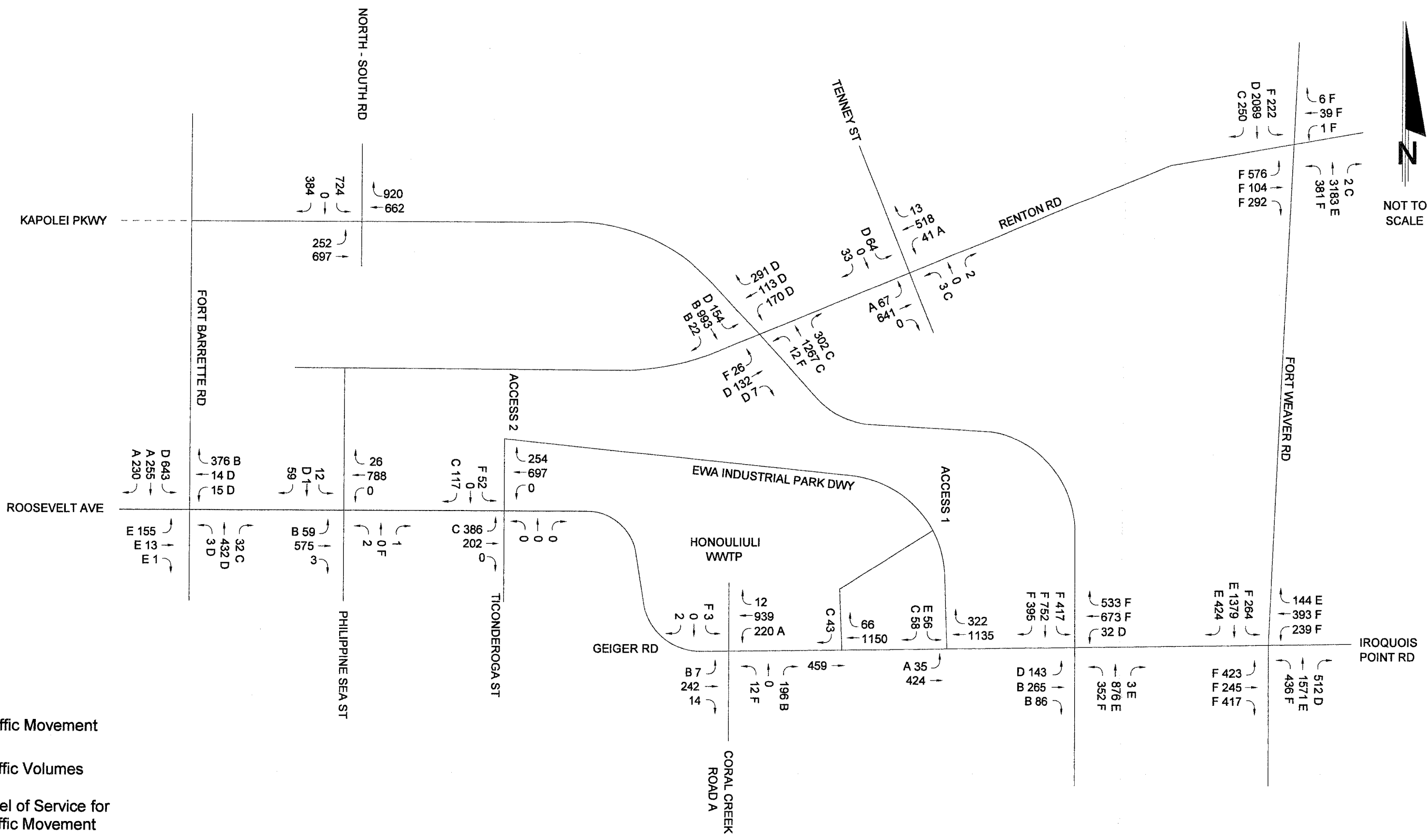
Scenario B, with little or no Project traffic using Renton Road, would likely require some physical constraint on access to Renton Road from Roosevelt Avenue. One approach would be to restrict turns between the east leg of Roosevelt Avenue and the mauka leg of Renton Road/Philippines Sea Street at the intersection during the peak commute traffic hours. This physical restriction could reduce traffic along the portion of Renton Road makai of the Kapolei parkway to about 600 vehicles in the morning and afternoon peak hours, or about a 80% reduction from traffic with Project Access 3 connection to Renton Road. The resultant forecast of 2012 morning peak hour traffic volumes on the roadways near the Project are depicted in Figure 6-1 and the afternoon peak hour traffic volumes in Figure 6-2.

PEAK HOUR INTERSECTION CONDITIONS

Traffic conditions with Project Build-out Driveway Scenario B were analyzed for the intersection of Project accesses with the adjacent off-site roadways and for the key intersections near the Project site for the weekday morning and afternoon peak traffic hours.



NOT TO SCALE

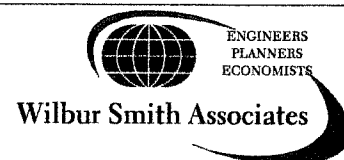


LEGEND

Traffic Movement

330 Traffic Volumes

A Level of Service for Traffic Movement

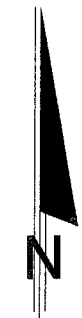


421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE : (919) 755-0583
 FAX : (919) 832-8798

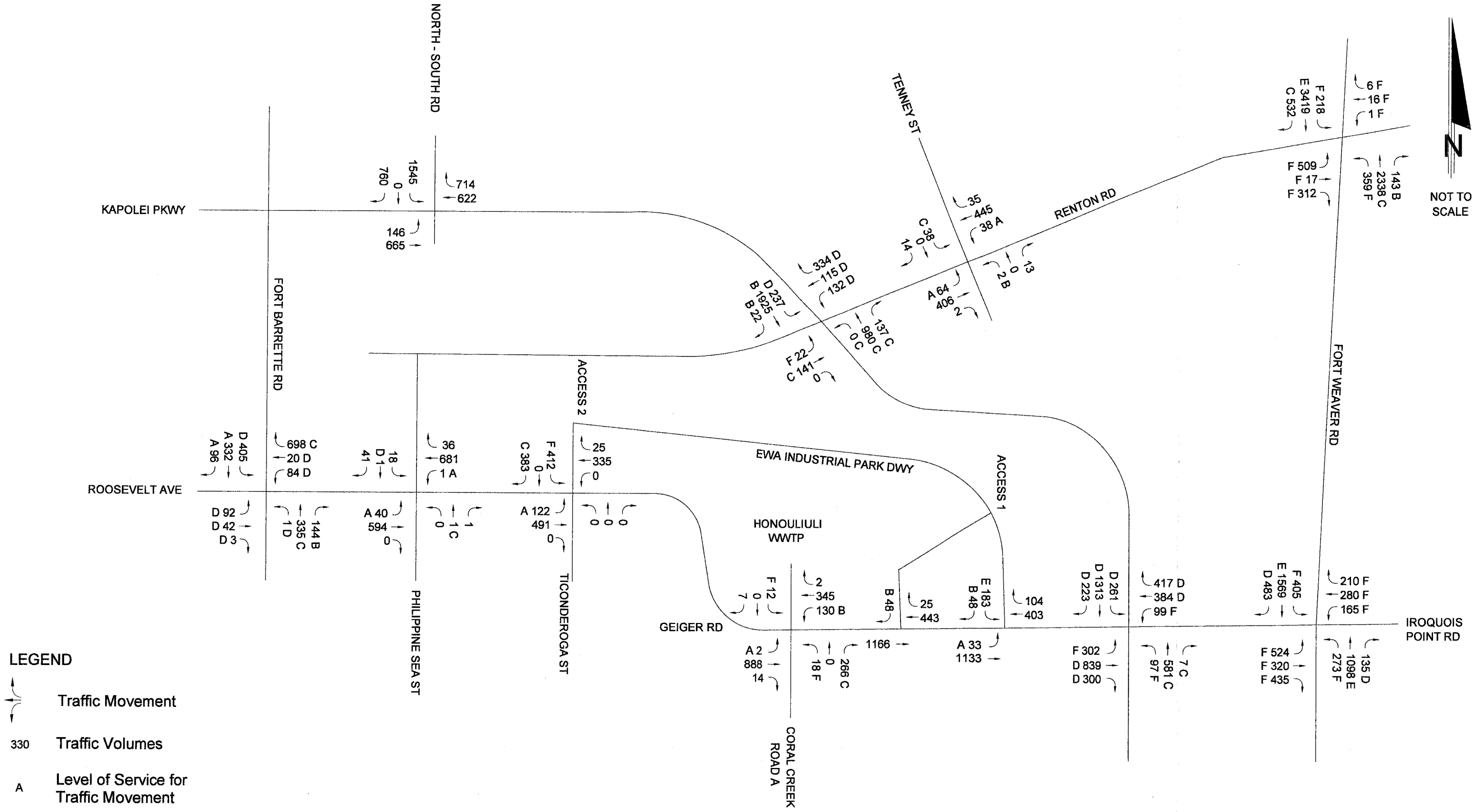
**EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII**

**2012 AM PEAK HOUR TRAFFIC
 WITH PROJECT & RENTON
 ROAD RESTRICTION (SCENARIO B)**

FIGURE 6-1



NOT TO SCALE



421 FAYETTEVILLE STREET SUITE 1303
 RALEIGH, NORTH CAROLINA 27601
 TELE : (919) 755-0583
 FAX : (919) 832-8798

**EWA INDUSTRIAL PARK
 TRAFFIC IMPACT ANALYSIS REPORT
 HONOLULU, HAWAII**

**2012 PM PEAK HOUR TRAFFIC
 WITH PROJECT & RENTON
 ROAD RESTRICTION (SCENARIO B)**

FIGURE 6-2

Project Access Connections

Traffic conditions at the Project Access intersections with Project Build-out for Scenario B are summarized in Table 6-1 for the morning and afternoon peak traffic hours. The conditions with access Scenario A (with Renton Road Access 3 connection) are also included for comparison.

Geiger Road Intersections with Project Driveway – With STOP control of the Project Main Driveway (Access 1) connection to Geiger Road, the Project traffic turning left from the driveway is projected to experience longer delays with Scenario B, as compared to Scenario A, due to the increased numbers of vehicles turning left from this driveway and the increased Project trips traveling along Geiger Road to/from Access 2 driveway connection with Roosevelt Avenue. If the narrow median planned for Geiger Road is considered as providing an effective refuge area for traffic use in making the left turn, the increased delay (LOS E) would be at acceptable levels during both peak hours.

If the analysis is based on the narrow median not being usable as a refuge area during the turn maneuver, the average delay would be greatly increased in both peak hours for Scenario B, although all the delay for all scenarios would be at LOS F.

Warrant #3, Peak Hour, is the primary criteria when considering whether a traffic signal is merited to address forecast future traffic conditions at an intersection. The afternoon peak hour traffic conditions with the delay estimate reflecting no median refuge area were compared to the MUTCD Warrant #3 criteria. If the conditions do not satisfy the warrant, a traffic signal is not appropriate to address the long delays; if the conditions satisfy the warrant, a traffic signal may be considered for the intersection.

- **Warrant 3 Category A**

All three conditions of these criteria must be satisfied by the same one-hour period: With the makai-bound approach of the three-leg intersection striped to provide separate left-turn and right-turn lanes, the requirements and forecast values for the afternoon peak hour period are as follows:

Peak Hour Criteria	Minimum Requirement	Forecast Amount	Satisfy Requirement
Minor Street Delay	5 hours	8.3 hours	Yes
Minor Street Volume	150 vehicles	231 vehicles	Yes
Total Intersection Volume	650 vehicles	1,714 vehicles	Yes

The forecast intersection conditions in 2012 with Scenario B would satisfy the Warrant #3A criteria to permit consideration of a traffic signal at this location.

**Table 6-1
2012 TRAFFIC CONDITIONS AT ACCESS CONNECTIONS
WITH EWA INDUSTRIAL PARK BUILDOUT**

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Geiger Rd.- Access 1 SB Left Turn	A - Median Refuge	0.34	33.3	D	0.73	39.4	E
	A - No Median Refuge	0.66	95.0	F	1.19	168.2	F
	B - Median Refuge	0.39	41.9	E	0.65	35.8	E
	B - No Median Refuge	0.83	155.6	F	1.13	160.6	F
Geiger Rd.- RIRO Dwy. SB	A - STOP Control	0.10	13.6	B	0.07	10.1	B
	B - STOP Control	0.12	15.0	C	0.07	10.2	B
Roosevelt Ave.- Access 2 SB Left	A - STOP Control	0.24	33.6	D	1.01	107.3	F
	B - STOP Control	2.35	957.4	F	2.92	926.5	F

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.

ADPV = Average delay per vehicle, in seconds.

LOS = Level of service.

* = With Renton Road Access

= Without Renton Road Access

Wilbur Smith Associates; June 27, 2007.

• **Warrant 3 Category B**

For the number of lanes at this intersection and the afternoon peak hour volumes along Geiger Road, this warrant would require a minimum of 180 vehicles on the driveway approach in the peak hour.

The driveway volume, with a forecast 231 vehicles in the afternoon peak hour, is above the minimum volume requirement and does satisfy this part of the warrant. With the installation of a traffic signal and the planned lanes, the traffic conditions with the forecast with the Ewa Industrial Park traffic would be as follows:

Peak Hour	Volume-to-Capacity Ratio	Ave. Delay Per Vehicle (sec.)	Level of Service
Morning	0.57	14.4	B
Afternoon	0.44	27.1	C

The forecast afternoon peak hour conditions without the median refuge do satisfy the warrant for a traffic signal at this intersection in 2012. The actual driveway conditions should be monitored to determine if actual traffic volumes and conditions satisfy one or more of the MUTCD warrants.

The storage length for the left-turn lane from Geiger Road into the driveway was estimated based on STOP sign control using the Synchro queue length estimate as well as the rule of thumb formula:

$$\text{Storage Length} = \text{Average arrival in one minute} \times \text{safety factor of } 2 \times 25 \text{ feet per vehicle}$$

The estimated storage lengths based on each method are 125 feet based on SimTraffic queue estimate and 75 feet based on the formula.

To accommodate the queue for either the STOP sign or signal control, as well as truck traffic, and allow deceleration (from speed of 35 mph), the following left turn lane is proposed for eastbound Geiger Road:

Full width lane length	200 feet
Taper length	75 feet.

Roosevelt Avenue-Project Access 2 – During the afternoon peak hour, the increased volume of vehicles turning left from the STOP sign-controlled Access 2 driveway onto eastbound Roosevelt Avenue would exceed the estimated number of gaps available in the through traffic along Roosevelt Avenue for this movement. The average delay per vehicle with Scenario B would increase by several times over the average delays with Scenario A with both scenarios having extremely long estimated average delays per vehicle.

The intersection conditions were analyzed relative to the MUTCD Warrant #3 criteria to check if the projected conditions would allow consideration of a traffic signal at this intersection. The afternoon peak hour traffic conditions for Scenario B were compared to the MUTCD Warrant #3 criteria.

- **Warrant 3 Category A**

All three conditions of these criteria must be satisfied by the same one-hour period: With the makai-bound approach of the four-leg intersection striped to provide separate left-turn and right-turn lanes, the requirements and forecast values for the afternoon peak hour period are as follows:

Peak Hour Criteria	Minimum Requirement	Forecast Amount	Satisfy Requirement
Minor Street Delay	5 hours	108.0 hours	Yes
Minor Street Volume	150 vehicles	795 vehicles	Yes
Total Intersection Volume	800 vehicles	1,768 vehicles	Yes

The forecast intersection conditions in 2012 with Scenario B would satisfy the Warrant #3A criteria to permit consideration of a traffic signal at this location.

- **Warrant 3 Category B**

For the number of lanes at this intersection and the afternoon peak hour volumes along Roosevelt Avenue, this warrant would require a minimum of 300 vehicles on the driveway approach in the peak hour.

The driveway, with a forecast 795 vehicles in the afternoon peak hour, has more than the minimum volume requirement and satisfies this part of the warrant.

The forecast afternoon peak hour conditions satisfy the warrant for consideration of a traffic signal at this intersection in 2012. The actual driveway conditions should be monitored to determine if actual traffic volumes and conditions satisfy one or more of the MUTCD warrants.

If a traffic signal were to be installed with the planned lanes, the traffic conditions with the forecast with the Scenario B traffic would be as follows:

Peak Hour	Volume-to-Capacity Ratio	Ave. Delay Per Vehicle (sec.)	Level of Service
Morning	0.83	32.6	C
Afternoon	0.56	16.4	B

The storage length for the left-turn lane from eastbound Roosevelt Avenue into the driveway was estimated based on STOP sign control using the Synchro queue length estimate as well as the rule of thumb formula:

$$\text{Storage Length} = \text{Average arrival in one minute} \times \text{safety factor of } 2 \times 25 \text{ feet per vehicle}$$

The estimated storage lengths based on each method are 205 feet based on signal control and SimTraffic 95% probability and 75 feet based on the formula.

If a signal is installed, the turn lane should be 300 feet in length, plus taper based on the SimTraffic queue estimate as well as proposed truck traffic that will use Access 2.

To accommodate the queue for either the STOP sign or signal control, plus allow deceleration (from speed of 35 mph), the following left turn lane is proposed for eastbound Roosevelt Avenue:

Full width lane length	350 feet
Taper length	75 feet.

Off-site Intersections

Traffic conditions with Project Scenario B without the Renton Road driveway connection are summarized for the key intersections near the Project site in Table 6-2 for the morning and afternoon peak traffic hours. For comparison, the existing and year 2012 conditions with the Proposed Project (Scenario A) are also presented in Table 6-2. The impact on the traffic conditions at key intersections are discussed in the following paragraphs.

Geiger Road-Kapolei Parkway – The absence of the Renton Road Project access connection would increase the volume of Project traffic using Geiger Road to access the Kapolei Parkway and Fort Weaver Road, while the volume of Project traffic passing through the intersection along the Kapolei Parkway would decrease as compared to Scenario A. The net effect would be to increase the average overall delay at the intersection by about 3 to 6 seconds per vehicle as compared to Scenario A. The changes in the Project traffic flow is not expected to significantly change the level of intersection capacity use.

Traffic conditions with Scenarios B and C would merit the same mitigative actions as discussed in Chapter 5 for the intersection.

Geiger Road –Coral Creek Road A – The removal of the Project access to Renton Road would result in increased Project traffic along Geiger Road through the Coral Creek Road A intersection. The increased Project traffic would add about 21 to 26 seconds to the average delay for traffic turning left from the Coral Creek Road A approach in each peak hour as compared to Scenario A. The average delay for the left turn traffic would be at LOS F in both peak hours for all three Project scenarios.

The conditions would not be sufficient to satisfy MUTCD Warrant #3 due to the relatively low number of affected vehicles. No mitigative actions are proposed for this intersection.

Roosevelt Avenue-Philippine Sea Street – With Scenario B, the left-turn from this intersection would likely have to be restricted. Delays are expected to increase approximately by 10-15 seconds for each peak hour and increase LOS from C to D.

Roosevelt Avenue-Fort Barrette Road – Scenario B would substantially increase the traffic volumes turning left from makai-bound Fort Barrette Road and turning right from westbound Roosevelt Avenue. The traffic increases would lengthen the estimated average delay for traffic turning left from makai-bound Fort Barrette Road to 487 seconds in the morning peak hour, as compared to 92 seconds with the proposed Project Scenario A access in the morning peak hour, Scenario B would increase average delay for this left turn to 230 seconds versus 115 seconds with Scenario A during the afternoon peak hour.

Scenario B would satisfy MUTCD Warrant #3 criteria with an estimated 108 hours of delay for the makai-bound approach versus the 5 hours requirement.

If signal control is in place at the Fort Barrette Road intersection with Roosevelt Avenue, the intersection would operate at the following conditions with the Project Scenario B traffic:

Peak Hour	Volume-to-Capacity Ratio	Ave. Delay Per Vehicle (sec.)	Level of Service
Morning	0.83	26.2	C
Afternoon	0.61	20.5	C

Renton Road Intersections – With Project Scenario B, the planned traffic lanes at the Renton Road-Kapolei Parkway intersection should accommodate peak hour traffic at acceptable conditions. No mitigative actions would be needed at this intersection.

As with Project Scenario A, very little Project traffic would be expected to use Renton Road between the Kapolei Parkway and Fort Weaver Road and should have minor impacts on the intersections along Renton Road. As noted in Table 6-2, the Scenario B traffic is estimated to increase the delay to traffic turning out of Tenney Road by less than one second in the either peak hour.

Fort Weaver Road Intersections – Project Scenario B traffic forecast would have similar impacts on the Fort Weaver Road intersections as Scenario A. The revised traffic flow would result in small increases in average delay at the Geiger Road intersection due to an increase in traffic turning left. At the Renton Road intersection, Scenario B traffic would result in a small decrease in delay in the afternoon peak hour due to slightly fewer vehicles turning left out of Renton Road.

Table 6-2
2012 TRAFFIC CONDITIONS AT KEY INTERSECTIONS
WITH PROJECT ACCESS SCENARIOS

Intersection	Scenario	Weekday Morning Peak Hour			Weekday Afternoon Peak Hour		
		V/C	ADPV	LOS	V/C	ADPV	LOS
Fort Weaver Rd.- Geiger Rd.	2012 With Project A	0.86	82.3	F	0.83	79.3	E
	2012 Scenario B	0.86	82.3	F	0.83	79.3	E
Kapolei Pkwy.- Geiger Rd.	2012 With Project A	1.08	100.3	F	0.95	48.9	D
	2012 Scenario B	1.07	111.5	F	0.98	51.3	D
Geiger Rd.- Coral Creek Road A NB Left	2012 With Project# A	0.21	78.6	F	0.23	60.3	F
	2012 Scenario# B	0.30	121.2	F	0.36	103.2	F
Roosevelt Ave.- Philippine Sea St. SB	2012 With Project# A	0.25	20.1	C	0.17	16.0	C
	2012 Scenario# B	0.36	31.1	D	0.32	31.1	D
Roosevelt Ave.- Fort Barrette Rd.	2012 With Project A	0.67	23.6	C	0.58	21.4	C
	2012 Scenario B	0.90	33.4	C	0.66	24.8	C
Fort Weaver Rd.- Renton Rd.	2012 With Project A	0.98	70.1	E	0.97	62.4	E
	2012 Scenario B	0.98	70.1	E	0.97	62.4	E
Renton Rd.- Tenney St. SB	2012 With Project# A	0.42	29.8	D	0.18	19.0	C
	2012 Scenario# B	0.42	29.8	D	0.18	19.0	C
Renton Rd.- Kapolei Pkwy.	2012 With Project A	0.84	37.6	D	1.12	66.9	E
	2012 Scenario B	0.77	28.4	C	0.75	27.5	C

V/C = Ratio of the traffic volume to the theoretical capacity of the intersection.

ADPV = Average delay per vehicle, in seconds.

LOS = Level of service.

= Conditions with STOP controls.

A = Original Site Plan Design Scenario

B = Without Renton Road Access Scenario

Wilbur Smith Associates; June 27, 2007.

Conclusion

With the elimination of the Access 3 connection to Renton Road (Scenario B), little or no Project traffic would use Renton Road. However traffic entering/exiting the Project would also experience heavy delays and may require signalization at Geiger / Site Access. Additionally, increased delays and impacts will also be experienced at the intersections of Roosevelt Ave / Fort Barrette Rd and Roosevelt Ave / Philippine Sea St; impacts that may result in the need for signalization to improve traffic operations and safety after full buildout of the Project.

Therefore, if access is not provided to Renton Rd directly from Project driveway and can not utilize a cut-through street (Scenario B), signalization of Roosevelt Ave / Access 2 may be required as an improvement beyond those recommended with Scenario A. However with Scenario A, left and right turn lanes at Roosevelt Ave / Access 2 and at Geiger Rd / Access 1 would only be needed to provide adequate level of service as discussed in Chapter 5.

Appendix A

Methodology for Analyzing Traffic Conditions

The Transportation Research Board (TRB), a division of the National Science Foundation, has developed standardized methods for use in evaluating the effectiveness and quality of service for roadways and streets. Different methodologies are available for analyzing traffic signal-controlled intersections and other types of roadways.

The TRB evaluation methods use concepts referred to as volume-to-capacity ratio and level-of-service (LOS). The volume-to-capacity ratio (V/C) compares the existing or projected traffic volumes on a facility to the facility's theoretical capacity and, as such, indicates the relative adequacy of the facility to accommodate the traffic volumes. Capacity is estimated primarily from the facility's physical characteristics (e.g. number and widths of lanes), and to a lesser extent by the traffic characteristics (e.g. types of vehicles) and type of traffic controls. The level of service concept describes facility traffic conditions in terms of travel delays or travel speeds, with the service quality expressed on a letter basis from A to F, which signify excellent to unacceptable conditions, respectively.

Signal-Controlled Intersections--Traffic conditions at traffic signal-controlled intersections were evaluated using the Operations Analysis methodology described in the *2000 Highway Capacity Manual (HCM)*.¹ The methodology calculates a ratio of actual or estimated peak hour traffic volumes to the theoretical capacity of the intersection. This volume-to-capacity ratio (V/C) reflects the physical characteristics of the intersection and the traffic characteristics, and is somewhat independent of the efficiency of the traffic signal phasing/timing. This ratio indicates the proportion of available capacity being used by traffic volumes and where there is unused capacity available for future traffic increases.

With the 2000 HCM method, the level-of-service is based on the average delay per vehicle for the various movements within the intersection as a result of the traffic signal control. This total delay is the difference between the travel time experienced with the traffic signal and the reference travel time that would result under ideal conditions, in the absence of the traffic control and geometric delay. This delay, referred to as control delay, includes initial deceleration delay, stop delay, queue move-up delay, and final acceleration delay. Average delay time and level-of-service is estimated for the entire intersection, for each roadway approach, and for each traffic movement or lane group. A description of the criteria associated with LOS A through LOS F is provided in Table A-1.

In the assessment of traffic signal-controlled intersections, it is usually most appropriate to relate the adequacy of the geometric design features (such as numbers and use of lanes, lane widths, etc.) to the V/C. Delay and LOS are most relevant to assessing modifications to the traffic signal controls, since these are most directly related to the signal design features, such as cycle length, number and arrangement of phases, and allocation of green time.

¹ *2000 Highway Capacity Manual*, Transportation Research Board, October 2000.

Unsignalized Intersections—At intersections with STOP sign controls, the level of service was calculated using the 2000 HCM procedures for intersections with STOP or YIELD signs. In this methodology, the six levels of service, A through F, are used to describe traffic conditions for those movements that must yield to other movements:

- Left-turn out of the side street or driveway;
- Through movement from the side street,
- Right-turn out of the side street or driveway; and
- Left-turn into the side street.

Through vehicles on the major streets are not required to yield to other movements at two-way STOP controlled intersections.

The general indicator of intersection delay is determined by calculating the one-hour capacity for each key movement, based on the conflicting traffic volumes, and then comparing the number of vehicles making that maneuver to the calculated capacity. The unused or “reserve” capacity for the movement is then used to identify a delay time and a level-of-service for that movement. Unlike analysis at signalized intersections, an overall intersection level-of-service is not calculated, but a level-of-service is calculated for each lane group subject to the STOP or YIELD condition.

**Table A-1
LEVEL-OF-SERVICE CRITERIA FOR
INTERSECTIONS WITH TRAFFIC SIGNAL CONTROL**

LOS	Average Stopped Delay (seconds/vehicle)
A	<10.0
B	10.1 – 20.0
C	20.1 – 35.0
D	35.1 – 55.0
E	55.1 – 80.0
F	>80

Source: 2000 Highway Capacity Manual, Transportation Research Board, Chapter 16, 2000.

**Table A-2
LEVEL-OF-SERVICE CRITERIA
FOR UNSIGNALIZED INTERSECTIONS**

LOS	Average Stopped Delay (seconds/vehicle)
A	<10.0
B	10.1 – 15.0
C	15.1 – 25.0
D	20.1 – 35.0
E	35.1 – 50.0
F	>50

Source: 2000 Highway Capacity Manual, Transportation Research Board, Chapter 17, 2000.

The level-of-service criteria for unsignalized intersections with STOP or YIELD controls are defined in Table A-2.

Freeway Sections – Speed and the freedom to maneuver are primary indicators of operating conditions on freeway sections. Both of these are related to the density of vehicles in the traffic stream, which the 2000 HCM uses to define conditions on freeway sections. Table A-3 presents the maximum vehicle density, minimum speed, and maximum volume-to-capacity ratio for Level of Service A through F for freeways designed for free flow speeds of 65 mph. The criteria for the 65 mph free flow speed are used in this study since this represents the posted speed limit, even though the design speed is likely higher. The maximum capacity is considered to be 2,400 vehicles per lane per hour under average conditions for six- and eight-lane freeways.

With these guidelines and assumptions, the H-1 Freeway is assumed to provide capacities of 2,350 vehicles per hour for normal use lanes.

Roadway or Freeway Ramp Weaving Sections – Weaving sections are formed where a merge area is followed by a diverge area with the two joined by an auxiliary lane with intense lane-change maneuvers taking place. The conditions within a weaving section is a factor of the length of the weaving section, the number of lanes, and the configuration of the entry leg, weaving section, and exit leg, as well as the volumes of the various traffic movements. The HCM 2000 relates the level of service to the vehicle density within the weaving section as presented in Table A-4.

**Table A-3
LEVEL OF SERVICE CRITERIA FOR BASIC FREEWAY SEGMENTS**

Level of Service	Maximum Density (PC/Mi/Ln)	Minimum Speed (mph)	Maximum Service Flow Rate (PC/Hr/Ln)	Maximum Volume/Capacity Ratio
A	11.0	65.0	710	0.30
B	18.0	65.0	1,170	0.50
C	26.0	64.6	1,680	0.71
D	35.0	59.7	2,090	0.89
E	45.0	52.2	2,350	1.00
F	*	*	*	*

Criteria based on free flow speed of 65 miles per hour (mph)

PC/Mi/Ln = Passenger cars per mile per lane

PC/Hr/Ln = Passenger cars per hour per lane

* = Unstable operations, demand exceeds capacity of the junction.

Source: Highway Capacity Manual 2000, Transportation Research Board, Chapter 23, 2000.

**Table A-4
LEVEL OF SERVICE CRITERIA FOR WEAVING SEGMENTS**

Level of Service	Density (pc/mi/ln)	
	Freeway Weaving Segment	Multilane and Collector-Distributor Segments
A	10 or less	12 or less
B	10-20	12-24
C	20-28	24-32
D	28-35	32-36
E	35-43	36-40
F	Over 43	Over 40

PC/Mi/Ln = Passenger cars per mile per lane

Source: Highway Capacity Manual 2000, Transportation Research Board, Chapter 24, 2000.

Appendix B Distribution of Project Trips

2009 Trip Distribution				
Area or Corridor	Morning Peak Hour		Afternoon Peak Hour	
	To Project	From Project	To Project	From Project
Fort Weaver Road Mauka	30	25	25	30
Fort Weaver Road Makai	10	5	5	10
Kapolei Parkway Makai	18	10	10	18
Iroquois Point	1	1	1	1
Ewa Town-Renton Road	4	4	4	4
North-South Road/East Kapolei	10	20	20	10
Fort Barrette Road/ Kapolei/	25	30	30	25
Kalaeloa Redevelopment Area	2	4	4	2
Totals	100	100	100	100
Wilbur Smith Associates; September 11, 2006				

2012 Trip Distribution				
Area or Corridor	Morning Peak Hour		Afternoon Peak Hour	
	To Project	From Project	To Project	From Project
Fort Weaver Road Mauka	15	10	10	15
Fort Weaver Road Makai	10	5	5	10
Kapolei Parkway Makai	18	10	10	18
Iroquois Point	1	1	1	1
Ewa Town-Renton Road	4	4	4	4
North-South Road/East Kapolei	25	35	35	25
Fort Barrette Road/ Kapolei/	25	30	30	25
Kalaeloa Redevelopment Area	2	4	4	2
Totals	100	100	100	100
Wilbur Smith Associates; September 11, 2006				

APPENDIX III

STATE LAND USE BOUNDARY

LINDA LINGLE
GOVERNOR



ANTHONY J.H. CHING
EXECUTIVE OFFICER

STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
P.O. Box 2359
Honolulu, Hawaii 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

October 18, 2007

RECEIVED
OCT 22 2007

Mr. Vernon Nakagawa
ESH, Inc.
900 Halekauwila Street
Honolulu, Hawaii 96814

ENGINEERS SURVEYORS HAWAII, INC.

Dear Mr. Nakagawa:

Subject: BOUNDARY INTERPRETATION No. 07-12
Honouliuli, Ewa, Honolulu, Oahu, Hawaii
Tax Map Key: 9-1-69: 03

This is in response to your letter dated March 19, 2007, requesting a boundary interpretation for the subject parcel.

Upon receipt of your letter, we reviewed the Commission's records and official maps currently on file at our office. Based on our review, we confirm that the State Land Use (SLU) Urban/Agricultural District boundary as located, named, and delineated on your map entitled *Plan Showing Phasing of Lot 4378 (Map 437) of Land Court Application 1069*, dated August 22, 2007, is subject to SLU Docket A88-627 Gentry Development Company boundary which was adopted by the Commission and effective dated July 25, 1989.

We have enclosed a copy of the above map for your reference.

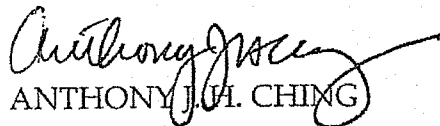
Mr. Vernon Nakagawa

October 18, 2007

Page 2

Should you require clarification or further assistance, please do not hesitate to contact Fred Talon or Bert Saruwatari of my staff at 587-3822.

Sincerely,


ANTHONY J. CHING
Executive Officer

Enclosure

- c: Henry Eng, Director, Department of Planning and Permitting, City & County of Honolulu, Attn: Anne Lau, Zoning Plan Review Branch (w/enclosure)
Glenn Y. Sato, Tax Maps & Records Supervisor, Department of Budget and Fiscal Services, City & County of Honolulu (w/enclosure)
Ken Schmidt, GIS Administrator, Honolulu Land Information System (HoLIS), Department of Planning and Permitting, City & County of Honolulu (w/enclosure)

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.nr.com

December 6, 2007

Mr. Anthony J.H. Ching
Executive Director
Land Use Commission
P.O. Box 2359
Honolulu, Hawaii 96804-2359

**Subject: 2007 Annual Report
Docket No. A88-627
Ewa Industrial Park
"Ewa by Gentry"**

Dear Mr. Ching:

On behalf of the new owner, Ewa Industrial Park, LLC, of the Ewa Industrial Park site (formerly part of the "Ewa by Gentry" property reclassified from Agricultural District to Urban District by Docket No. A88-627), Ewa Industrial Park LLC, we are submitting this annual progress report to the Land Use Commission ("LUC"), the State Office of Planning, and the City Department of Planning and Permitting (DPP) pursuant to Condition 26 of the May 8, 1989 LUC Decision and Order in Docket No. A88-627.

The Ewa Industrial Park, LLC purchased the property from Waikii Ventures, Inc. on February 16, 2007. Waikii Ventures, Inc. previously purchased the property from the Estate of James Campbell (Campbell Estate).

The subject of this annual report is the reclassification of approximately 23.3 acres ("Industrial Property", map in Exhibit I) of the total 673.5 acres that were reclassified. The Industrial Property is part of a larger 48.395-acre parcel located in Honouliuli, Ewa, Island of Oahu, State of Hawaii from Agricultural District to Urban District. The remainder of the parcel is still in the Agricultural District and will be the subject of a future request for reclassification to an Urban District.

I. General Progress

The Industrial Property and the remainder of the 48.395-acre parcel is the subject of a Draft Environmental Assessment that is currently being processed by DPP. The Final Environmental Assessment is expected to be completed within the next two weeks. The Owner proposes to develop industrial buildings with space for sale or rent and will be submitting an application for rezoning the Industrial Property from AG-2 General Agricultural District to I-2 Intensive Industrial District within the next month.

II. Status of Compliance with Conditions

The conditions for the reclassification are reproduced in italics and are followed by the Owner's progress in compliance for the Industrial Property. The Gentry Investment Properties "Ewa By Gentry, Docket No. A88-627, SLUC Annual Report, July 2006" on compliance with the conditions for reclassification of the larger 650.2-acre portion of the 673.3-acre property that was reclassified is provided in Exhibit II.

1. *Petitioner shall implement sound attenuation measures on all residential units on the Property that are subject to noise levels from 60 Ldn to 65 Ldn as determined by the State of Hawaii, Department of Transportation, Honolulu International Airport Draft 1987 Noise Contour Map introduced as OSP's Exhibit Number 2, herein referenced the HIA 1987 Ldn Map.*

Petitioner shall not construct residential units on any portion of the Property subject to noise levels 65 Ldn or greater as indicated on the HIA 1987 Map.

The Industrial Property is in an area below 60 Ldn as depicted in the reduced copy of the HIA 1987 Map and a blow up of the area over 60 Ldn noise contour line with the crossed hatch area over 60 Ldn (Exhibit III). The Industrial Property is planned for industrial use and only accessory dwellings for owners or caretakers are permitted.

2. *Petitioner shall grant to the State of Hawaii an avigation easement in the form prescribed by the State Department of Transportation on any portion of the Property subject to noise levels 60 Ldn or greater as determined by the HIA 1987 Ldn Map.*

The Industrial Property is in an area where noise contours from the HIA 1987 Map indicates levels below 60 Ldn.

Gentry Investment Properties (Gentry) noted that on April 3, 1996, a Grant of Avigation and Noise Easements instrument dated February 23, 1996 was recorded as Land Court Document No. 2299688 (Exhibit II).

3. *Petitioner shall be responsible for implementing sound attenuation measures to reduce noise levels from vehicular traffic in the Property and along Ft. Weaver Road to acceptable levels. Petitioner shall coordinate its actions with the State Department of Health, DOT, and agencies of the City.*

The Industrial Property is situated about 3,900 feet away from Ft. Weaver Road and is not impacted by noise from vehicular traffic on Ft. Weaver Road. Vehicular traffic within the Industrial Property is not expected to create noise impacts exceeding acceptable levels for an Industrial Park.

Gentry has implemented sound attenuation measures along Ft. Weaver Road (Exhibit II).

- 4, *Petitioner shall contribute to affordable housing opportunities for low, low-moderate, and moderate-income residents in the State of Hawaii to the satisfaction of the City and County of Honolulu. The location and distribution of the affordable housing or other provisions for affordable housing shall be under such terms as may be mutually agreeable between petitioner and the City and County of Honolulu. (Note: On July 13, 1998, the State Land Use Commission*

approved the deletion of the former Condition No. 4 and the replacement with this new Condition No. 4)

The Industrial Property is not zoned for residential development and affordable housing is not planned at this site.

Gentry provided a letter from DPP confirming their compliance with the City's affordable housing program for their development (Exhibit II).

5. *Petitioner shall coordinate, with the Board of Water Supply, the Department of Land and Natural Resources, the Ewa Plain Water Development Corporation, adjoining landowners and developers, and/or other federal, state or county agencies, measures designed to develop water for the Property. Petitioner through its affiliates and together with the other members of the Ewa Plain Water Development Corporation shall develop, at the expense of the Ewa Plain Water Development corporation, the necessary water source, storage and transmission facilities to provide an adequate supply of potable water to the Property prior to the development of the Property.*

Based on the Gentry Investment Properties "Ewa By Gentry, Docket No. A88-627, SLUC Annual Report, July 2006" on compliance with the conditions for reclassification of the larger 650.2-acre portion of the 673.3-acre property that was reclassified:

"...Major portions of EPWDC's water program (including dedicated source and well facilities, storage and transmission for a water system of 6.72 million gallons per day) have already been implemented and were dedicated to BWS in 1991."

Campbell Estate, former owner of the Industrial Property was involved in the Ewa Plain Water Development Corporation that developed the necessary water source, storage and transmission

facilities to provide an adequate supply of potable water for the Industrial Property.

The Board of Water Supply in response to the Owner's Draft Environmental Assessment noted that the existing water system is presently adequate to provide the domestic water requirements of the proposed industrial development.

6. *Petitioner shall participate in the funding and construction of transportation improvements at access points to the Property as identified by the State Department of Transportation.*

Petitioner shall also participate with all adjoining landowners and developers on a fair share basis in the funding and construction of other on-site and off-site transportation improvements necessitated by development of the Property and in designs and schedules accepted by and coordinated with the State Department of Transportation, provided that the extent of Petitioner's participation shall not exceed Petitioner's share of the increased community traffic impacts in the Ewa and Central Oahu region, and provided that, in the event that the City adopts an impact fee for transportation improvements, the foregoing requirements shall not include or double-count the cost of any specific traffic improvements which may also be included in the City's impact fee computation.

Such improvements may include, but not be limited to, Geiger Road, Iroquois Point Road and Ft. Weaver Road, improvements to the Kunia Interchange, construction of the north-south road and its accesses to the H-1 freeway and Farrington Highway, and construction of the proposed east-west road to Kapolei Town Center.

The Owner will participate in the funding and construction of transportation improvements at access points to the Industrial Property. Since the main access point is off of a City roadway, the scope of improvements will be determined by the City's Department of Transportation Services (DTS) and DPP. The Owner expects the

secondary access point off of Roosevelt Avenue to be reviewed by DTS, DPP and DOT.

The Owner's proposed industrial development will be paying impact fees into the Ewa Regional Highway Fund in accordance with Chapter 33A of the Revised Ordinances of Honolulu (ROH). The applicant estimates that with the floor area proposed, the impact fee for the Industrial Property would generate about \$2,000,000 to \$3,000,000 in funding to help pay for regional traffic improvements.

A Transportation Impact Analysis Report for Ewa Industrial Park, ("Traffic Study"), dated June 29, 2007 (Exhibit IV), was prepared for the Owner by Wilbur Smith Associates for the proposed industrial development at the Industrial Property. This study determined the improvements that will be needed to support the proposed industrial development at build-out of each of two phases.

7. *Petitioner shall monitor the traffic attributable to the development proposed on the Property at on-site and off-site locations and shall undertake subsequent mitigative measures that may be reasonably required. These activities shall be coordinated with and approved by DOT.*

Based on preliminary discussions with staff at DOT, the Owner will be asked to update the Traffic Study prior to development of the Roosevelt Avenue access planned as part of Phase II of the development. At that time DOT would require that improvements required to support that access be provided by the Owner.

8. *Petitioner shall coordinate its transportation improvements with other landowners and developers in the Ewa region to ensure that all reasonably necessary improvements are operational in consonance with urban development.*

The Owner has been meeting with the Gentry Development Properties to discuss cost sharing in the improvements planned for

Geiger Road, the primary off-site improvements that are needed to support the proposed development.

9. *The Petitioner shall appoint a permanent transportation manager whose function is the formation, use, and continuation of alternative transportation opportunities that would optimize the use of existing and proposed transportation systems. This transportation manager may provide similar services for Petitioner's other projects in Ewa and Central Oahu.*

In the alternative, Petitioner may participate in a regional program for transportation management with other developers and/or land owners. This program shall address the formulation, use, and continuation of alternative transportation opportunities that would optimize the use of existing and proposed transportation systems.

The Owner shall establish an association which shall include all owners of the proposed Lots ("Association") that will have as one of its responsibilities the promotion of alternative transportation opportunities that would optimize the use of existing and proposed transportation systems. The Association shall either: (1) designate a transportation manager who shall facilitate the coordination of actions and promotions with DOT and DTS; or (2) join the Leeward Oahu Transportation Management Agency (LOTMA) which serves to provide transportation management services to its members.

10. *Petitioner shall provide drainage improvements in the Property and shall coordinate off-site improvements with Campbell Estate, Intervenor, adjoining land owners and developers and/or other federal, State or City agencies.*

The drainage master plan developed in coordination with Campbell Estate, Gentry, adjoining land owners and developers, and federal, State and City agencies planned to have the Coral Creek Golf Course handle the Kaloi Gulch peak flows, including runoff from our the Industrial Property. The Owner has received a letter from the Coral

Creek Golf, LLC noting that they will not oppose the proposed drainage draining into their property.

11. *Petitioner shall participate in an air quality monitoring program as specified by the State Department of Health.*

In response to a letter for the Kapolei Business-Industrial Park, East project, inquiring about a similar condition for their State Land Use Boundary amendment, the State Department of Health (DOH) has noted in a letter dated April 20, 2007 (Exhibit V) that "Hawaii is in attainment with the National Ambient Air Quality Standards for the criteria air pollutants and since a monitoring station is located in Kapolei, no further action is required of you." DOH has recommended that a dust control management plan be developed for all phases of development and construction activities for the Kapolei Business-Industrial Park, East.

The Owner will prepare and implement a dust control management plan for all phases of development for the Industrial Property.

In a follow up conversation with staff at the Clean Air Branch on the Industrial Property, staff noted that there is an existing monitoring station on the neighboring property (the Honouliuli Sewage Treatment Plant). Staff further commented that the DOH requires monitoring for certain individual users that have a potential for adverse air quality impacts and that such users are required to file for operating permits from DOH which may include a condition for air quality monitoring.

12. *Petitioner shall participate in a study in coordination with the City and the State Department of Health to assess the odors emanating from the Honouliuli Wastewater Treatment Plant (HWWTP) on the Property. Petitioner shall make the results of such a study available to the State and the City upon its completion.*

Based on the Gentry Investment Properties "Ewa By Gentry, Docket No. A88-627, SLUC Annual Report, July 2006" on compliance with the conditions for reclassification of the larger 650.2-acre portion of the 673.3-acre property that was reclassified:

"The City and County of Honolulu has initiated an Odor and Noise Master plan effort, also known as the Reduction of Odor and sound Emission (ROSE) program....Because the City is taking the lead in t...Major portions of EPWDC's water program (including dedicated source and well facilities, storage and transmission for a water system of 6.72 million gallons per day) have already been implemented and were dedicated to BWS in 1991."

13. *Petitioner shall connect the wastewater system for the development proposed on the Property to the HWWTP. Construction of residential and industrial uses within the property shall not commence until Petitioner has obtained assurances from the City that the capacity at the HWWTP has been reserved for the development on the Property. Petitioner shall coordinate with the City Department of Public Works and the State Department of Health for the provision of adequate buffer measures, including appropriate land uses, between the development on the Property and the existing HWWTP and any proposed expansion of the HTWWP to minimize noise, odor and other impacts associated with HTWWP.*

The Owner has received approval of a Sewer Connection Approval for Phase 1 of the Industrial Property development. The Owner of the industrial development will have met with staff at the Department of Environmental Services

14. *Petitioner shall immediately stop work on the impacted area and contact the State Historic Preservation Office should any archaeological resources such as artifacts, shell, bones, or charcoal deposits, human burial, or rock or coral alignments, paving or walls of historic or prehistoric significance be encountered during the*

development on the Property.

The Owner will instruct his contractors that should any archaeological resources, as noted, be found that they are to immediately stop work on the impacted area and contact the State Historic Preservation Division.

15. *Petitioner shall provide, at no cost to the State, a public school site encompassing six (6) acres, if adjacent to a public park, or eight (80) acres if not adjacent to a public park, as the Department of Education (DOE) may determine reasonably necessary to serve the needs of residents of the Property. The school site shall be provided, if there is a need for such a site, in a location as may be mutually agreeable to Petitioner and the DOE. As an alternative, Petitioner may provide a share of the cost of classrooms or other educational facilities with the approval of DOE.*

Gentry has dedicated an eight-acre public school sit adjacent to a future public park (Exhibit II).

16. *Petitioner shall disclose to all initial purchasers (a) possible aircraft noise and vibration and possible odor, air, noise and dust pollution resulting from the Ft. Weaver Road, Barbers Point Naval Air Station, Honolulu International Airport, Honouliuli Wastewater Treatment Plant, and adjoining agricultural operations, (b) the Hawaii Right-To-Farm Act, HRS Chapter 165, which limits the circumstances under which preexisting farm activities on adjacent lands may be deemed a nuisance, and © existence of the Explosives Safety Zone at West Loch Branch, Naval Magazine, Lualualei, (d) the transport of explosives and munitions on roadways through and in the vicinity of the Property.*

The Owner will disclose to all initial purchasers those potentially hazardous and adverse impacts from surrounding existing uses described in Condition 16. However, noting that this Industrial Property is not in close proximity to Ft. Weaver Road and the

Explosive Safety Zone at West Loch Branch and is not expected to suffer adverse impacts from these uses.

17. *Petitioner shall maintain the alignment of existing cane haul roads or provide alternate cane haul roads pursuant to Petitioner's agreements with Campbell Estate and OSCO to assure uninterrupted agricultural operations of sugarcane cultivation areas.*

OSCO has ceased sugar cultivation operations and is no longer using the cane haul roads in the area.

18. *Petitioner shall participate with City and State civil defense agencies, Intervenor, and adjoining landowners and developers in the formulation of an emergency preparedness and evacuation plan for residents of the Property due to the Property's proximity to the Explosive Safety Hazard Zone at the West Loch Branch, Navy Magazine, Lualualei.*

Based on recommendations for the State Civil Defense Agency and the Oahu Civil Defense Agency, a siren was installed by Gentry near the Coral Creek Golf Course, and has been operational since March 2003 (Exhibit II).

19. *Petitioner shall establish a forty-(40) foot setback along the existing railroad right-of-way in a manner compatible with City Ordinance No. 84-94.*

The Owner plans to provide a 50-foot setback along the existing railroad right-of-way abutting the Industrial Property, in accordance with current standards of the Ewa Development Plan, Ordinance No. 97-49.

20. *Petitioner shall not place along Geiger or Iroquois Point Roads or at the intersection of any road within these two roadways any obstruction which would hinder aircraft towing along these two roadways in order to maintain an obstruction-free corridor 80 feet in*

width and 25 feet in height along these roadways.

The Owner will comply with the Navy's requirements for an obstruction-free corridor along Geiger Road. The Industrial Property does not front on Iroquois Point Road. Because of Barbers Point Naval Air Station's closure, aircraft formerly towed along Geiger Road have been decommissioned at the Air Station and, as a result, the obstruction-free corridor is no longer required by the Navy. However, improvements planned along Geiger Road will maintain the obstruction-free corridor.

21. *Petitioner shall coordinate with the Department of the Navy to assure that any work in the vicinity will not damage or in any way limit access to utility, communication or fuel lines.*

The Owner will coordinate with the Navy on all proposed work in the vicinity of Navy utility, communication or fuel lines.

22. *Petitioner shall construct no road which enters from the Property onto Geiger or Iroquois Point Roads within 200 feet of any Navy installation's boundary.*

The Industrial Property's proposed Phase I access on Geiger Road is located about 1,500 feet from the Navy installation boundary and all improvements planned at this access point will be well over 200 feet from the Navy boundary. The Industrial Property's Phase II access is planned to connect to Roosevelt Avenue which is at the Navy installation boundary. However, the Owner understands that this portion of the Navy installation property is in the process of being sold, eliminating the need for this condition.

23. *Petitioner shall install a fence or other structure along the eastern boundary of the Property to minimize residents' inadvertent entrance into the Explosives Safety Zone, which commences at the Property's eastern boundary, with the western boundary of Naval Magazine Lualualei West Loch Branch.*

The Industrial Property is located about 7,500 feet away from the Naval Magazine West Loch Branch and is not subject to this condition.

24. *Petitioner shall complete the development on the Property in substantial compliance with the representations made before the Commission.*

The proposed development of this Industrial Property is in substantial compliance with representations made before the Commission.

25. *Petitioner shall notify the Commission of any intent to sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interest in the Property prior to visible commencement of construction on the Property; provided, however, that Petitioner may transfer ownership in the Property to an affiliate or in a manner consistent with prior representations to the Commission, and may mortgage the Property at any time without notice to the Commission.*

The Owner is using this report to notify the Commission of its intent to sell and/or lease portions of the Industrial Property to industrial users in the form of space within industrial buildings planned for the site. Portions of the structures and land shall be sold as fee condominium (industrial) sites for fee simple buyers and portions shall be leased to industrial users seeking to lease space.

26. *Petitioner shall provide annual reports to the Land Use Commission, the Office of State Planning, and the City and County of Honolulu, Department of General Planning in connection with the status of the subject project and the Petitioner's progress in complying with the conditions imposed.*

This annual report has been prepared to satisfy this condition.

27. *The Commission may fully or partially release these conditions as to all or any portion of the property upon timely motion and upon the*

Mr. Anthony J.H. Ching

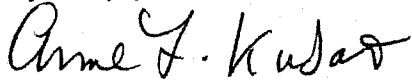
Page 14

*provision of adequate assurance of satisfaction of these conditions by
Petitioner.*

The Owner understands this condition but is not seeking the release
of any conditions at this time.

This serves as the Owner's annual report for 2007. The Owner appreciates your
review and acceptance of this annual report for 2007.

Very truly yours,



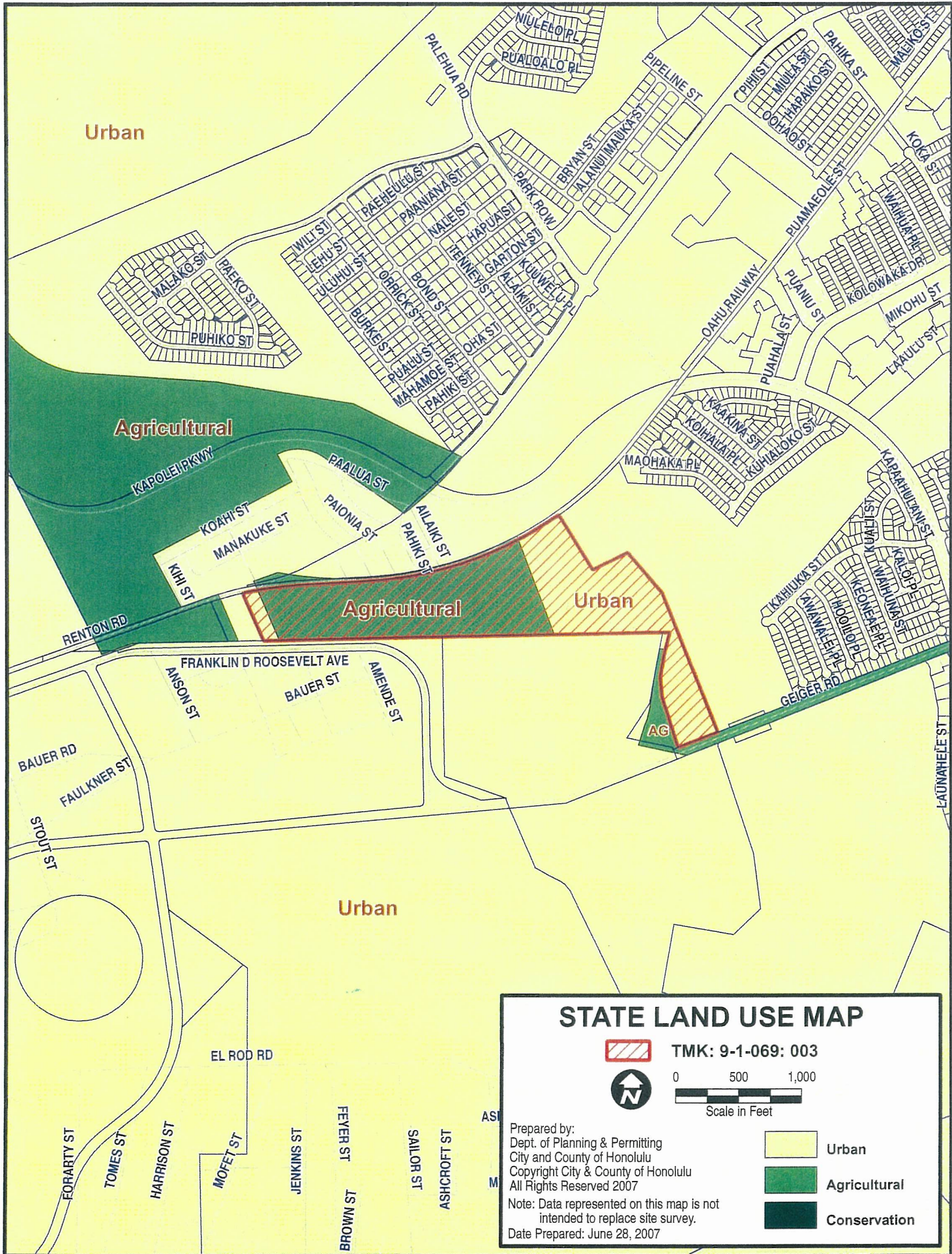
for Keith Kurahashi

encls.

cc: Office of State Planning
Department of Planning and Permitting
Ewa Industrial Park, LLC

EXHIBIT I

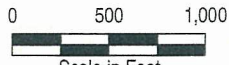
STATE LAND USE BOUNDARY MAP



STATE LAND USE MAP



TMK: 9-1-069: 003



Scale in Feet

Prepared by:
 Dept. of Planning & Permitting
 City and County of Honolulu
 Copyright City & County of Honolulu
 All Rights Reserved 2007

Note: Data represented on this map is not
 intended to replace site survey.
 Date Prepared: June 28, 2007

- Urban
- Agricultural
- Conservation

EXHIBIT II

**EWA BY GENTRY, DOCKET NO. A88-627
SLUC ANNUAL REPORT, JULY 2006**

EWA BY GENTRY
Docket No. A88-627

SLUC ANNUAL REPORT
July 2006

LAND USE COMMISSION
STATE OF HAWAII
2006 JUL 12 A 9:44

Submitted by

GENTRY INVESTMENT PROPERTIES

(Formerly known as Gentry Development Company)

TABLE OF CONTENTS

PROJECT STATUS	1
LAND USE CONDITIONS COMPLIANCE	2

LIST OF APPENDICES

APPENDIX 1:	2006 Preliminary Land Use Plan for Ewa by Gentry
APPENDIX 2:	Letter from City Department of Planning and Permitting Indicating Petitioner's Compliance with City's Affordable Housing Program

BACKGROUND/PROJECT STATUS

Ewa by Gentry is a 1,300-acre master planned residential community that will consist of approximately 9,100 homes at build-out. It consists of lands that were reclassified by the State Land Use Commission from the Agricultural District to the Urban District under three separate dockets: Docket No. 074-22 ("Hirano Brothers"); Docket No. A88-627 ("Ewa by Gentry"); and Docket No. A03-738 ("Ewa Makai"). Although the lands were reclassified under three separate dockets, the project areas are being master planned and developed as one community called "Ewa by Gentry." While this report focuses on the status of conditions set forth in Docket No. A88-627, the term "Ewa by Gentry" as used in this report generally refers to the entire master planned community of Ewa by Gentry (including the Hirano Brothers and Ewa Makai project areas).

As of December 31, 2005, 6,318 homes and finished houselots in Ewa by Gentry had been completed and recorded. Ewa by Gentry, which was initially planned to accommodate primarily "entry level" homebuyers, now offers a full range of housing types, including spacious luxury homes geared toward the move-up buyer.

During the year 2005, 144 homes were sold and closed in Ewa by Gentry in the following communities: *Single Family Detached*: Prescott II (87), and WoodBridge II (55); and *Multi-Family Condominium*: Sunrise (2)*. Prices of the homes sold ranged from \$175,000 in Sunrise to a base price of \$649,900 in WoodBridge II.

It is anticipated that in 2006, there will be no homes built or closed in the area reclassified under the subject docket (Docket No. A88-627). We will, however, continue to build and sell homes in the Ewa Makai portion of Ewa by Gentry (which will be covered under a separate annual report).

The projected build-out under our 2006 Land Use Plan (Appendix 1) extends through the year 2012. The schedule is, however, dependent upon market conditions. Ultimately, Ewa by Gentry will include a broad range of housing types, including homes for sale and for rent. It will also include a championship daily fee golf course that is available for community and public play, five parks (public and private), an expanded Ewa Mahiko District Park in the neighboring Ewa Villages, private recreation centers, Holomua Elementary School (which opened in August 1996), an 18-acre DOE middle school, a seven-acre neighborhood commercial center (which opened in the summer of 1999); 44 acres of light industrial and commercial uses, a child care center, and lots of open space.

*Sale of two rental units in Sunrise.

LAND USE CONDITIONS COMPLIANCE

The following summarizes the Petitioner's progress in complying with conditions imposed by the Land Use Commission under the subject docket (conditions are italicized, with descriptions immediately following):

Condition 1: Petitioner shall implement sound attenuation measures on all residential units on the Property that are subject to noise levels from 60 Ldn to 65 Ldn as determined by the State of Hawaii, Department of Transportation, Honolulu International Airport Draft 1987 Noise Contour Map introduced as OSP's Exhibit Number 2, herein referenced the HIA 1987 Ldn Map.

Petitioner shall not construct residential units on any portion of the Property subject to noise levels 65 Ldn or greater as indicated on the HIA 1987 Ldn Map.

Progress Report: Petitioner has not yet begun construction of residential units on the portion of the Property that is subject to noise levels of 60 Ldn, as is defined by the HIA 1987 Ldn Map. (A copy of the HIA 1987 Ldn Map was included as Appendix 2 in the 1996 Annual Report.)

Petitioner presently plans to construct residences in the affected area sometime after 2007. When residential units are constructed within that area, sound attenuation measures will be implemented on all such units.

No portion of the Property is subject to noise levels of 65 Ldn or greater under the HIA 1987 Ldn Map.

Condition 2: Petitioner shall grant to the State of Hawaii an avigation easement in the form prescribed by the State Department of Transportation on any portion of the Property subject to noise levels 60 Ldn or greater as determined by the HIA 1987 Ldn Map.

Progress Report: On April 3, 1996, a Grant of Avigation and Noise Easements instrument dated February 23, 1996, was recorded as Land Court Document No. 2299688. (A copy of the grant was included as part of the 1996 Annual Report as Appendix 3.)

*Sale of two rental units in Sunrise.

Condition 3: *Petitioner shall be responsible for implementing sound attenuation measures to reduce noise levels from vehicular traffic in the Property and along Ft. Weaver Road to acceptable levels. Petitioner shall coordinate its actions with the State Department of Health, DOT, and agencies of the City.*

Progress Report: Petitioner has implemented appropriate sound attenuation measures to reduce noise levels from vehicular traffic affecting property along Ft. Weaver Road within the area reclassified by the Commission under the subject docket, more specifically in the Sun Terra, SummerHill, Lofts, Alii Cove, Carriages, WoodBridge, Sonoma, and Prescott communities along Ft. Weaver Road. These measures include setback of residences from the road travel lanes, a 6' plaster fence, wall insulation, substantial landscaping, and more recently, air conditioning. Similar sound attenuation measures will also be incorporated for homes built in the remainder of Gentry's projects along Ft. Weaver Road as those projects are constructed.

Condition 4: *Petitioner shall contribute to affordable housing opportunities for low, low-moderate, and moderate-income residents in the State of Hawaii to the satisfaction of the City and County of Honolulu. The location and distribution of the affordable housing or other provisions for affordable housing shall be under such terms as may be mutually agreeable between petitioner and the City and County of Honolulu. (Note: On July 13, 1998, the State Land Use Commission approved the deletion of the former Condition No. 4 and the replacement with this new Condition No. 4.)*

Progress Report: In 1992, the Petitioner began developing lands within the area reclassified under the subject docket, after acquisition of the area from the Campbell Estate under our Development Agreement.

The following projects have been built or are being built on the reclassified area (as of 12/31/05):

*Sale of two rental units in Sunrise.

Area	Type	Project or Increment	Status	Total Units
12	SF	Sun Terra	Completed	451
13	SF Condo	Hu'elani	Completed	101
18	SF	Summer Hill/ Trovare (Carr Dev.)	Completed	305
24	MF	Suncrest	Completed	64
19A	SF	Sonoma	Completed	130
19B	SF	Prescott I	Completed	153
20 (por)	SF	Prescott II/WoodBridge II	Completed	203
21 (por)	SF Condo	CorteBella	Completed	130
21 (por)	SF Condo	Terrazza	Completed	167
21 (por)	SF Condo	Las Brisas	Completed	181
21 (por)	SF Condo	Tiburon	Completed	134
23/24 (por)	SF Condo	Lombard Way	Completed	143
23/24 (por)	SF Condo	Avalon	Completed	46
24 (por)	MF	The Shores at Suncrest	Completed	36
26 (por)	SF Condo	The Lofts	Completed	45
26 (por)	SF Condo	Alii Cove	Completed	157
26 (por)	SF Condo	Alii Court	Completed	114
27A	SF	Fiesta Seabreeze	Completed	86
27A & B	SF	Meridian	Completed	57
27B	SF	The Breakers	Completed	79
28A&D	SF	The Carriages	Completed	70
28B&C	SF	WoodBridge I	Completed	89
			Total	2941

Numbers are tentative and are subject to change.

The affordable units within the project area were developed and sold in compliance with the terms and conditions of a comprehensive affordable housing agreement executed between the Petitioner and the City and County of Honolulu. The current agreement, dated June 18, 1997, sets forth terms and conditions for carrying out the Petitioner's affordable housing program in the Ewa by Gentry project and supersedes a previous agreement dated January 31, 1994. A copy of the Affordable Housing Agreement dated June 18, 1997, was sent as a supplement to the 1997 Annual Report.

During the time period of August 5, 1999, to August 5, 2005, the Petitioner developed and sold homes in compliance with City Ordinances 99-51 and 01-33, which temporarily amended certain affordable housing conditions in existing unilateral agreements. These Ordinances were included as Appendix 2 to the 2001 Annual Report and Appendix 2 to the 2002 Annual Report, respectively. A letter from DPP confirming our compliance with the City's affordable housing program is included with this report as Appendix 2.

Condition 5: *Petitioner shall coordinate, with the Board of Water Supply, the Department of Land and Natural Resources, the Ewa Plain Water Development*

*Sale of two rental units in Sunrise.

Corporation, adjoining landowners and developers, and/or other federal, state or county agencies, measures designed to develop water for the Property. Petitioner through its affiliates and together with the other members of the Ewa Plain Water Development Corporation shall develop, at the expense of the Ewa Plain Water Development Corporation, the necessary water source, storage and transmission facilities to provide an adequate supply of potable water to the Property prior to the development of the Property.

Progress Report: Necessary on-site water facilities have been provided in consultation with the Board of Water Supply (BWS) and are being built in accordance with an approved Water Master Plan. Gentry is a member of the Ewa Plain Water Development Corporation (EPWDC), a non-profit corporation responsible for planning, financing, and implementing the construction of regional source development, storage reservoirs, and distribution systems. Major portions of EPWDC's water program (including dedicated source and well facilities, storage and transmission for a water system of 6.72 million gallons per day) have already been implemented and were dedicated to BWS in 1991.

Condition 6: *Petitioner shall participate in the funding and construction of transportation improvements at access points to the Property as identified by the State Department of Transportation.*

Petitioner shall also participate with all adjoining landowners and developers on a fair share basis in the funding and construction of other on-site and off-site transportation improvements necessitated by development of the Property and in designs and schedules accepted by and coordinated with the State Department of Transportation, provided that the extent of Petitioner's participation shall not exceed Petitioner's share of the increased community traffic impacts in the Ewa and Central Oahu region, and provided further that, in the event that the City adopts an impact fee for transportation improvements, the foregoing requirements shall not include or double-count the cost of any specific traffic improvements which may also be included in the City's impact fee computation.

Such improvements may include, but not be limited to, Geiger Road, Iroquois Point Road and Ft. Weaver Road, improvements to the Kunia Interchange, construction of the proposed north-south road and its accesses to the H-1 freeway and Farrington Highway, and construction of the proposed east-west road to Kapolei Town Center.

Condition 7: *Petitioner shall monitor the traffic attributable to the development proposed on the Property at on-site and off-site locations and shall undertake subsequent mitigative measures that may be reasonably required. These activities shall be coordinated with and approved by DOT.*

Condition 8: *Petitioner shall coordinate its transportation improvements with other landowners and developers in the Ewa region to ensure that all reasonably necessary improvements are operational in consonance with urban development.*

*Sale of two rental units in Sunrise.

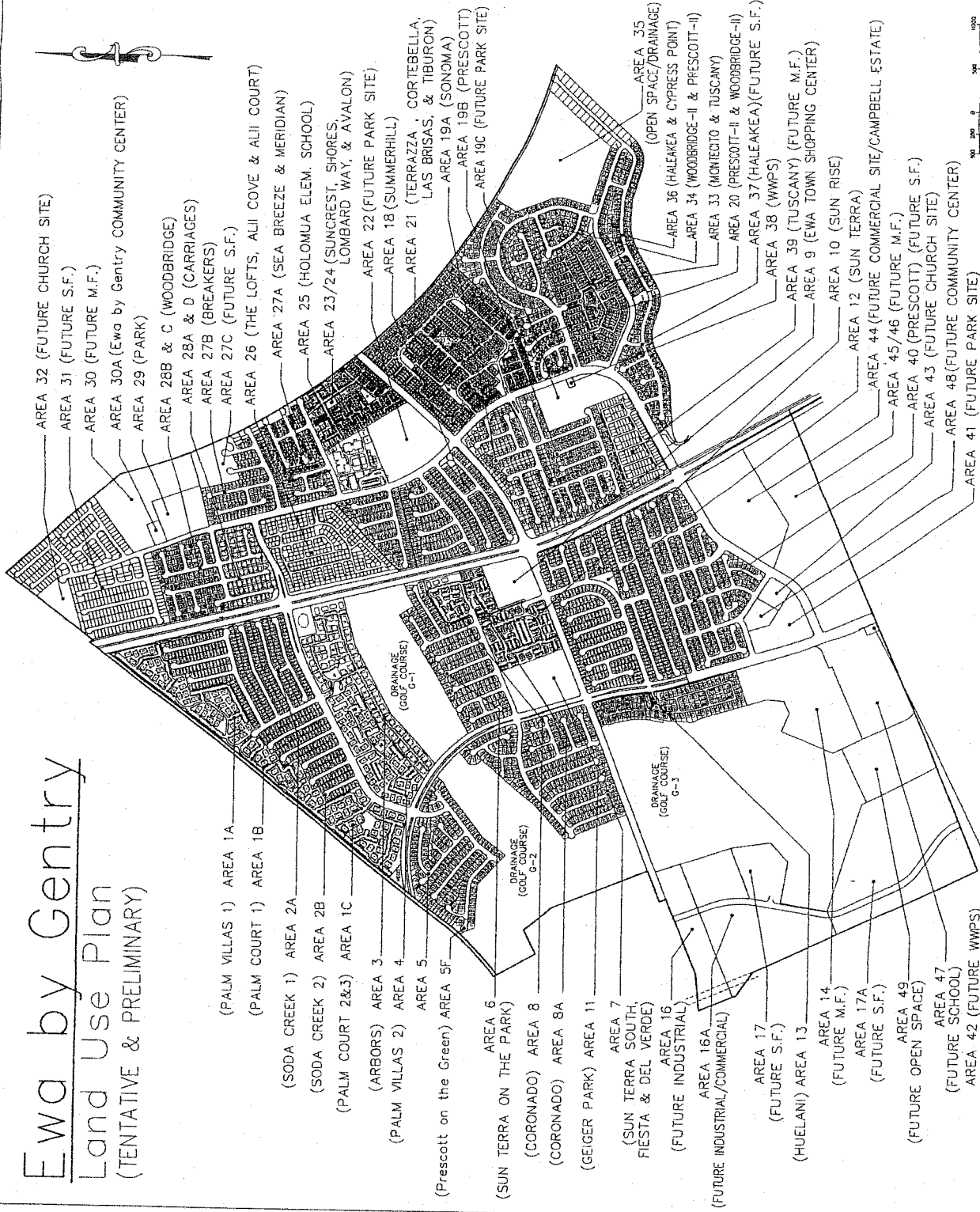
APPENDIX 1

**2006 Preliminary Land Use Plan
for Ewa by Gentry**

Ewa by Gentry

Land Use Plan

(TENTATIVE & PRELIMINARY)



AREA 32 (FUTURE CHURCH SITE)
 AREA 31 (FUTURE S.F.)
 AREA 30 (FUTURE M.F.)
 AREA 30A (Ewa by Gentry COMMUNITY CENTER)
 AREA 29 (PARK)
 AREA 28B & C (WOODBIDGE)
 AREA 28A & D (CARRIAGES)
 AREA 27B (BREAKERS)
 AREA 27C (FUTURE S.F.)
 AREA 26 (THE LOFTS, ALII COVE & ALII COURT)
 AREA 27A (SEA BREEZE & MERIDIAN)
 AREA 25 (HOLOMUA ELEM. SCHOOL)
 AREA 23/24 (SUNCREST, SHORES, LOMBARD WAY, & AVALON)
 AREA 22 (FUTURE PARK SITE)
 AREA 18 (SUMMERHILL)
 AREA 21 (TERRAZZA, CORTEBELLA, LAS BRISAS, & TIBURON)
 AREA 19A (SONOMA)
 AREA 19B (PRESCOTT)
 AREA 19C (FUTURE PARK SITE)

(PALM VILLAS 1) AREA 1A
 (PALM COURT 1) AREA 1B
 (SODA CREEK 1) AREA 2A
 (SODA CREEK 2) AREA 2B
 (PALM COURT 2&3) AREA 1C
 (ARBORS) AREA 3
 (PALM VILLAS 2) AREA 4
 AREA 5
 (Prescott on the Green) AREA 5F

AREA 6
 (SUN TERRA ON THE PARK)
 (CORONADO) AREA 8
 (CORONADO) AREA 8A
 (GEIGER PARK) AREA 11
 AREA 7
 (SUN TERRA SOUTH, FIESTA & DEL VERDE)
 AREA 16
 (FUTURE INDUSTRIAL)
 AREA 16A
 (FUTURE INDUSTRIAL/COMMERCIAL)
 AREA 17
 (FUTURE S.F.)
 (HUELANI) AREA 13
 (FUTURE M.F.)
 AREA 17A
 (FUTURE S.F.)
 AREA 49
 (FUTURE OPEN SPACE)
 AREA 47
 (FUTURE SCHOOL)
 AREA 42 (FUTURE WMPS)

AREA 35
 (OPEN SPACE/ DRAINAGE)
 AREA 36 (HALEAKA & CYPRESS POINT)
 AREA 34 (WOODBIDGE-II & PRESCOTT-II)
 AREA 33 (MONTECITO & TUSCANY)
 AREA 20 (PRESCOTT-II & WOODBIDGE-II)
 AREA 37 (HALEAKA)(FUTURE S.F.)
 AREA 38 (WMPS)
 AREA 39 (TUSCANY) (FUTURE M.F.)
 AREA 9 (EWA TOWN SHOPPING CENTER)
 AREA 10 (SUN RISE)
 AREA 12 (SUN TERRA)
 AREA 44 (FUTURE COMMERCIAL SITE/CAMPBELL ESTATE)
 AREA 45/46 (FUTURE M.F.)
 AREA 40 (PRESCOTT) (FUTURE S.F.)
 AREA 43 (FUTURE CHURCH SITE)
 AREA 48 (FUTURE COMMUNITY CENTER)
 AREA 41 (FUTURE PARK SITE)

Progress Report (Conditions 6, 7 and 8): Petitioner has participated in the funding and construction of transportation improvements at access points to the Ewa by Gentry community. Construction of Kapolei Parkway with its 116-foot right-of-way through the Ewa by Gentry community has been completed beginning at the makai boundary of the Sun Terra community and proceeding north to the railroad right-of-way. The remainder of Kapolei Parkway from the makai boundary of Sun Terra to the northern boundary of the Ocean Pointe community is currently under construction and should be open for use by the public by mid August of 2006.

The Petitioner has constructed and will continue to construct other off-site and on-site transportation improvements necessitated by the phased development of the project, subject to acceptance by and coordination with the State Department of Transportation and City Department of Transportation Services. Petitioner is currently processing improvement plans for the balance of Geiger Road, as well as the balance of Iroquois Point Road in coordination with the U.S. Navy, State, and City.

The Petitioner has also participated with all regional developers and major landowners in the Ewa Highway Master Plan Group (EHMPG) in studying transportation requirements, cost estimates, and timing for transportation improvements throughout the Ewa region. The Ewa Highway Master Plan, jointly commissioned by the State Department of Transportation and the EHMPG and prepared by Kaku & Associates, was the result of this process. The Plan identifies six major highway projects that should be undertaken in the Ewa Region.

In order to address the developers' fair share contribution toward the cost of the transportation improvements listed in the Plan, DOT and the development community worked together to prepare the Ewa Highway Impact Fee Bill and submitted it to the Honolulu City Council in early 2002. The proposal, introduced as Bill 52 (2002) was passed by the City Council and enacted as Ordinance 02-52. It provides that all developments seeking a building permit for residential or non-residential construction will pay a set fee based on a schedule of fees contained in the ordinance. These impact fees will help to pay an estimated twenty percent of the total cost for the needed highway improvements identified in the Ewa Highway Master Plan and could be used as the local match for federal dollars. A copy of Ordinance 02-52 was included with the 2002 Annual Report as Appendix 3.

Since October 30, 2002, when Ordinance 02-52 went into effect, through May 31, 2006, Gentry has paid a total of \$1,964,671.98 in impact fees to help pay for Ewa highway improvements.

*Sale of two rental units in Sunrise.

Condition 9: *Petitioner shall appoint a transportation manager whose function is the formation, use and continuation of alternative transportation opportunities that would optimize the use of existing and proposed transportation systems. This transportation manager may provide similar services for Petitioner's other projects in Ewa and Central Oahu.*

In the alternative, Petitioner may participate in a regional program for transportation management with other developers and/or landowners. This program shall address the formulation, use and continuation of alternate transportation opportunities that would optimize the use of existing and proposed transportation systems.

Progress Report: Petitioner remains a member of the Leeward Oahu Transportation Management Association ("LOTMA"), which continues to address the formulation, use, and continuation of alternate transportation systems, such as sponsorship of commuter express buses and a ridesharing program. (LOTMA will be submitting to the SLUC an annual report of its accomplishments during 2005.)

Condition 10: *Petitioner shall provide drainage improvements in the Property and shall coordinate off-site improvements with Campbell Estate, Intervenor, adjoining landowners and developers and/or other federal, state or city agencies.*

Progress Report: Petitioner has continued to provide drainage improvements within the Property and has worked to coordinate off-site improvements with Campbell Estate, adjoining landowners and developers, and the United States Navy, in accordance with applicable federal, state, and city and county requirements. Our February 1991 Drainage Master Plan for Ewa by Gentry (West) continues to be implemented as approved by the City and County of Honolulu. This Master Plan is currently being updated and will be submitted to the City for review and approval. The drainage master plan for Ewa by Gentry – East, Phase II and Ewa East Makai was recently updated and approved by the City on September 23, 2004. Petitioner has also participated with area developers in the development of the Kalo Drainage Corridor and has constructed interim drainage detention improvements within the project area.

Condition 11: *Petitioner shall participate in an air quality monitoring program as specified by the State Department of Health.*

Progress Report: The Petitioner has complied with this condition through the use of a highly accurate continuous reading instrument that measures fugitive dust at the construction site. Dust concentration and weather data (including wind speed, wind direction, and rainfall) are measured continuously on this instrument, which is the only U.S. EPA designated equivalent method for the determination of particulate matter without using radioactive components

*Sale of two rental units in Sunrise.

(Designation #EQPM-1090-079). The Petitioner also implements measures outlined in a Best Management Practices Plan to ensure that fugitive construction dust is controlled and that air quality standards are in compliance with Department of Health regulations.

Condition 12: *Petitioner shall participate in a study in coordination with the City and the State Department of Health to assess the odors emanating from the Honouliuli Wastewater Treatment Plant (HWWTP) on the Property. Petitioner shall make the results of such a study available to the State and the City upon its completion.*

Progress Report: The City and County of Honolulu has initiated an Odor and Noise Master Plan effort, also known as the Reduction of Odor and Sound Emission (ROSE) program. The effort, through a professional services contract (the consultants are Brown & Caldwell, Kennedy Jenks, and Engineering Solutions), is organized in three phases. Phase I was a brainstorming/scope definition phase. This phase was completed in 2001. Phase II is a training/problem determination/prioritization phase. In this phase, the consultant team conducted a series of workshops to train the City staff in the determination and abatement of odors and noise. A primary effort of this phase was to initiate a monitoring program to determine and evaluate odorous source in the City's wastewater system. This phase was near completion at the end of 2002; however, it is anticipated that the City will expend more time to continue its monitoring efforts. Phase III of the ROSE project, which consists of planning and design of new odor control facilities, was started in June 2003. However this has been suspended.

A project which will reduce odors at the Honouliuli WWTP will be the replacement of the odorous sludge heat-treatment system with sludge anaerobic digesters. However, a project completion date is unknown at this time. An odor control system will be replaced with additional odor control units, which will be constructed with the project. Because the City is taking the lead in this effort, there does not appear to be a need for the Petitioner to conduct another separate study addressing the subject of odors emanating from the HWWTP.

Condition 13: *Petitioner shall connect the wastewater system for the development proposed on the Property to HWWTP. Construction of residential and industrial uses within the Property shall not commence until Petitioner has obtained assurances from the City that the capacity at the HWWTP has been reserved for the development on the Property. Petitioner shall coordinate with the City Department of Public Works and the State Department of Health for the provision of adequate buffer measures, including appropriate land uses, between the development on the Property and the existing HWWTP and any proposed expansion of the HWWTP to minimize noise, odor and other impacts associated with HWWTP.*

*Sale of two rental units in Sunrise.

Progress Report: Capacity at HWWTP has been reserved for developments proposed in Ewa by Gentry. Petitioner also intends to coordinate with the proper City agencies and the State Department of Health for the provision of adequate buffer measures including appropriate land uses, between the development on the Property and the existing HWWTP, and any proposed expansion of the HWWTP to minimize noise, odor and other associated impacts.

Condition 14: *Petitioner shall immediately stop work on the impacted area and contact the State Historic Preservation Office should any archaeological resources such as artifacts, shell, bones, or charcoal deposits, human burial, or rock or coral alignments, paving or walls of historic or prehistoric significance be encountered during the development on the Property.*

Progress Report: Petitioner has not encountered and is not likely to encounter any archaeological resources in the project area since it was under sugar cane cultivation prior to development. However, should any significant archaeological resource be encountered, the State Historic Preservation Office will be immediately contacted.

Condition 15: *Petitioner shall provide, at no cost to the State, a public school site encompassing six (6) acres, if adjacent to a public park, or eight (8) acres if not adjacent to a public park, as the Department of Education (DOE) may determine to be reasonably necessary to serve the needs of residents of the Property. The school site shall be provided, if there is a need for such site, in a location as may be mutually agreeable to Petitioner and the DOE. As an alternative, Petitioner may provide a share of the cost of classrooms or other educational facilities with the approval of DOE.*

Progress Report: Petitioner has dedicated an eight-acre public school site adjacent to a future public park. The school site is shown as Area 25 on the Preliminary Land Use Plan (Appendix 1). Holomua Elementary School has been operational since August 2, 1996.

Condition 16: *Petitioner shall disclose to all initial purchasers (a) possible aircraft noise and vibration and possible odor, air, noise and dust pollution resulting from the Ft. Weaver Road, Barbers Point Naval Air Station, Honolulu International Airport, Honouliuli Wastewater Treatment Plant, and adjoining agricultural operations, (b) the Hawaii Right-To-Farm Act, HRS Chapter 165, which limits the circumstances under which preexisting farm activities on adjacent lands may be deemed a nuisance, and (c) existence of the Explosives Safety Zone at West Loch Branch, Naval Magazine, Lualualei, (d) the transport of explosives and munitions on roadways through and in the vicinity of the Property.*

*Sale of two rental units in Sunrise.

Progress Report: Petitioner has disclosed to all initial purchasers those potentially hazardous conditions described in Condition 16. Included as appendices to previous annual reports were representative sample disclosures provided to initial purchasers of projects which have commenced during the reporting time period.

Condition 17: *Petitioner shall maintain the alignment of existing cane haul roads or provide alternate cane haul roads pursuant to Petitioner's agreements with Campbell Estate and OSCO to assure uninterrupted agricultural operation of sugarcane cultivation areas.*

Progress Report: OSCO has ceased sugar cultivation operations and is no longer using the cane haul roads that formerly crossed Ewa by Gentry's development area.

Condition 18: *Petitioner shall participate with City and State civil defense agencies, Intervenor, and adjoining landowners and developers in the formulation of an emergency preparedness and evacuation plan for residents of the Property due to the Property's proximity to the Explosive Safety Hazard Zone at the West Loch Branch, Navy Magazine, Lualualei.*

Progress Report: Based on recommendations of the State Civil Defense Agency and Oahu Civil Defense Agency, a siren was installed in Ewa by Gentry near the Coral Creek Golf Course, and has been operational since March 2003. The installed siren is a solar powered Federal Signal MC6024 with 3 each 121 DBc directional speaker arrays.

Condition 19: *Petitioner shall establish a forty-(40) foot setback along the existing railroad right-of-way in a manner compatible with City Ordinance No. 84-94.*

Progress Report: Petitioner has established a 40-foot setback along the existing railroad right-of-way compatible with City Ordinance No. 84-94 for all affected portions of the Property.

Condition 20: *Petitioner shall not place along Geiger or Iroquois Point Roads or at the intersection of any road with these two roadways any obstruction which would hinder aircraft towing along these two roadways in order to maintain an obstruction-free corridor 80 feet in width and 25 feet in height along these roadways.*

Progress Report: Petitioner is complying with the Navy's requirements for an obstruction-free corridor in its plans for improvement of Geiger Road and Iroquois Point Road.

*Sale of two rental units in Sunrise.

Because of Barbers Point Naval Air Station's closure, aircraft formerly towed along Geiger Road have been decommissioned at the Air Station and, as a result, the wide right-of-way will no longer be used by the Navy for the intended purposes. Regardless, improvements have been planned to accommodate the right-of-way.

Condition 21: *Petitioner shall coordinate with the Department of the Navy to assure that any work in the vicinity will not damage or in any way limit access to utility, communication or fuel lines.*

Progress Report: Petitioner is coordinating with the Navy on all proposed work in the vicinity of Navy utility, communication or fuel lines.

Condition 22: *Petitioner shall construct no road which enters from the Property onto Geiger or Iroquois Point Roads within 200 feet of any Navy installation's boundary.*

Condition 23: *Petitioner shall install a fence or other structure along the eastern boundary of the Property to minimize residents' inadvertent entrance into the Explosives Safety Zone, which commences at the Property's eastern boundary, with the western boundary of Naval Magazine Lualualei West Loch Branch.*

Progress Report (Conditions 22 and 23): In June 1997, the Petitioner constructed approximately 420 lineal feet of 6' high PVC-coated chainlink fencing along the eastern boundary of Area 24. Additional fencing has been built along portions of Areas 27A and 27C and will be installed as development occurs further along the eastern boundary of the Ewa by Gentry property. Petitioner will also comply with Navy requirements as to the construction of roads entering Geiger or Iroquois Point Roads within 200 feet of any Navy installations boundary.

Condition 24: *Petitioner shall complete the development on the Property in substantial compliance with the representations made before the Commission.*

Progress Report: Petitioner reaffirms the obligations of Condition 24.

*Sale of two rental units in Sunrise.

Condition 25: *Petitioner shall notify the Commission of any intent to sell, lease, assign, place in trust, or otherwise voluntarily alter the ownership interest in the Property prior to visible commencement of construction on the Property; provided, however, that Petitioner may transfer ownership in the Property to an affiliate or in a manner consistent with prior representations to the Commission, and may mortgage the Property at any time without notice to the Commission.*

Progress Report: The Petitioner has complied with this condition by notifying the Commission of the sale of lands in the Property to Stanford Carr Development Corporation and to Coral Creek Golf, Inc.

Condition 26: *Petitioner shall provide annual reports to the Land Use Commission, the Office of State Planning, and the City and County of Honolulu, Department of General Planning in connection with the status of the subject project and the Petitioners' progress in complying with the conditions imposed.*

Progress Report: Petitioner's annual report has been prepared to satisfy this condition.

Condition 27: *The Commission may fully or partially release these conditions as to all or any portion of the property upon timely motion and upon the provision of adequate assurance of satisfaction of these conditions by the Petitioner.*

Progress Report: A report is not required for this condition at this time.

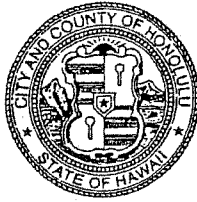
*Sale of two rental units in Sunrise.

APPENDIX 2

**Letter from City Department of Planning and Permitting
Indicating Petitioner's Compliance
with City's Affordable Housing Program**

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4432 • FAX: (808) 527-6743
DEPT. INTERNET: www.honolulu.gov • INTERNET: www.honolulu.gov



MUFI HANNEMANN
MAYOR

HENRY ENG, FAICP
DIRECTOR

DAVID K. TANQUE
DEPUTY DIRECTOR

2006/ELOG-1432
97/Z-1
93/Z-10
91/Z-9
89/Z-9

June 30, 2006

Ms. Debra M. A. Luning
Director of Governmental Relations
and Community Affairs
Gentry Homes, Limited
P.O. Box 295
Honolulu, Hawaii 96809

RECEIVED

JUL 5 2006

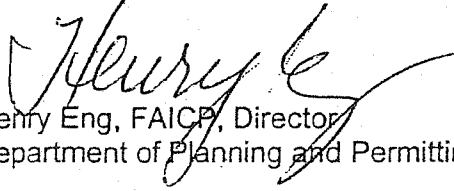
Dear Ms. Luning:

Re: Ewa by Gentry Affordable Housing Credits

Pursuant to your e-mail dated May 31, 2006, we certify, as of this date, that this project is in compliance in terms of the required affordable housing conditions of the unilateral agreements.

If you have questions, please call Dave Matsushima of our Development Plans and Zone Change Branch at 527-5872.

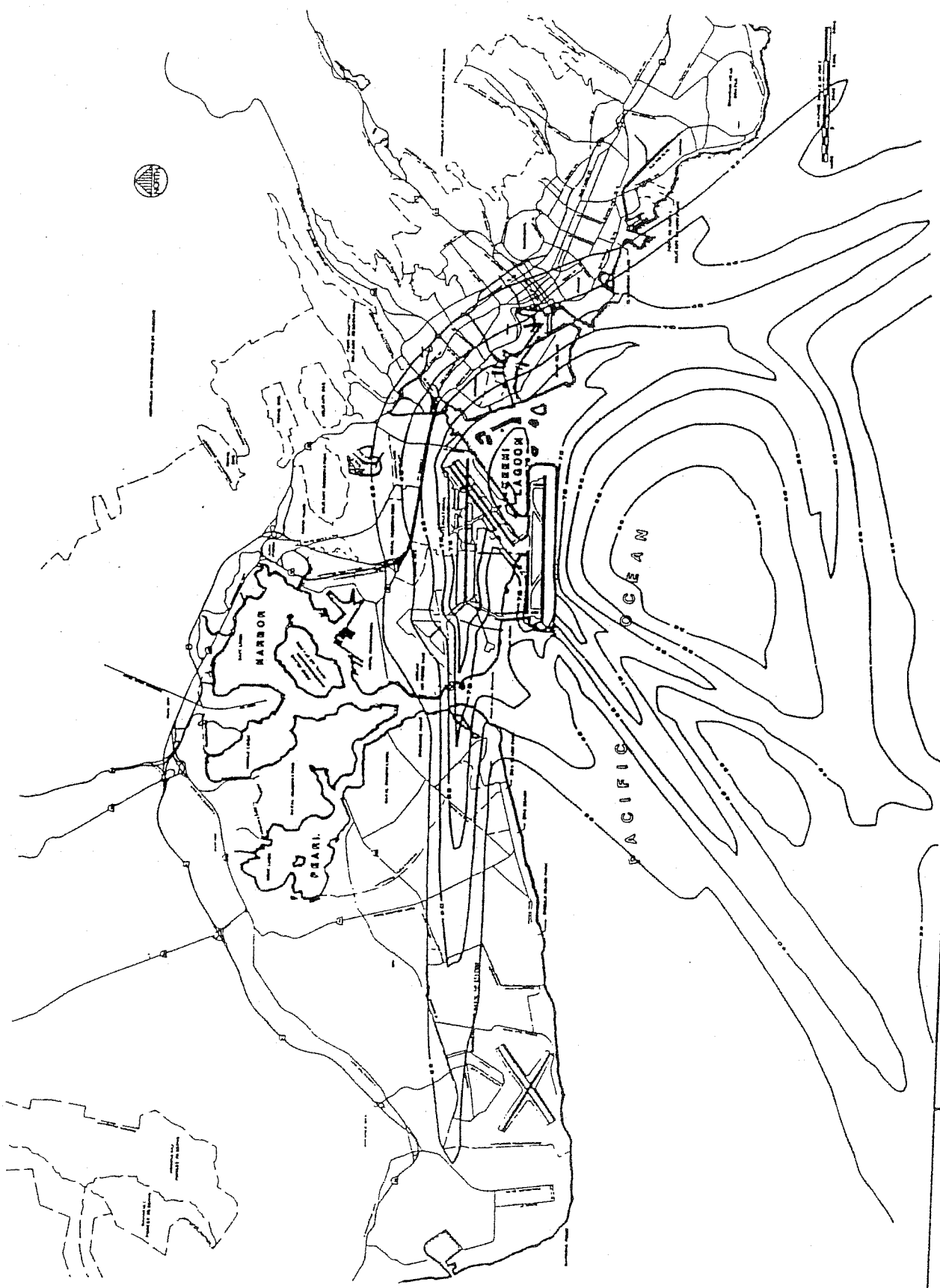
Very truly yours,


Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:mo
458923

EXHIBIT III

**HONOLULU INTERNATIONAL AIRPORT
1987 LDN MAP**



**HONOLULU INTERNATIONAL AIRPORT
 MASTER PLAN UPDATE AND
 NOISE COMPATIBILITY PROGRAM**

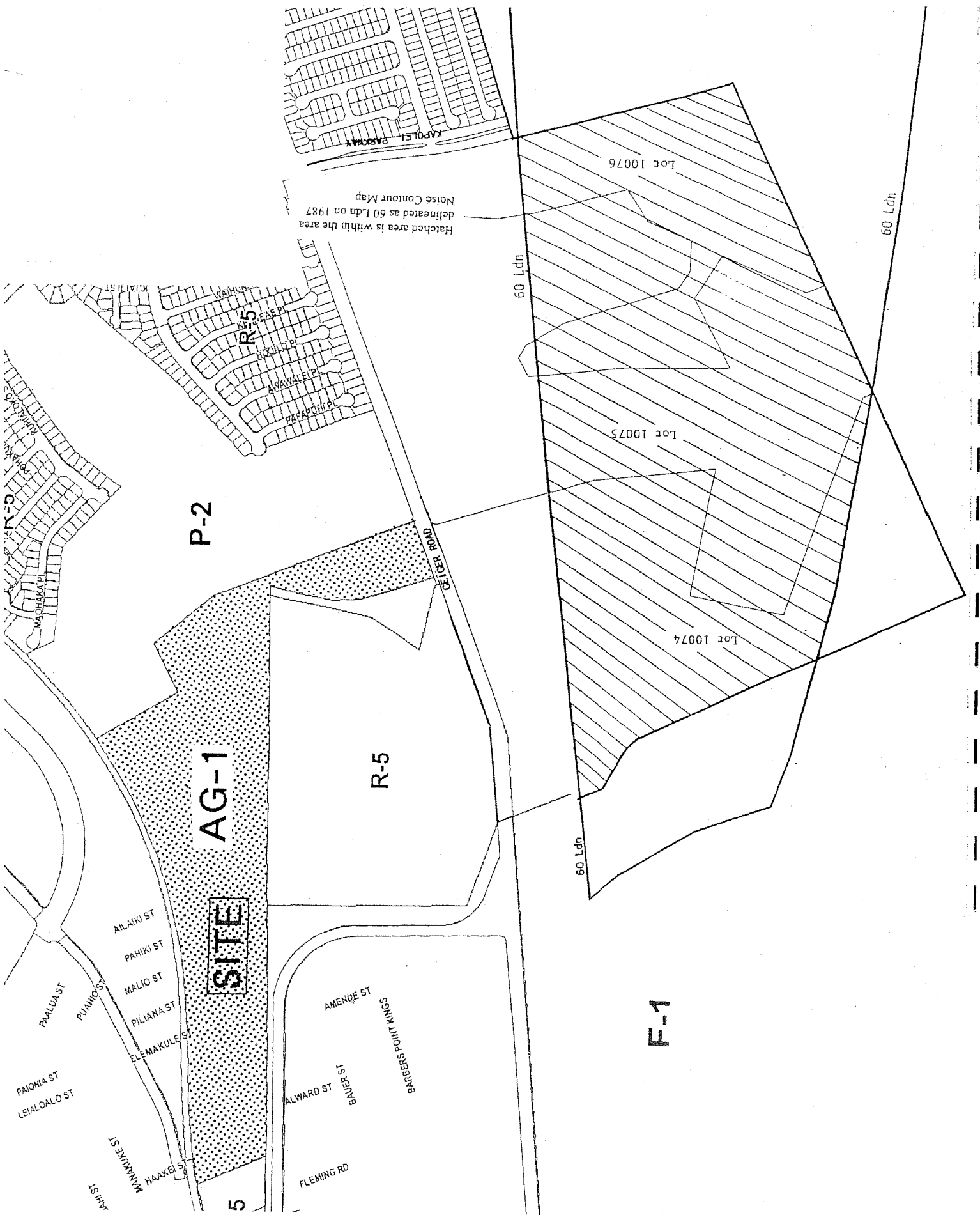
AIRPORTS DIVISION
 DEPARTMENT OF TRANSPORTATION
 STATE OF HAWAII



KFC AIRPORT, INC.
 MANAGEMENT CONSULTANTS

1987 LDN CONTOURS





Hatched area is within the area delineated as 60 Ldn on 1987 Noise Contour Map

P-2

AG-1

R-5

F-1

Lot 10076

Lot 10075

Lot 10074

60 Ldn

60 Ldn

60 Ldn

SITE

5

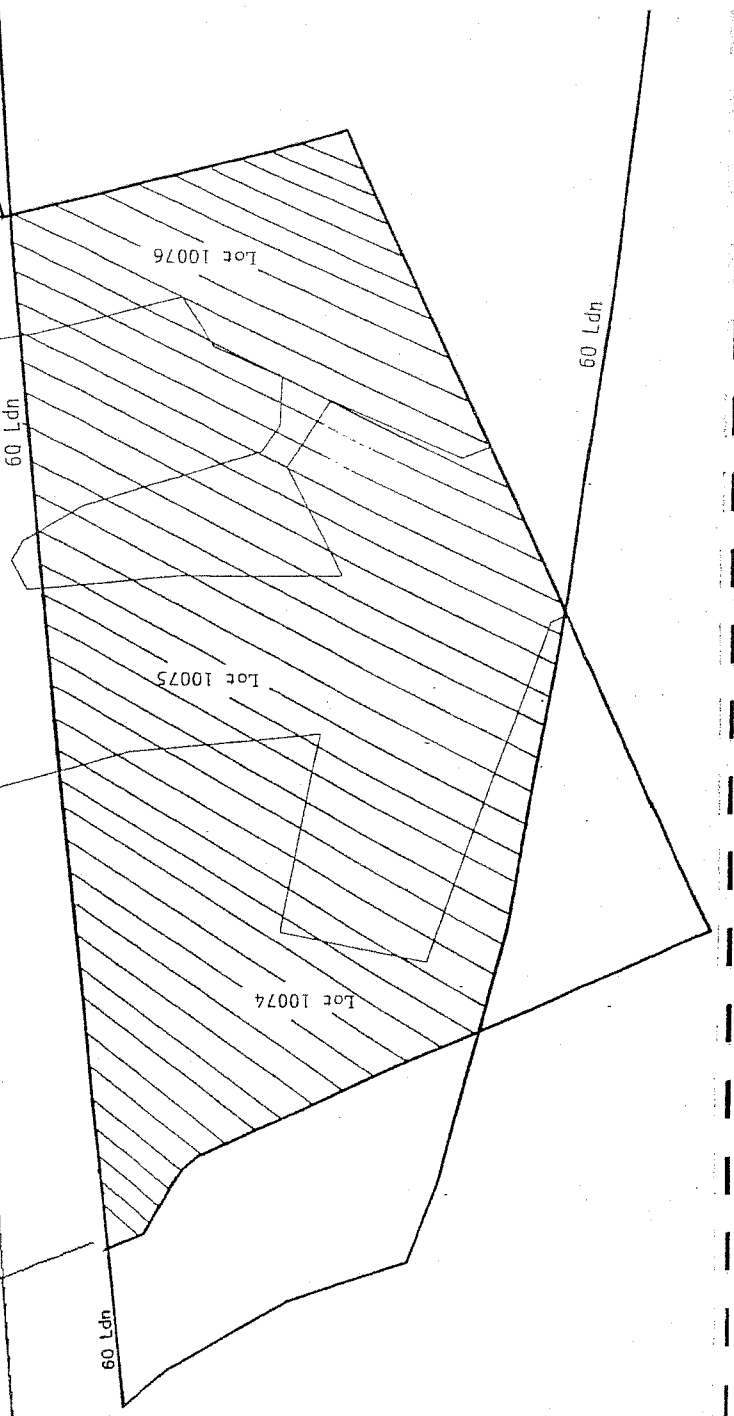
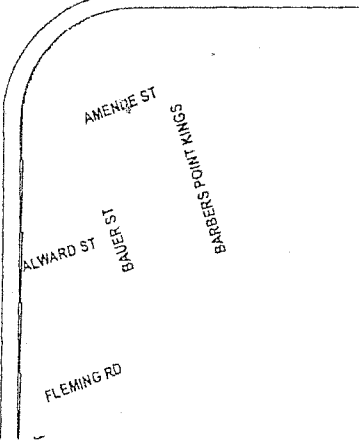
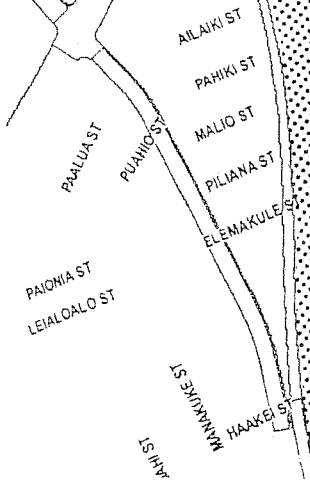
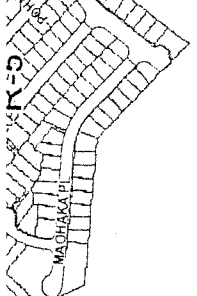
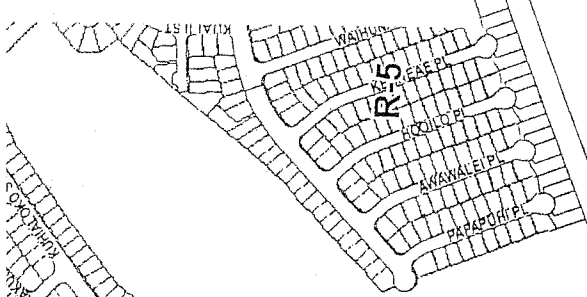
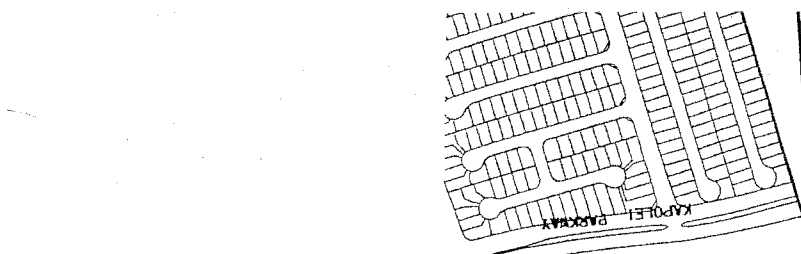


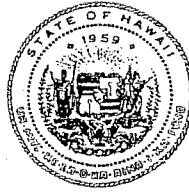
EXHIBIT IV

TRAFFIC IMPACT ASSESSMENT REPORT

(SEE APPENDIX II OF THE FINAL EA)

EXHIBIT V

**DEPARTMENT OF HEALTH LETTER ON
KAPOLEI BUSINESS-INDUSTRIAL PARK EAST**



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
File:

07-337M&A CAB

April 20, 2007

Mr. Keith Kurahashi
Kusao & Kurahashi, Inc.
Manoa Market Place
2752 Woodlawn Drive, Suite 5-202
Honolulu, Hawaii 96822

Dear Mr. Kurahashi:

SUBJECT: Air Quality Monitoring Program for the Proposed Industrial Development at Kapolei Business-Industrial Park East

This letter is in response to your letter dated April 6, 2007 requesting for the Department of Health's input on the air quality monitoring for the subject project. Hawaii is in attainment with the National Ambient Air Quality Standards for the criteria air pollutants and since a monitoring station is located at Kapolei, no further action is required of you.

For the construction project, it is recommended that a dust control management plan be developed which identifies and addresses all activities that have a potential to generate fugitive dust and that adequate dust control measures during all phases of development and construction activities be implemented. All construction activities must comply with the provisions of Hawaii Administrative Rules, §11-60.1-33 on Fugitive Dust.

The contractor should provide adequate measures to control dust from the road areas and during the various phases of construction. These measures include, but are not limited to, the following:

- a) Plan the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic route, and locating potential dust-generating equipment in areas of the least impact;
- b) Provide an adequate water source at the site prior to start-up of construction activities;
- c) Landscape and provide rapid covering of bare areas, including slopes, starting from the initial grading phase;
- d) Minimize dust from shoulders and access roads;
- e) Provide adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- f) Control dust from debris being hauled away from the project site.

If you have any questions, please contact Ms. Lisa Young of my staff at 586-4200.

Sincerely,

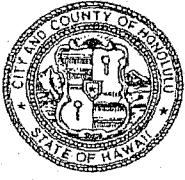
Handwritten signature of Wilfred K. Nagamine in black ink.

WILFRED K. NAGAMINE
Manager, Clean Air Branch

LY:rkb

APPENDIX IV

AGENCY COMMENT LETTERS



DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET * HONOLULU, HAWAII 96813
 Phone: (808) 527-5827 * Fax: (808) 523-4210

JUL 18 2007

SEWER CONNECTION APPLICATION

APPLICATION NO.: 2007/SCA-0457 STATUS: Approved with conditions
 DATE RECEIVED: 07/10/2007 IWDP APP. NO.:
 PROJECT NAME: Ewa International Industrial Park, Phase 1 / General Industry,
 Misc.

\$461,461.00
Estimated Wastewater System Facility Charge*

LOCATION:

Zone	Section	Plat	Parcel
9	1	069	003

91-1343 FORT WEAVER RD 2,108,086 Sq. Ft.

SPECIFIC LOCATION: 91-1020 Geiger Rd

APPLICANT: Gray, Hong, Nojima & Associates, Inc., Daniel S.C. Hong
 841 Bishop St Suite 1100
 Honolulu, HI 96813
 Ewa Industrial Parl, LLC, Kevin Lefforge
 99-880 Iwaena St
 Aiea, Hawaii 96701

DEVELOPMENT TYPE: General Industry (Misc.) SEWER CONNECTION WORK DESIRED: New
 OTHER USES: 11- Industrial Building
 NON-RESIDENTIAL AREA: 489,148.00 s.f. APPROXIMATE DATE OF CONNECTION: 10/01/2008

<u>PROPOSED UNITS</u>	<u>EXISTING UNITS</u>	<u>UNITS TO BE DEMOLISHED</u>
No. of New Units: *	No. of Existing Units:	No. of Units to be Demolished:
Studios:	Studios:	Studios:
1-Bedroom:	1-Bedroom:	1-Bedroom:
2-Bedroom:	2-Bedroom:	2-Bedroom:
3-Bedroom:	3-Bedroom:	3-Bedroom:
4-Bedroom:	4-Bedroom:	4-Bedroom:
5-Bedroom:	5-Bedroom:	5-Bedroom:
6-Bedroom:	6-Bedroom:	6-Bedroom:

REMARKS Approval is conditioned that this project shall be allowed a sewage discharge equivalent 5.8 ESDU each for the 10 buildings with 1.5-inch w.m. size and 33.0 ESDU each for the one building with a 3-inch water meter size. The total sewage discharge allowed for this project is equivalent to 91 ESDUs. Submit construction plans for review and approval.

APPROVAL DATE: 07/16/2007

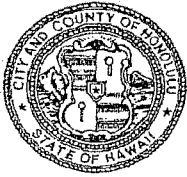
Valid 2-years after approval date. Construction plans shall be completed and approved within this 2-year period. Construction shall commence within 1-year after approval of plans.

EXPIRATION DATE: 07/15/2009

* Applicable WSFC shall be collected at the prevailing rate in accordance with ROH 1990, Chapter 14, Sections 14-10.3, 14-10.4, 14-10.5 and Appendix 14-D.

REVIEWED BY: Arturo Saavedra Jr.

Arturo Saavedra Jr.
 Site Development Division, Wastewater Branch



DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

JUL 18 2007

650 SOUTH KING STREET * HONOLULU, HAWAII 96813
 Phone: (808) 527-5827 * Fax: (808) 523-4210

SEWER CONNECTION APPLICATION

APPLICATION NO.: **2007/SCA-0458** STATUS: **Approved with conditions**
 DATE RECEIVED: **07/10/2007** IWDP APP. NO.:
 PROJECT NAME: **Ewa International Industrial Park, Phase 2 / General Industry, Misc.**

\$588,236.00
Estimated Wastewater System Facility Charge*

LOCATION:

Zone	Section	Plat	Parcel		
9	1	069	003	91-1343 FORT WEAVER RD	2,108,086 Sq. Ft.

SPECIFIC LOCATION: **91-1020 Geiger Rd**

APPLICANT: **Ewa Industrial Parl, LLC, Kevin Lefforge**
 99-880 Iwaena St
 Aiea, Hawaii 96701

Gray, Hong, Nojima & Associates, Inc., Daniel S.C. Hong
 841 Bishop St Suite 1100
 Honolulu, HI 96813

DEVELOPMENT TYPE: **General Industry (Misc.)** SEWER CONNECTION WORK DESIRED: **New**
 OTHER USES: **20-Industrial Buildings**
 NON-RESIDENTIAL AREA: **523,600.00 s.f.** APPROXIMATE DATE OF CONNECTION: **01/01/2010**

PROPOSED UNITS

EXISTING UNITS

UNITS TO BE DEMOLISHED

No. of New Units:	No. of Existing Units:	No. of Units to be Demolished:
Studios:	Studios:	Studios:
1-Bedroom:	1-Bedroom:	1-Bedroom:
2-Bedroom:	2-Bedroom:	2-Bedroom:
3-Bedroom:	3-Bedroom:	3-Bedroom:
4-Bedroom:	4-Bedroom:	4-Bedroom:
5-Bedroom:	5-Bedroom:	5-Bedroom:
6-Bedroom:	6-Bedroom:	6-Bedroom:

REMARKS Approval is conditioned that this project shall be allowed a sewage discharge equivalent to 5.8 ESDUs each for the 20 buildings with 1.5-inch water meter size for a total of 116.0 ESDUs. Submit construction plans for review and approval.

APPROVAL DATE: **07/16/2007**

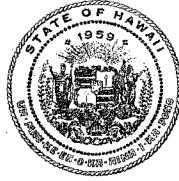
Valid 2-years after approval date. Construction plans shall be completed and approved within this 2-year period. Construction shall commence within 1-year after approval of plans.

EXPIRATION DATE: **07/15/2009**

** Applicable WSFC shall be collected at the prevailing rate in accordance with ROH 1990, Chapter 14, Sections 14-10.3, 14-10.4, 14-10.5 and Appendix 14-D.*

REVIEWED BY: **Arturo Saavedra Jr.**

Arturo Saavedra Jr.
 Site Development Division, Wastewater Branch



STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. Box 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EPO-07-177

September 25, 2007

Mr. Keith Kurahashi
Kusao & Kurahashi, Inc.
Manoa Market Place
2752 Woodlawn Drive, Suite 5-202
Honolulu, Hawaii 96822

Mr. Kurahashi:

SUBJECT: Draft Environmental Assessment for the Proposed Ewa Industrial Park
Ewa, Kapolei, Oahu, Hawaii
TMK: (1) 9-1-069: 003

Thank you for allowing us to review and comment on the subject application. The document was routed to the various branches of the Department of Health (DOH) Environmental Health Administration. We have the following Clean Water Branch, Hazard Evaluation & Emergency Response Office (HEER), and General comments.

Clean Water Branch

The Department of Health, Clean Water Branch (CWB), has reviewed the subject document and offers these comments on your project. Please note that our review is based solely on the information provided in the subject document and its compliance with Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at <http://www.hawaii.gov/health/environmental/env-planning/landuse/CWB-standardcomment.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).

Mr. Kurahashi
September 25, 2007
Page 2

2. You are required to obtain National Pollutant Discharge Elimination System (NPDES) general permit coverage for discharges of storm water associated with construction activity, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. NPDES permit coverage is required before the start of the construction activities. You must submit a Notice of Intent (NOI) form at least 30 calendar days prior to the start of construction activities. The NOI forms may be picked up at our office or downloaded from our website at:
<http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html>.
3. You must also submit a copy of the NOI to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the CWB that SHPD has or is in the process of evaluating your project. Please submit a copy of your request for review by SHPD or SHPD's determination letter for the project along with your NOI or NPDES permit application, as applicable.
4. You will need to update your Storm Water Pollution Control Plan for the facility to include the expansion and altered drainage system and submit to our office.
5. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.

If you have any questions, please visit our website at
<http://www.hawaii.gov/health/environmental/water/cleanwater/index.html>, or contact the Engineering Section, CWB, at 586-4309

Hazard Evaluation & Emergency Response Office

Residual pesticides in the former agricultural lands could pose potential risks to human health and the environment under urban land uses. The HEER office is identifying former agricultural areas throughout the state and working with property owners to conduct environmental assessments of these areas prior to development for residential and commercial purposes.

As part of the pre-development process, the nature of residual pesticides impacts in the former agricultural lands should be determined. This is done in a step-by step process that includes: 1) evaluation of crop history and identification of target pesticides of potential concern, 2) collection of representative soil samples, 3) testing of the soil samples for the target pesticides and

4) identification of potential environmental concerns. The latter step can be carried out by direct comparison of soil data to HEER office Environmental Action Levels. Areas of special concern must be identified and investigated separately from fields (former pesticide mixing and storage sites, seed dipping areas, waste ponds, etc.). The study should be documented in a site investigation report. This report should include a brief and Environmental Hazard Assessment that discusses potential environmental concerns and makes recommendations for additional actions, as needed. If significant environmental concerns are identified then a more formal response under Chapter 128D, Environmental Response Law, HRS, and Title 11, Chapter 451, HAR, State Contingency Plan will be required.

The HEER office has been working with municipalities, developers and consultants over the past several years to make the process discussed above as efficient and cost-effective as possible. Detailed guidance is currently under preparation. Interim guidance is presented in the HEER office documents referenced below. The HEER office recommends that the developer initiate an environmental investigation of the former agricultural lands as early in the process as possible. Preparation of investigation work plans should be coordinated with the HEER office to ensure that the study is carried out in the most efficient and effective manner possible.

References:

HDOH, 2005, *Screening For Environmental Concerns at Sites With Contaminated Soils and Groundwater* (May 2005): Hawaii Department of Health, Office of Hazard Evaluation & Emergency Response, <http://www.hawaii.gov/health/environmental/hazard/eal2005.html>

HDOH, 2006, *Soil Action Levels and Categories for Bioaccessible Arsenic* (August 2006): Hawaii Department of Health, Office of Hazard Evaluation & Emergency Response, <http://www.hawaii.gov/health/environmental/hazard/eal2005.html>

HDOH, 2006, *Proposed Dioxin Action Levels for East Kapolei Brownfield Site* (March 2006): Hawaii Department of Health, Office of Hazard Evaluation & Emergency Response, <http://www.hawaii.gov/health/environmental/hazard/eal2005.html>

HDOH, 2007, *Use of Laboratory Batch Tests to Evaluate Potential Leaching of Contaminants from Soil* (April 2007): Hawaii Department of Health, Office of Hazard Evaluation & Emergency Response, <http://www.hawaii.gov/health/environmental/hazard/eal2005.html>

HDOH, 2007, *Pesticides in the Former Agricultural Lands and Related Areas – Updates on Investigation and Assessment* (August 2007): Hawaii Department of Health, Office of Hazard Evaluation & Emergency Response, <http://www.hawaii.gov/health/environmental/hazard/eal2005.html>

Mr. Kurahashi
September 25, 2007
Page 4

General

We strongly recommend that you review all of the Standard Comments on our website:
www.state.hi.us/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this project should be adhered to.

If there are any questions about these comments please contact Jiakai Liu with the Environmental Planning Office at 586-4346.

Sincerely,



KELVIN H. SUNADA, MANAGER
Environmental Planning Office

c: EPO
CWB
HEER

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.m.com

December 27, 2007

Mr. Kelvin H. Sunada, Manager
Environmental Planning Office
Department of Health
State of Hawaii
P.O. Box 3378
Honolulu, Hawaii 96813

Attention: Mr. Jiakai Liu, Environmental Planning Office

Subject: Draft Environmental Assessment (EA) for the Proposed Ewa Industrial Park - Tax Map Key: 2-6-024: 70 and 71

Dear Mr. Sunada:

Thank you for your comments on the subject Draft Environmental Assessment (DEA) dated September 25, 2007 and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park.

The following responds to your comments:

1. The project will ultimately discharge onsite storm water to the existing retention basin located in the adjacent golf course. Additionally, the project will apply best management practices for control of runoff during construction.

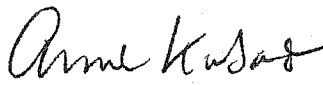
The requirements of HAR, Section 11-54-1.1, Anti-degradation Policy, Section 11-54-3, Designated Uses, and Sections 11-54-4 through 11-54-8, Water Quality Criteria will be met.

2. The required NPDES/NOI permit application will be submitted prior to the commencement of construction.
3. A copy of the NPDES/NOI permit application will be submitted to the State Department of Land and Natural Resources SHPD office for their review prior to the commencement of construction.

4. An Erosion Control Plan will be prepared in conjunction with the NPDES/NOI permit application.
5. The applicant will update a Storm Water Pollution Control Plan to include the planned expansion and altered drainage system for submittal to your office.
6. The applicant is aware that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards.
7. The applicant is aware of the HEER office requirements. Testing and evaluation of the project site to comply with the requirements of the HEER office will be conducted.
8. In response to applicable Standard Comments of the Department of Health:
 - a. Should demolition activities involve asbestos, the applicant will contact the Asbestos Abatement Office in the Noise, Radiation and Indoor Air Quality Branch at 586-5800.
 - b. The applicant will provide adequate measures for control of fugitive dust during various phases of construction.
 - c. The applicant will develop a solid waste management plan that encourages recycling and use of recycled materials.

Again, we thank you for your review of our Draft EA. Your comments and our response will be included in the Final EA.

Very truly yours,

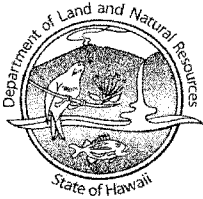

for Keith Kurahashi

cc: Ewa Industrial Park, LLC

LINDA LINGLE
GOVERNOR OF HAWAII



LAURA H. THIELEN
INTERIM 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

August 24, 2007

Kusao & Kurahashi, Inc.
Manoa Market Place
2752 Woodlawn Drive Suite 5-202
Honolulu, Hawaii 96822

Attention: Mr. Keith Kurahashi

Gentlemen:

Subject: Draft Environmental Assessment for the Proposed Ewa Industrial park,
Ewa, Oahu, Tax Map Key: (1) 9-1-69:3

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources has no comment to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

A handwritten signature in black ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Administrator

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.rr.com

October 31, 2007

Mr. Russell Y. Tsuji, Administrator
State of Hawaii
Department of Land and Natural Resources
Land Division
Post Office Box 621
Honolulu, Hawaii 96809

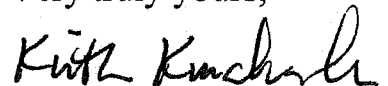
Subject: Draft Environmental Assessment (EA) for the Proposed Ewa
Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Mr. Tsuji:

Thank you for your letter dated August 24, 2007, and for taking the time to review our Draft EA for the proposed Ewa Industrial Park. We have made note that the Department of Land and Natural Resources have no comment to offer on the proposed industrial development.

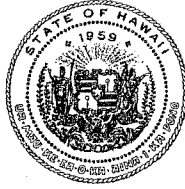
Your letter and our response will be included in the Final EA.

Very truly yours,



Keith Kurahashi

cc: Ewa Industrial Park



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

BARRY FUKUNAGA
DIRECTOR

Deputy Directors
MICHAEL D. FORMBY
FRANCIS PAUL KEENO
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:

STP 8.2624

September 24, 2007

Mr. Henry Eng
Director
Department of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Attention: Timothy Hata, Staff Planner

Dear Mr. Eng:

Subject: Ewa Industrial Park, Ewa Industrial Park, LLC
Draft Environmental Assessment (DEA)
TMK: 9-1-069: 003; Oahu

Thank you for providing the subject Draft Environmental Assessment (Draft EA) for our review.

The following are our comments:

1. The project is in a location subject to overflights of aircraft using Honolulu International Airport and Kalaeloa Airport. The typical activity associated with the proposed industrial development is an allowed and acceptable use. The developer should nevertheless advise its tenants and occupants of the potential for aircraft overflights. Tenants and occupants should further be advised against constructing any improvements that create avigational hazards (e.g., light reflection).
2. The project will contribute its share of vehicle traffic to the collective traffic funneling onto State highways in the area. The project also includes direct access of the highway. The developer should provide project and regional transportation measures and traffic improvements to mitigate these impacts.

The Highways Division is completing its review of the Draft EA's traffic impact analysis report (TIAR). The developer should be required to consult with the Highways Division through the Highways Planning Branch, and provide or implement any recommended mitigation measures, including any of the TIAR's recommended traffic mitigation recommendations deemed acceptable by the Highways Division.

Mr. Henry Eng
Page 2
September 24, 2007

STP 8.2624

Some of the items that the Highways Division may want to discuss and resolve with the developer are:

- a. The traffic projections for Fort Barrette Road and the North-South Road from Roosevelt Avenue, including school days, when the North-South Road is opened.
- b. Necessary improvements along Roosevelt Avenue and other intersections connecting to Roosevelt Avenue.
- c. Intersection improvements at the proposed driveway access to Roosevelt Avenue.

We appreciate the opportunity to provide comments.

Very truly yours,


for BARRY FUKUNAGA
Director of Transportation

- c: Keith Kurahashi, Kusao & Kurahashi, Inc.
Lawrence Lau, Office of Environmental Quality Control

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.rr.com

December 21, 2007

Mr. Brennon Morioka
Acting Director of Transportation
State of Hawaii
869 Punchbowl Street
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment (EA) for the Proposed Ewa Industrial Park - Tax Map Key: 2-6-024: 70 and 71

Dear Mr. Morioka

Thank you for your comments on the subject Draft Environmental Assessment (DEA) dated September 24, 2007 and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park.


The following responds to your comments:

1. We are aware that the project site is subject to overflights of aircraft using Honolulu International Airport and Kalaeloa Airport. However, the project area is outside of the 60 Ldn or greater noise level. Through the CC&R's, the covenants and development regulations within the condominium type industrial development, the owners/tenants will be made aware of the potential for aircraft overflights.
2. The applicant agrees to early coordination with the State Department of Transportation in their participation of impact fees for transportation improvements. The applicant expects to mitigate regional traffic impacts from the project through payment of impact fees through the Ewa Regional Highway Fund in accordance with Chapter 33A of the Revised Ordinances of Honolulu. In addition the applicant will participate in the funding of improvements at access points to the Ewa Industrial Park. We understand that DOT will be requesting an update to the Traffic Study prior to the development of the Roosevelt Avenue access planned as part of Phase II and that improvements required to support that access are to be provided by the applicant.

3. As mentioned in your letter, we will await the Highway Division review of our Draft EA. The developer will also discuss with the Highway Division the three items of concern in your letter dated September 24, 2007. We expect that the updated traffic study will provide a more accurate description of traffic on Fort Barrett Road, North-South Road and Roosevelt Avenue and the improvements necessary to support the Roosevelt Avenue access to the property.

Again, we thank you for your review of our Draft EA. Your comments and our response will be included in the Final EA.

Very truly yours,


for Keith Kurahashi

cc: Ewa Industrial Park, LLC



STATE OF HAWAII
DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM
LAND USE COMMISSION
P.O. Box 2359
Honolulu, Hawaii 96804-2359
Telephone: 808-587-3822
Fax: 808-587-3827

September 5, 2007

Mr. Timothy Hata
Department of Planning and Permitting
City and County of Honolulu
650 South King Street, 7th Floor
Honolulu, Hawaii 96813

Dear Mr. Hata:

Subject: Draft Environmental Assessment (DEA) for the Proposed Ewa Industrial Park
1020 Geiger Road, Ewa, Hawaii
Tax Map Key: 9-1-69:3

We have reviewed the DEA prepared in this matter and have the following comments:

- 1) We confirm that the subject parcel, as represented on Exhibit 2, is designated within the State Land Use Urban and Agricultural Districts. We note that the Agricultural District is erroneously referred to as the "Agriculture" District in various sections of the DEA. This should be corrected in the Final EA.
- 2) We understand that the proposed project involves the development of light industrial uses consisting of light manufacturing, warehousing, distribution, and possibly a self-storage facility. A small amount of accessory retail space, such as a convenience store, is also planned. The project will consist of two phases: Phase I (23.3 acres) and Phase II (25.095 acres). We further acknowledge that the applicant intends to file a boundary amendment petition with the Land Use Commission to reclassify Phase II of the project from the Agricultural District to the Urban District. As you may know, the majority of Phase I was part of the approximately 685 acres of land urbanized in Docket No. A88-627/Gentry Development Company, a Hawaii limited partnership (Gentry). The reclassification of the 685 acres, including most of the lands that now comprise Phase I, was subject to 27 conditions of approval. It was anticipated that the Phase I acreage would include construction and housing support companies engaged in the masonry, plumbing, electrical, glazing, painting, flooring, and roofing trades; warehousing for nearby businesses; public storage facilities; and automotive and repair shops. We suggest that the Final EA include a discussion on the

Mr. Timothy Hata
September 5, 2007
Page 2


efforts of the landowner/applicant, as the successor-in-interest to Gentry, to comply with the 27 conditions as they pertain to the Phase I acreage.


- 3) For your information, our office is currently processing a boundary interpretation request (BI No. 07-12) to determine the actual location of the Urban/Agricultural District boundary on the subject parcel. We have advised the requester that the survey map submitted in conjunction with the request contained errors in the metes and bounds when compared to the record in the above docket. To date, the requester has not provided our office with a revised map. To the extent that the DEA appears to have relied, in part, on this map to determine the specific acreage within each phase of the proposed project, we note that any correction to the metes and bounds could change the respective acreages cited in the DEA. To this end, upon receipt of the revised map, we will complete the boundary interpretation and forward a copy of it to the applicant's consultant to include as part of the Final EA.

We have no further comments to offer at this time. Thank you for the opportunity to comment on the DEA.

Should you have any questions, please feel free to call me or Bert Saruwatari of our office at 587-3822.

Sincerely,


ANTHONY J. H. CHING
Executive Officer

c:  Keith Kurahashi
Office of Environmental Quality Control

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.m.com

November 12, 2007

Mr. Anthony J. H. Ching, Executive Officer
State of Hawaii
Department of Business, Economic Development and Tourism
Land Use Commission
P.O. Box 2359
Honolulu, Hawaii 96804-2359

Subject: Draft Environmental Assessment (EA) for the Proposed Ewa Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Mr. Ching:

Thank you for your letter to Mr. Timothy Hata, Staff Planner at the Department of Planning and Permitting, dated September 5, 2007, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park.

We have responded to your comments as follows:

1. The erroneous referral of "Agriculture" in the Draft EA will be corrected in the Final EA to read "Agricultural". Thank you for pointing this out to us.
2. We have reviewed the 27 conditions of approval attached to the 685 acres of land urbanized in Docket No. A88-627/Gentry Development Company, a Hawaii limited partnership that covers most of Phase I of the proposed Ewa Industrial development, and will include a discussion on the efforts of the developer to comply with the applicable conditions within said 27 conditions as they pertain to the proposed development. It is the applicant's intention to attract businesses such as those listed in your comment letter; masonry, plumbing, electrical, glazing, painting, flooring and roofing trades among many other light industrial businesses. However, due to community concerns and sensitivity on the part of the developer to

those residents living in the vicinity of the project site, the following businesses will be prohibited from operating in the proposed industrial development; petroleum processing plants, explosives and chemical manufacturing or storage plants, agricultural producers processing plants, salvage yards, waste disposal plants, composting plants, recycling plants and demolition plants.

3. We thank you for advising us of the possibility that a correction to the metes and bounds on the survey map is possible, and that any changes could affect the acreage cited in our Draft EA. We will await your review of the boundary interpretation to include in our Final EA.

Your comments and our response will be included in the Final EA.

Very truly yours,



Anne Kusao

cc: Ewa Industrial Park
Department of Planning and Permitting

PHONE (808) 594-1888



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

RECEIVED FAX (808) 594-1865

'07 SEP 25 P1 50

DEPT OF PLANNING
AND PERMITTING
CITY & COUNTY OF HONOLULU

HRD07/2729B

September 18, 2007

Timothy Hata, Staff Planner
City and County of Honolulu
Department of Planning and Permitting
650 South King Street, 7th Floor
Honolulu, Hawai'i 96813

**RE: Draft Environmental Assessment, Proposed 'Ewa Industrial Park, O'ahu,
TMK: 9-1-069:003.**

Dear Mr. Hata,

The Office of Hawaiian Affairs (OHA) is in receipt of the above referenced request for comments concerning a draft environmental assessment (DEA) for the proposed 'Ewa Industrial Park on O'ahu. We offer the following comments.

The request for a DEA is in accordance with Chapter 343 of the Hawai'i Revised Statutes (HRS). This law, along with its implementing regulations, Title 11, Chapter 200, of the Hawai'i Administrative Rules (HAR) is the basis for the environmental impact process in the State of Hawai'i.

Under the Section 106 process of the National Historic Preservation Act and its implementing regulations (36 CFR § 800), an evaluation of the effects of a proposed project is considered first. If a determination of adverse effect is made, the effects are mitigated, usually through measures described in a memorandum of agreement.

✓ OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Timothy Hata
Department of Planning and Permitting
September 18, 2007
Page 2

The applicant seems to take a position that Native Hawaiian burials will not be disturbed on the subject property because of prior development. However, this assumption is flawed, as evidenced by numerous recent cases of Native Hawaiian burials with no surface markers being identified during construction activities on properties that have been extensively developed in the past. Further, OHA wrote a comment letter dated October 11, 2006 during a pre-draft consultation for this project in which we listed numerous burial sites and which you quoted in this DEA. OHA looks forward to your response.

Thank you for the opportunity to comment. If you have any further questions or concerns, please contact Grant Arnold at (808) 594-0263 or granta@oha.org.

Sincerely,



Clyde W. Nāmu'o
Administrator

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.mn.com

November 12, 2007

Mr. Clyde W. Namu'o, Administrator
Office of Hawaiian Affairs
State of Hawaii
711 Kapi'olani Boulevard, Suite 500
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment (EA) for the Proposed Ewa Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Mr. Namu'o:

Thank you for your letter to Mr. Timothy Hata, Staff Planner at the Director of the Department of Planning and Permitting, dated September 25, 2007, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park.

We have responded to your comments as follows:

1. During construction of the proposed Ewa Industrial Development Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules will be strictly followed. Should any significant cultural deposits or human skeletal remains be encountered, work will stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) will be contacted.
2. We understand and respect your concern regarding the possible disturbance of previously unidentified Native Hawaiian burials on the subject property. The Cultural Impact Assessment Report prepared by Cultural Surveys Hawai'i, Inc for this project, dated January 2007, states in their Management Summary, Section on Cultural Impact Recommendations, page iii as follows:

“Based on the evidence gathered for this evaluation, no contemporary or continuing cultural practices were discovered within the project area. However, two study participants

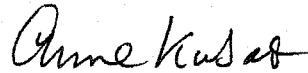
mentioned that the 'Ewa plains is a well-known place for sinkhole burials."

"It should be noted that subsurface properties associated with former traditional Hawaiian activities in the project area, such as artifacts, cultural layers, and burials may be present despite the decades of modern activities. As a precautionary measure, CSH recommends that personnel involved in the Ewa Industrial Park development project be informed of the possibility of inadvertent cultural finds, and should be made aware of the appropriate notification measures to follow. In the unlikely event that previously unidentified subsurface historic properties are encountered by project construction, the project proponents should immediately stop work and contact SHPD's Oahu Office (Tel. (808) 692-8015)."

Again, should significant cultural deposits or human skeletal remains, including Native Hawaiian burials be discovered or disturbed on the subject property the contractor will stop work and notify the State Historic Preservation Division (SHPD/DLNR) immediately.

Your comments and our response will be included in the Final EA.

Very truly yours,



Anne Kusao

cc: Ewa Industrial Park
Department of Planning and Permitting



The Senate

STATE CAPITOL
HONOLULU, HAWAII 96813

State Capitol Room 207, Honolulu, HI 96813
E-mail: senespero@capitol.hawaii.gov

Telephone: (808) 586-6360
Fax: (808) 586-6361

August 29, 2007

Mr. Timothy Hata
City and County of Honolulu
Department of Planning and Permitting
650 S. King Street, 7th Floor
Honolulu, HI 96813

RE: Draft Environmental Assessment for the Proposed Ewa Industrial Park

Dear Tim:

I am writing in support of the proposed site for the new Ewa Industrial Park. Ewa is a high growth area, and the rise in residential population needs to be balanced with work force opportunities. Providing jobs and necessary services and businesses close to home reduces the need to expend the time and fuel for driving longer distances. This helps reduce traffic problems and keeps commuting short and convenient for residents. Businesses that base themselves in this location will have quick access to customers, and to the freeway, reducing traffic congestion along Fort Weaver Road. The location selected – next to the sewage plant -- is ideal for an industrial park. It maintains the character of the area and leaves land free for continued commercial and residential development. Moreover, the chosen location is ideal for businesses that will support the new developments to be built in the area: the film studio, shopping mall, hotel, and auxiliary services.

Thank you for the opportunity to lend my support of the proposed site. If I can provide any more information, please do not hesitate to contact me.

Respectfully,

Will Espero
State Senator

Cc: Kusao & Kurahashi
Office of Environmental Quality Control

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.m.com

October 31, 2007

Hawaii State Senator Will Espero
The State Capitol
Honolulu, Hawaii 96813

Subject: Draft Environmental Assessment (EA) for the Proposed Ewa Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Senator Espero:

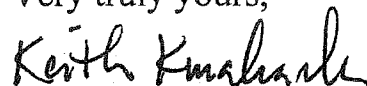
Thank you for your letter of support to Mr. Timothy Hata, Staff Planner at the Director of the Department of Planning and Permitting, dated August 29, 2007, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park.

On behalf of the applicant we thank you for your support of the proposed Ewa Industrial Development, and for your recognition of the need for such a development in this growing community. As you pointed out Ewa is a high growth area and the rise in residential population needs to be balanced with work force opportunities. In addition such a development will reduce traffic problems and keep commuting time short and convenient for area residents. Again, you pointed out, as we agree, the location of the proposed development next to the existing sewage treatment plan is ideal for an industrial park and the light industrial development will support new developments in the area such as the proposed film studio, shopping mall, hotel and auxiliary services.

Again, thank you for your support. Should you have further questions regarding this project please do not hesitate to call us at 988-2231 and we will attempt to answer your questions and/or concerns.

Your comments and our response will be included in the Final EA.

Very truly yours,



Keith Kurahashi

cc: Ewa Industrial Park

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



August 29, 2007

MUFI HANNEMANN, Mayor


RANDALL Y. S. CHUNG, Chairman
SAMUEL T. HATA
ALLY J. PARK
ROBERT K. CUNDIFF
MARC C. TILKER

LAVERNE T. HIGA, Ex-Officio
BARRY FUKUNAGA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

DEAN A. NAKANO
Deputy Manager and Chief Engineer

TO: TIMOTHY HATA, STAFF PLANNER
DEPARTMENT OF PLANNING AND PERMITTING

FROM:  KEITH S. SHIDA, PRINCIPAL EXECUTIVE
CUSTOMER CARE DIVISION

SUBJECT: MEMORANDUM DATED AUGUST 9, 2007 REGARDING PROPOSED EWA
INDUSTRIAL PARK DRAFT ENVIRONMENTAL ASSESSMENT

Thank you for the opportunity to comment on the proposed project.

The existing water system is presently adequate to provide the domestic water requirements of the proposed industrial development. However, the existing water system cannot provide adequate fire protection to the proposed industrial park. Our Water System Standards require a fire hydrant to be located within 125 feet of industrial developments and provide a flow of 4000 gallons per minute. The nearest fire hydrant is located approximately 750 linear feet away. Therefore, the developer will be required to install a fire hydrant in the vicinity of the proposed development. The construction drawings should be submitted for our approval. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit application. The final decision on the availability of water will be confirmed when the building permit application is submitted for approval.

When water is made available, the applicant will be required to pay our Water System Facilities Charges for resource development, transmission and daily storage.

The on-site fire protection requirement should be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

The Board of Water Supply Rules and Regulations require the use of nonpotable water for the irrigation of large landscaped areas, if a suitable supply is available.

If you have any questions, please contact Robert Chun at 748-5440.

cc: Mr. Keith Kurahashi, Kusao & Kurahashi, Incorporated
Mr. Laurence K. Lau, Office of Environmental Quality Control

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.nr.com

October 31, 2007

Mr. Keith S. Shida, Principal Executive
Customer Care Division
Board of Water Supply
City and County of Honolulu
630 S. Beretania Street
Honolulu, Hawaii 96843

Attention: Mr. Robert Chun

Subject: Draft Environmental Assessment (EA) for the Proposed Ewa
Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Mr. Shida:

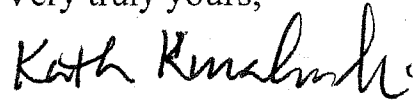
Thank you for your letter to Mr. Henry Eng, Director of the Department of Planning and Permitting, dated August 29, 2007, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park. Our response to your comments are as follows:

1. Thanks you for information us that the existing water system is presently adequate to provide the domestic water requirements of the proposed industrial development.
2. The applicant will provided a fire hydrant within 125 feet of the proposed development and will provide a flow of 4000 gallons per minute, with construction drawings being submitted to BWS for approval prior to development.
3. The applicant is aware that the final decision on the availability of water will be confirmed when the building permit application is submitted for approval.
4. The applicant is aware that they will be required to pay the Water System Facilities Charges for resource development, transmission and daily storage.

5. The on-site fire protection requirements will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.
6. The applicant is aware that the Board of Water Supply Rules and Regulations require the use of nonpotable water for the irrigation of large landscaped areas, if a suitable supply is available.

Your comments and our response will be included in the Final EA.

Very truly yours,

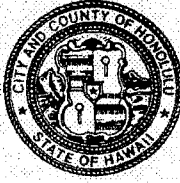


Keith Kurahashi

cc: Ewa Industrial Park

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) 523-4567
Web site: www.honolulu.gov



MUFI HANNEMANN
MAYOR

EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

August 31, 2007

MEMORANDUM

TO: HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

FROM:  EUGENE C. LEE, P.E., DIRECTOR

SUBJECT: PROPOSED EWA INDUSTRIAL PARK DRAFT ENVIRONMENTAL
ASSESSMENT, TMK: 9-1-069:003 (EWA, OAHU, HAWAII)

Thank you for giving us the opportunity to comment on the above Draft Environmental Assessment.

The Department of Design and Construction has the following comments:

- There could potentially be an adverse impact on the City's Ewa Mahiko District Park whose entrance is located on the two-lane wide (with medial strip) Renton Road. Traffic congestion on Renton Road in front of the park, especially during late afternoons during weekday periods, could result from construction of the relatively dense industrial and retail development being proposed nearby. However, the applicant has stated in the DEA that the Renton Road access would be used only for emergency access when Geiger Road or Roosevelt Avenue driveways cannot be used for access. The applicant states that the Renton Road access will be chained and locked, with strict supervision by the industrial park security force. So long as these mitigative measures are followed through on, we anticipate no significant impacts to the use of the City's park.
- Incidentally, the statement on page 59 in the DEA regarding the Coastal Zone Management Area is not correct. By legal definition, all of the island of Oahu is within the Coastal Zone Management Area (as are all of the other islands of the State). Thus, the project site is subject to the State's Coastal Zone Management laws, rules, and regulations. The "Coastal Zone Management Area" is distinctly different from the "Special Management Area."

Should you have any questions, please contact Clifford Lau, Chief of our Facilities Division, at 768-8483.

ECL:lt (222145)

c: Department of Planning and Permitting – Timothy Hata
Kusao & Kurahashi, Inc. – Keith Kurahashi
Office of Environmental Quality Control – Laurence Lau
DDC Facilities Division

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.m.com

November 9, 2007

Mr. Eugene C. Lee, P.E. Director
Department of Design and Construction
City and County of Honolulu
650 S. King Street, 11th Floor
Honolulu, Hawaii 96813

Attention: Mr. Clifford Lau, Chief of Facilities Division

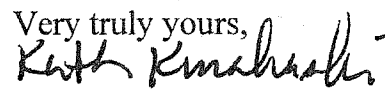
Subject: Draft Environmental Assessment (EA) for the Proposed Ewa Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Mr. Lee:

Thank you for your memorandum, dated August 31, 2007, to Mr. Henry Eng, Director of the Department of Planning and Permitting, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park. We have responded to your comments as follows:

1. We appreciate your concern of the potential adverse impact of additional traffic on Renton Road due to our proposed development and its affects on the City's Ewa Mahiko District Park whose entrance is located on the two-lane wide (with medial strip) Renton Road. As we stated in the Draft EA, until such time as the City decides to further improve Renton Road, access to Renton Road from the project site would be used only for emergency access when Geiger Road or Roosevelt Avenue driveways cannot be used. The Renton Road access would remain chained and locked at all other times, with strict supervision on the part of the industrial park security.
2. We apologize for the incorrect statement on page 59 and will make the correction in our Final EA.

Your comments and our response will be included in the Final EA.

Very truly yours,

Keith Kurahashi

cc: Ewa Industrial Park

DEPARTMENT OF ENVIRONMENTAL SERVICES
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 308, KAPOLEI, HI 96707
TELEPHONE: (808) 692-5159 FAX: (808) 692-5113 WEBSITE: <http://www.co.honolulu.gov>

MUFI HANNEMANN
MAYOR



ERIC S. TAKAMURA, Ph.D., P.E.
DIRECTOR

KENNETH A. SHIMIZU
DEPUTY DIRECTOR

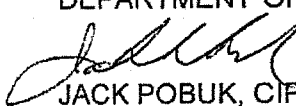
ROSS S. TANIMOTO, P.E.
DEPUTY DIRECTOR

IN REPLY REFER TO:
PRO 07-069

October 12, 2007

MEMORANDUM

TO: TIMOTHY HATA, STAFF PLANNER
DEPARTMENT OF PLANNING AND PERMITTING

FROM:  JACK POBUK, CIP PROGRAM COORDINATOR
DEPARTMENT OF ENVIRONMENTAL SERVICES

SUBJECT: PROPOSED EWA INDUSTRIAL PARK DRAFT ENVIRONMENTAL ASSESSMENT, Tax Map Key: 9-1-069:003 (EWA, OAHU, HAWAII)

We have reviewed the subject Draft Environmental Assessment (EA) and have the following comments.

1). The City and County of Honolulu's (City's) existing Honouliuli Wastewater Treatment Plant (WWTP) will be expanded in the future. The expansion will be needed to accommodate the increase in wastewater flow due to planned future developments in the Ewa Plains, Central Oahu, and other areas served by the WWTP. Expansion will also be needed to provide additional treatment facilities due to increasingly stringent State and Federal requirements for water and air quality and bio-solids disposal.

The future expansion of the WWTP will require additional land, and the site of the proposed Ewa Industrial Park land has been previously looked upon by the City as potential land for the WWTP expansion. The proposed Industrial Park would take up the land that would otherwise be available for WWTP expansion, thus restricting the available options the City has for WWTP expansion, and therefore the proposed Industrial Park would seem to have an impact on a public facility. This issue is apparently not addressed in the Draft EA.

In order to mitigate this potential impact, we propose that the developer consider the following:

- a). The use of the WWTP's existing area for future construction would be maximized if future WWTP facilities could be built up to the existing WWTP property lines. A 25 ft. setback is required for WWTP treatment facilities. The City could consider purchasing a strip of land at least 25 ft. wide on the east and north sides to provide additional land that could be used for the required setback. On the north side, there is an existing easement in the developer's property, at the western end, for the City's two sewer trunk lines and for recycled water lines. The developer is not allowed to build in this easement. The strip of land which the City purchases in this area, where there is an existing easement, should be the same width as the easement, which is 35 ft. in some locations. The strips of land purchased by the City would be used for the required setbacks, for maintenance roads around treatment facilities, and for pipe corridors.

The developer has indicated an interest in purchasing a small piece of the City's land at the northeast corner of the WWTP property. By rounding off this corner of the WWTP property, there would be more room for the proposed roadway in the developer's property. There appears to be an opportunity for a mutually beneficial agreement between the City and the developer regarding purchase of these lands.

b). Drainage is an issue for the WWTP property. The City has previously had to design large storage basins within the WWTP property to reduce the peak drainage flow caused by construction of new facilities on the WWTP site. This has significantly reduced the land area available on the WWTP property for new construction. We understand the developer may be willing to accept drainage flow from the WWTP property, and allow routing of the drainage flow through their property and continue on to the existing lakes in the Coral Creek Golf Course. This accommodation by the developer would help to mitigate the impact to the WWTP of the development of the Industrial Park. We suggest that a drainage easement or an agreement may be needed to allow this drainage plan to proceed. The developer could consider including a description of this intended plan for a drainage easement or agreement in the EA.

2). There is a potential for noise and odor from the WWTP to impact the future businesses in the Industrial Park, but this issue is apparently not addressed in the Draft EA. Although the City intends to fully comply with existing regulations for noise and odor, it is common for noise and odors from a WWTP to be a frequent cause of complaints to neighboring properties. The question of what is an acceptable level of noise and odor varies for individuals, and it is often the case that the acceptable level for some individuals is much lower than what the regulations require. The presence of WWTP noise and odors needs to be disclosed to all future owners and tenants in the Industrial Park. It is important that the discloser include mention of the seasonal Kona winds that cause the noise and odors from the WWTP to drift directly to the Industrial Park. In order to mitigate the potential problems associated with noise and odor, the developer should consider the following:

- a). Provide for as much buffer space as possible between the future buildings in the Industrial Park and the WWTP boundary. Placing the roadways within the Industrial Park along the WWTP boundary would help to increase this buffer area.
- b). Provide for landscaping and trees within the Industrial Park along the WWTP boundary and along the developer's roadways to provide a barrier between the future buildings and the WWTP.

Should you have any questions, please call Jack Pobuk, CIP Program Coordinator, at 768-3464.

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231
FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.rr.com

December 21, 2007

Mr. Jack Pobuk, CIP Program Coordinator
Department of Environmental Services
City and County of Honolulu
1000 Uluohia Street, Suite 308
Kapolei, Hi. 96707

Subject: Draft Environmental Assessment (EA) for the Proposed Ewa Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Mr. Pobuk:

Thank you for your memorandum to Mr. Timothy Hata, Staff Planner at the Department of Planning and Permitting, dated October 12, 2007, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park.

The following responds to your comments:

- 1a. Based on our earlier meeting with you and your staff the applicant is agreeable to the City's purchase of the 25-foot easement area mentioned in your memorandum of October 12, 2007 located on the project's western boundary for use by the Waste Water Treatment Plan that is adjacent to the proposed Ewa Industrial Park. The applicant is willing to consider sewer connection credits in lieu of cash for the property

We confirm our interest in purchasing a small piece of the City's land at the northeast corner of the WWTP property and are pleased that there appears to be an opportunity for a mutual beneficial agreement between the City and the developer regarding purchase of these lands as stated in your memorandum dated October 12, 1007.

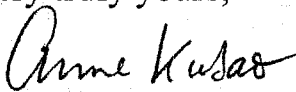
- 1b. The applicant has an agreement with the owner of the Coral Creek Golf Course to allow drainage from the proposed Ewa Industrial Park

to flow onto the golf course. The applicant will work with the City to request that the Golf Course accommodate drainage from the WWTP that will be directed onto our property, and included in the flow directed to the golf course.

2. We will address the potential for noise and odor from the adjacent WWTP in our Final EA. Further, through the CC&R's, the covenants and development regulations within the condominium type industrial development, the owners/tenants will be made aware of this possibility.
 - 2a. The developer will provide buffer space between the future buildings in the industrial development and the WWTP boundary by placing interior roadways and/or open parking along the WWTP boundary.
 - 2b. The project will be landscaped with trees and numerous plantings, and the area along the WWTP boundary will include a fence or landscaping as a barrier between buildings and the WWTP.

Again, we thank you for your review of our Draft EA. Your comments and our response will be included in the Final EA.

Very truly yours,

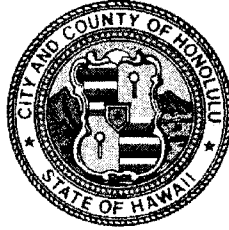

JK Keith Kurahashi

cc: Ewa Industrial Park, LLC

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 ULUOHIA STREET, KAPOLEI HALE, SUITE 215, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 692-5054 FAX: (808) 692-5857



MUFI HANNEMANN
MAYOR

LAVERNE HIGA, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE K. MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 07-786

September 4, 2007

MEMORANDUM

TO: HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

ATTENTION: TIMOTHY HATA, STAFF PLANNER

FROM: *Laverne Higa*
LAVERNE HIGA, P.E., DIRECTOR AND CHIEF ENGINEER
DEPARTMENT OF FACILITY MAINTENANCE

SUBJECT: PROPOSED EWA INDUSTRIAL PARK DRAFT ENVIRONMENTAL
ASSESSMENT, TMK: 9-1-069:003

Thank you for the opportunity to provide comments on the draft environmental assessment.

The draft environmental assessment proposes to collect all of the site drainage and direct that drainage through an underground drainage system to two lakes in the Coral Creek Golf Course. The City will not own or maintain that system, those facilities should be privately-owned and maintained.

Should you have any questions, please call Larry Leopardi, Chief of the Division of Road Maintenance, at 768-3600.

c: Kusao & Kurahashi, Inc.
Attn: Keith Kurahashi
Office of Environmental Quality Control - (OEQC)
Attn: Laurence K. Lau

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.nn.com

November 9, 2007

Ms. Laverne Higa, P.E.
Director and Chief Engineer
Department of Facility Maintenance
City and County of Honolulu
1000 Uluohia Street, Suite 215
Kapolei, Hawaii 96707

Attention: Mr. Larry Leopardi, Chief, Division of Road Maintenance

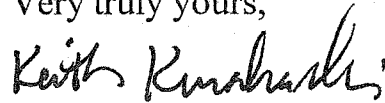
Subject: Draft Environmental Assessment (EA) for the Proposed Ewa Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Ms. Higa:

Thank you for your memorandum, dated September 4, 2007, to Mr. Henry Eng, Director of the Department of Planning and Permitting, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park. We are aware that the City will not own or maintain the drainage system from the proposed Ewa Industrial development into two lakes in the Coral Creek Golf Course. The applicant and their engineering consult, Gray Hong Nojima & Associates, Inc., will work with the Coral Creek Golf Course and their engineers in the design and implementation of the drainage system.

Your comments and our response will be included in the Final EA.

Very truly yours,

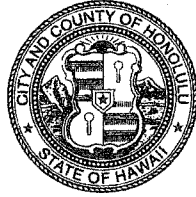


Keith Kurahashi

cc: Ewa Industrial Park

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 768-8000 • FAX: (808) 527-6743
INTERNET: www.honolulu.gov • DEPT. WEB SITE: www.honoluludpp.org



MUFI HANNEMANN
MAYOR

HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUÉ
DEPUTY DIRECTOR

2007/ELOG-2193(TH)

November 2, 2007

Mr. Keith Kurahashi
Kusao & Kurahashi, Inc.
2752 Woodlawn Drive, Suite 5-202
Honolulu, Hawaii 96822

Attn: Ms. Anne Kusao

Dear Mr. Kurahashi:

Subject: Draft Environmental Assessment for the Proposed
Ewa Industrial Park, TMK: 9-1-069:003, Ewa, Oahu, Hawaii

We have reviewed the Draft Environmental Assessment (DEA) for the proposed Ewa Industrial Park and offer the following comments, following the section headings of the DEA.

1. **General Information**

Section II.H. identifies the site's zoning as AG-1 Restricted Agricultural District. However, the Location and Zoning Map (Exhibit 1) on Page 5 of the DEA identifies the entire site as AG-2 General Agricultural District. Our land use records identify the entire site as AG-1 Restricted Agricultural District. Furthermore, Exhibit 1 shows a "I-1" zoned parcel of land adjacent to and south of the Honouliuli Wastewater Treatment Plant (WWTP) and Geiger Road. This parcel was rezoned from I-1 Light Industrial District to IMX-1 Industrial-Commercial Mixed Use District in June 2006 via Ordinance 06-25. Therefore, please revise Exhibit 1 and all applicable maps in the FEA to show the correct zoning districts.

Section II.J. "Public Infrastructure Map" states "no improvements affecting this property (Exhibit 4)." However, Exhibit 4 shows a Sewage Treatment Plant (STP) symbol (#013) on the Ewa PIM that does potentially affect the property. Therefore, please revise Section II.J. (Page 4) of the FEA to state: "PIM #013 depicts future expansion of the Honouliuli WWTP."

2. **III. Description of Proposed Action**

Section A "General Description" should be revised in the following manner:

- a. The first paragraph on Page 12 states that there will be an emergency access driveway to the Phase II portion of the project off Renton Road near Haakai Street. According to the Site Plan for Phase I and II, we note that the proposed emergency driveway

(Access 3), Renton Road and the OR&L right-of-way all intersect at the northwest corner of Phase II.

As such, we recommend that the FEA and the associated traffic study explain that use of the emergency access driveway will not conflict with the OR&L right-of-way.

b. Chapter 205, Hawaii Revised Statutes, Land Use Commission

The discussion regarding conformance to Chapter 205 State Land Use Commission should be expanded by explaining that State's Urban District does permit uses such as a light industrial subdivision. This section should also explain why Phase II of the proposed project is not in conformance with the intent of the "Agricultural" district and why Phase II needs a State Land Use District Boundary Amendment.

c. City and County of Honolulu General Plan

We recommend that the FEA include a new section that discusses how the proposed project conforms to the objectives and policies of the City's General Plan. This new section should also disclose that the project site is actually in the Urban Fringe area of Ewa rather than Ewa's "second city" as mentioned on Page 12 of the DEA.

d. Ewa Development Plan

Section IIIA.5.b. of the FEA should be expanded to provide a comprehensive discussion about how the proposed project conforms to Ewa's long-range vision, and applicable land use policies, principles, and guidelines.

Page 14 of the DEA states that the "... the Ewa Development Plan Urban Land Use Map designates this parcel as 'Industrial', and is consistent with the proposed industrial park."

This statement is inaccurate. The Ewa Development Plan (DP) Urban Land Use Map does not show land use designations by individual parcel. The Ewa DP Urban Land Use Map is conceptual in nature and intended to illustrate the land use policies described by the text. Thus, it is a conceptual land use plan, providing a vision and policies for making decisions about appropriate land uses for individual parcels.

Section 3.4.3.1 of the Ewa DP provides specific guidelines regarding the preservation of the OR&L historic railway. Specifically, parking and driveway not allowed within the 50-foot buffer. The area should be landscaped with rest stops, including seating and amenities adjacent to the Pear Harbor Historic Trail (PHHT) bikeway/path. Opportunities for pedestrian access should be provided from the site to the PHHT.

Section 3.7.3.1 of the Ewa DP and the Urban Land Use Map call for a limited amount of industrial use in the Honouliuli Industrial Area that includes the project site and the Honouliuli WWTP. However, it is incorrect that an I-2 zoned industrial park located next to the Honouliuli WWTP is consistent with the Ewa DP vision and policies for industrial centers because the Ewa DP advocates that this area be reserved for the expansion of the WWTP.

The FEA should include a discussion about the relationship between the Industrial Centers policies in Section 3.7.3 and the proposed zoning. Specific points that should be covered include:

1. Need for an additional sixty (60) acres to provide for expansion of the Honouliuli WWTP (Page 3-74).
2. Principles regarding appropriate scale (Page 3-75).
3. Principles regarding Environmental Compatibility (Page 3-76).
4. Honouliuli Industrial Area Guidelines regarding Building Height and Mass (Page 3-77).
5. Honouliuli Industrial Area Guidelines regarding Landscape Treatment (Page 3-78).

The FEA should discuss how the multiple access ways that will serve the project conform to Section 4.1.7 of the Ewa DP that advocate a comprehensive roadway network to improve multi-modal circulation between neighboring communities and within the region as a whole. Therefore, the applicant should provide multiple access points to improve connectivity in the community, including additional vehicular accesses to Roosevelt Avenue and out to Renton Road.

e. Public Infrastructure Maps

The brief discussion of the Public Infrastructure Map (PIM) in the second paragraph on Page 14 should be expanded in a new and separate section in Chapter III of the FEA. This section should begin by discussing the purpose of the PIM and state that the current PIM symbol may affect the future of the proposed project unless the City is no longer interested in the land north of the project site. This section of the FEA should summarize the following:

The City's records indicate that in 1991, the City's former Department of Public Works (DPW) initiated an amendment to the former Ewa Development Plan Public Facilities Map (DPPFM) to add a Sewage Treatment Plant (STP) symbol on the project site to facilitate the expansion of the existing Honouliuli WWTP.

The amendment to the City's Ewa DPPFM was approved under Ordinance 92-11. At the time, the DPW (now the Department of Environmental Services) proposed to acquire an additional 27 acres north of the existing Honouliuli WWTP to expand the treatment facility to provide additional capacity to meet increased development in the region. The STP symbol was transferred from the Ewa DPPFM to the Ewa PIM at the request of the ENV prior to the adoption of the Ewa PIM under Resolution 00-37.

The FEA should also summarize recent discussions between the applicant and the ENV that include ENV's interest in acquiring 20-50 acres of land in Kalaeloa, to the west of the Honouliuli WWTP for expansion purposes.

f. Land Use Ordinance (LUO)

The DEA describes the project as a light industrial park, but the applicant requests I-2 Intensive Industrial District zoning-not I-1 Light Industrial District zoning. Describing the project as light industrial when I-2 zoning is requested does not seem appropriate because once approved, the actual uses will be guided by the approved zoning not the project descriptions in the DEA. As such, we recommend that the section on zoning in the FEA be revised to include a discussion regarding the purpose and intent of both the I-2 and I-1 districts and whether I-1 can accommodate the proposed project.

g. Public Services

On October 9, 2006, the Honolulu Fire Department (HFD) provided a written response to the applicant's pre-consultation on the DEA. In their October 9, 2006 response, the HFD stated that the project must comply with certain fire protection requirements to meet the current fire code. The HFD reiterated their comments in their August 22, 2007 letter that responds to the applicant's DEA. However, Section III.D.11. of the DEA only acknowledges the October 2006 letter but does not discuss the requirements that must be met. The DEA also does not state that these requirements will be complied with to meet the fire code and mitigate potential impacts.

We recommend that the FEA disclose the HFD's requirements in the appropriate sections of the FEA and disclose how the applicant will comply with the requirements of the fire code.

3. The FEA should discuss the timing of the proposed project and its roadway improvements in conjunction with planned roadway improvements in the vicinity of this project. For instance, the FEA should discuss the timing and coordination of the project's main entrance on Geiger Road with Gentry's improvements of Geiger Road up to Kalaeloa. Additionally, the FEA should discuss the timing of Kapolei Parkway from Gentry's northern boundary to the North-South Road.

Mr. Keith Kurahashi
Kusao & Kurahashi, Inc.
November 2, 2007
Page 5

The FEA should discuss the possibility of developing the Renton Road/Haakai Street driveway (Access 3) as a permanent driveway to relieve pressure on Geiger Road. For further information on this issue, please contact our Traffic Review Branch at 768-8077.

4. **V. Major Impacts and Alternatives Considered**

This section of the DEA only discusses two alternatives: "No Action," and the "Proposed Industrial Park." Although the proposed I-2 zoning seems compatible next to the existing Honouliuli WWTP, this section of the FEA should also discuss two more zoning alternatives: I-1 Light Industrial District and IMX-1 Industrial-Commercial Mixed Use District.

5. **VII. Government Permits and Approvals Required**

This section of the FEA should disclose that the applicant will need to submit a subdivision application to the DPP following approval of the zone change and state land use district boundary amendment processes.

6. **IX. Community Meetings and Correspondence**

The last sentence on Page 88 of the DEA refers to Appendix XII-Community Meetings and Correspondence. This reference should be corrected to Appendix XIII.

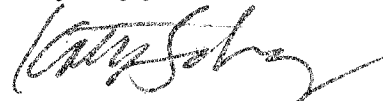
Chapter IX should provide a listing of the issues, questions, and concerns raised in the community meetings, and either provide a response to each item or indicate where in the body of the FEA a response is provided.

7. **Appendix XIII Community Meetings and Correspondence**

Appendix XIII of the FEA should include a copy of the minutes from the July 12, 2007 Ewa Neighborhood Board meeting detailing the presentation of the project and the subsequent discussion.

Should you have any questions, please contact Tim Hata of our staff at 768-8043.

Very truly yours,



Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:js

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231
FAX. (808) 988-1140
E-Mail: kkurahashi@hawaii.rr.com

April 22, 2008

Mr. Henry Eng, FAICP, Director
Department of Planning and Permitting
City and County of Honolulu
650 S. King Street, 7th Floor
Honolulu, Hawaii 96813

Attention: Mr. Tim Hata, Staff Planner

**Subject: Draft Environmental Assessment (EA) for the Proposed Ewa
Industrial Park - Tax Map Key: 2-6-024: 70 and 71**

Dear Mr. Eng:

Thank you for your comments on the subject Draft Environmental
Assessment (DEA) dated November 2, 2007 for the proposed Ewa Industrial Park.

The following responds to your comments:

1. General Information

- a. We will revise Exhibit 1 and all applicable maps in the Final EA to reflect the correct zoning designation.
- b. We will revise Section II.J Page 4 in the Final EA to state:
"PIM #013 depicts future expansion of the Honouliuli WWTP.

2. III. Description of Proposed Action

Section A "General Description" should be revised in the following manner:

- a. The first paragraph on Page 12....emergency access driveway.

The applicant understands that the State Department of Transportation (DOT) is concerned about driveways crossing the OR&L right-of-way. Based on discussions with staff at DOT, they prefer no new access crossing the OR&L right-of-way. They would consider relocating an existing access crossing the OR&L right-of-way (Phillipine Sea Road) to our property. The applicant plans at this time to eliminate the emergency access to Renton Road near Haakai Street.

b. Chapter 205, Hawaii Revised Statutes, Land Use Commission

In the Final EA we will expand our discussion regarding Chapter 205 State Land Use Commission by explaining that the State's Urban District does permit uses such as an industrial subdivision or industrial park development. We will also explain why Phase II of the proposed project is not in conformance with the intent of the "Agricultural" district and why Phase II needs a State Land Use District Boundary Amendment.

c. City and County of Honolulu General Plan

We will include a new section in the Final EA that will discuss how the proposed project conforms to the objectives and policies of the City's General Plan. We will also correct our statement to reflect that the project site is in the Urban Fringe area of Ewa rather than Ewa's "second city" as mention in Page 12 of the Draft EA.

d. Ewa Development Plan

In the Final EA, we will expand Section III A.5.b to provide a comprehensive discussion about how the proposed project conforms to Ewa's long-range vision, and applicable land use policies, principles, and guidelines.

We will correct the statement in Page 14 of the Draft EA (b. Ewa Development Plan) to read: "The Ewa Development Plan Urban Land Use Map is a conceptual plan that provides a vision on land uses. The vision for this general area is for industrial use, but is not site specific. The proposed development is consistent with the vision of the Ewa Development Plan."

The applicant, based on discussions with the State Department of Transportation (DOT), the State Land Use Commission Boundary Amendment Decision and Order for a portion of the subject property, and previous Unilateral Agreements in the Ewa area, including one for the adjacent property (enclosed), agrees to provide a 15-foot buffer area between the OR&L right-of-way and our security wall/fence. This will provide ample space for a possible bikeway easement for the OR&L right-of-way and additional area for landscaping. The Ewa Industrial Park development plans to provide a 15-foot setback buffer area for possible bikeway easement and/or landscape buffer outside of a security wall/fence and an additional 25-foot setback inside of the security wall/fence that will be used for parking (no structures). The 40-foot setback for structures would be consistent with the Ewa zoning ordinances described in the enclosure. We have enclosed an email received from DOT and other information about the proposed bikeway planned by DOT. The enclosure provides additional justification for the 40-foot setback for structures. There will be opportunities for pedestrian access from the project site to the Pearl Harbor Historic Trail (PHHT) within the OR&L Railroad right-of-way.

Based on recent discussions with the Department of Environmental Services the expansion of the Wastewater Treatment Plant (WWPT) can be accommodated with the acquisition of a portion of the project site (the existing sewer easement on the property) and assistance from the applicant in

allowing drainage from the WWTP to flow through the property. This coupled with plans to seek expansion over federally owned property at Kalaeloa will provide for the future expansion needs of the WWTP.

The Final EA will include a discussion about the relationship between the Industrial Centers policies in the Ewa Development Plan, Section 3.7.3, compliance with these policies, and the proposed zoning, to include the following:

1. **“Need for an additional sixty acres**”

As discussed earlier, based on recent discussions with the Department of Environmental Services the expansion of the Wastewater Treatment Plant (WWPT) can be accommodated with the acquisition of a portion of the project site (the existing sewer easement on the property) and assistance from the applicant in allowing drainage from the WWTP to flow through the property. This coupled with plans to seek expansion over federally owned property at Kalaeloa will provide for the future expansion needs of the WWTP.

2. **“Principles regarding appropriate scale (Ewa Development Plan, Page 3-75)”**

In the design of the proposed industrial park the applicant was sensitive to the character and culture of the surrounding community and designed the park buildings and open space to reflect plantation style buildings. The typical architecture of the industrial buildings in the proposed Ewa Industrial Park will be a one or two-story plantation style building in earth tone colors with green metal pitched roofs and canopies surrounded by landscaping and shade trees. All service and loading areas will be interior screened spaces and all parking

areas screened by walls, green slatted fences and landscaping with parking area lighting projecting downward away from adjacent views and residences.

3 **“Principles regarding Environmental Compatibility (Ewa Development Plan, Page 3-76)**

The 48.395 acre property is planned for development with light industrial uses to include light manufacturing, warehousing, distribution, and possibly a self-storage facility. The project is also expected to include a small amount of accessory retail space such as a convenience store. Strict adherence to the CC&R's, the covenants and development regulations within the development, will limit and control the hours of operation and uses within the proposed development. Through the CC&R's the applicant will prohibit owners/tenants from operating petroleum processing plants, explosives and chemical manufacturing or storage plants, agricultural processing plants, salvage yards, waste disposal plants, composting plants, recycling plants and demolition plants.

The Ewa Industrial Park development will incorporate mechanical equipment that is typical for commercial buildings and industrial park lands. Noise from this equipment must meet the State DOH maximum permissible noise limits at the property line. For industrial areas adjacent to other industrial, commercial and residential areas, the noise limit is 70 dBA during the day and night.

4. **“Honouliuli Industrial Area Guidelines regarding Building Height and Mass (Ewa Development Plan - Page 3-77)”**

The proposed industrial development will not affect any important view planes in the Ewa area, and when re-zoned and developed will not exceed the 60-foot height limit in the I-2 Intensive Industrial District zoning designation.

5. **“Honouliuli Industrial Area Guidelines regarding Landscape Treatment (Ewa Development Plan - Page 3-78”.**

The project area will be landscaped and will include a 6-foot high, 8-inch thick, tilt-up concrete wall surrounding a portion of the property. The exterior side concrete walls will be covered with bougainvillea, natal plums or creeping fig to minimize the threat of graffiti and to enhance and soften the visual appearance of the solid walls on the surrounding community.

The Final EA will show how the proposed project will comply with the Ewa Development Plan, Section 4.1.7, Comprehensive Roadway Network, as follows:

The Traffic Impact Assessment Report, Executive Summary states in part..... “Project access to Phase 1 is proposed via a Main Driveway connection to Geiger Road at the eastern boundary of the site. A Right-in/Right-out driveway connection to Geiger Road is proposed about 200 feet west of the Main Driveway. The Main Driveway would be located about 500 feet east of the planned Coral Creek Road A connection to Geiger Road opposite the Honouliuli WWTP east driveway.”

It further states: “The development of the western Phase 2 portion of the Project site would provide additional Project driveway connections to Roosevelt Avenue (access 2) about 500 feet east of Philippine Sea

Street and to Renton Road (Access 3) near Haakai Street.”

As mentioned earlier, the applicant understands that the State Department of Transportation (DOT) is concerned about driveways crossing the OR&L right-of-way. Based on discussions with staff at DOT, they prefer no new access crossing the OR&L right-of-way. They would consider relocating an existing access crossing the OR&L right-of-way (Phillipine Sea Road) to our property. The applicant plans at this time to eliminate the emergency access to Renton Road near Haakai Street.

e. Public Infrastructure Maps

The discussion on the Public Infrastructure Map will be expanded to discuss the planned expansion of the WWTP and current plans for expansion as discussed with staff at Environmental Services Department.

f. Land Use Ordinance (LUO)

The Final EA will clarify that although the applicant plans to restrict certain uses (through covenants, conditions and restrictions - CC&R's) with the potential for significant impact from the proposed industrial park, this is not an industrial park that will operate under the permitted uses of the I-1 Limited Industrial District. The applicant is requesting uses permitted under the I-2 Intensive Industrial District. The applicant will further discuss the purpose and intent of both the I-1 and I-2 Industrial Districts and whether the I-1 District can accommodate the proposed project.

g. Public Services

The Final EA will disclose the Honolulu Fire Department's requirements in the appropriate sections of the Final EA and will disclose how the applicant will comply with the requirements of the fire code.

3. Timing of Roadway Improvements

The FEA will discuss the timing of the proposed project and its roadway improvements in conjunction with planned roadway improvements in the vicinity of the project. The Traffic Impact Assessment Report noted the following planned roadway projects expected to be completed by 2009:

- a. Widening of Geiger Road to four lanes between the Kapolei Parkway and the Honouliuli Wastewater Treatment Plant.
- b. Completion of Kapolei Parkway from Ewa Beach to the City of Kapolei.
- c. Widening of Fort Weaver Road to six lanes from the end of the existing six-lane section near St. Francis Hospital to 900 fee makai of the Geiger Road intersection.
- d. Construction of the initial Phase 1 three-lane North-South Road and the interchange with the H-1 Freeway.
- e. Construction of the Coral Creek Collector Road A which intersects Geiger Road opposite the Honouliuli Wastewater Treatment Plant.

The timing for these roadway improvements are based on discussions that the traffic consultant had with City and State agencies.

As mentioned earlier, the applicant understands that the State Department of Transportation (DOT) is concerned about driveways crossing the OR&L right-of-way. Based on discussions with staff at DOT, they prefer no new

access crossing the OR&L right-of-way. They would consider relocating an existing access crossing the OR&L right-of-way (Phillipine Sea Road) to our property. The applicant plans at this time to eliminate the emergency access to Renton Road near Haakai Street.

4. **V. Major Impacts and Alternatives Considered**

This section will be expanded to include a discussion of two more zoning alternatives, the I-1 Limited Industrial District and the IMX-1 Industrial-Commercial Mixed Use District.

5. **VII. Government Permits and Approvals Required**

This section of the Final EA will disclose that the applicant may need to submit a subdivision application to DPP following approval of the zone change and state land use district boundary amendment process. The applicant is considering creating an industrial lot CPR (condominium property regime) which would eliminate the requirement to create individual subdivided industrial lots.

6. **IX. Community Meetings and Correspondence**

The last sentence of Page 88 will be corrected to reference the applicable Appendix for Community Meetings and Correspondence. Chapter IX will be expanded to list the issues, questions and concerns raised in the community meetings, based on minutes of the meetings and provide a response to each item or indicate where in the body of the FEA the response can be found.

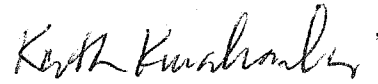
7. **Appendix XIII. Community Meetings and Correspondence**

Appendix XIII of the FEA will include a copy of the minutes from the July 12, 2007 and October 11, 2007 Ewa Neighborhood Board meetings detailing the presentation of the project and the subsequent discussion and the vote in support of the proposed Ewa Industrial Park Development approved at the October 11, 2007 meeting..

Mr. Henry Eng, FAICP, Director
Page 10

Again, we thank you for your review of our Draft EA. Your comments and our response will be included in the Final EA.

Very truly yours,



Keith Kurahashi

cc: Ewa Industrial Park, LLC

EWA INDUSTRIAL PARK OR&L RIGHT-OF-WAY SETBACK

1. Ewa Industrial Park, State Land Use Boundary Amendment
Docket No. A-88-627

Phase I of the proposed Ewa Industrial Park was approved for a change from the Agricultural District to the Urban District by Docket No. A-88-627.

Condition No. 19 of this Docket stated that "Petitioner shall establish a forty (40) foot setback along the existing railroad right-of-way in a manner compatible with City Ordinance No. 84-94."

Ordinance No. 84-94 Condition No. 9 stated that "The 40-foot railroad right-of-way owned by the State of Hawaii shall be respected. Projects located adjacent to this right-of-way shall be designed in a manner compatible with its use for future transportation (pedestrian, bike and/or public transit). Structures shall be set back a minimum of 40 feet from this right-of-way, unless legislation is adopted which sets a lesser or greater setback requirement. If a greater setback is required, it will apply prospectively."

5. Ewa Development Plan

Section 3.4.3.1 OR&L Historic Railway

.....

Adaptive Reuse

- Use of the railroad for historic theme rides should be encouraged.
- There should also be a parallel paved bikeway along the length of the rail route, either within or adjacent to the right-of-way. The bikeway should be provided even in those sections where the railroad itself is not operational.

The State Department of Transportation (DOT) has determined that the proposed bikeway will be provided within the OR&L right-of-way where possible. They have a worst case scenario in which, if the railroad track is centered in the right-of-way they will need a 5-foot easement for the bikeway and would like to have an additional 10 feet as a further buffer/landscape area for a total of 15 feet.

Adjacent Uses

- New development should be set back a minimum of 50 feet on either side of the OR& L right-of-way, unless it is directly related to the operation of the railroad, or is consistent with the use of the right-of-way for open space and bikeway purposes in stretches where railroad operation is not feasible, or is otherwise specified in existing land use approvals.

.....

*The Ewa Development Plan indicates that development **should** be set back a minimum of 50 feet from the railroad right-of-way. It does not **require or mandate** a 50-foot setback. It further supports a modified setback if otherwise specified in existing land use approvals. This is the case with Phase I of the Ewa Industrial Park and the adjacent and other properties to the east. It further allows for uses directly related to the operation of the railroad, which could include parking. As such, the parking use planned within the applicant's proposed 40-foot setback would be compatible with the OR&L right-of-way.*

3. Previous Zoning Ordinances

In the past, Ordinances in the Ewa area consistently required a setback for structures (with one exception), as follows:

Ordinance No. 84-94

About 200 acres Ewa Gentry: "Structures shall be setback a minimum of 40 feet from this right-of-way..."

Ordinance No. 86-09
640 acres Ko Olina:

“...structures shall be set back a minimum of 40 feet from this right-of-way...”

Ordinance No. 94-57
486 acres Ewa Gentry:

“...provided that any and all structures shall be set back a minimum of forty (40) feet from this right-of-way...”

Ordinance No. O3-02
2.0 acre and 1.43 acre
sites in Ko Olina:

“All conditions associated with Ordinance 86-09 shall remain in effect, as applicable to the land, unless modified by these conditions.”

See above for Ordinance No. 86-09.

The applicant is aware of only one exception, which required a 50-foot open space buffer:

Ordinance No. 00-55
35.197 acres in Kapolei:

“...shall establish and maintain a fifty (50) foot open space buffer along the southern property boundary next to the OR&L right-of-way.”

Based on these setback requirements, parking and other non-structural improvements would be allowed within the 40-foot setback in four of the five Ordinances listed above.

Private parking areas could be considered consistent and compatible with the use of the right-of-way for open space and bikeway purposes, because parking related to the operation of the railroad would be an allowable use.

The applicant for the Ewa Industrial Park development plans to provide a 15-foot setback/buffer area for possible bikeway easement and/or landscape buffer outside of a security wall/fence and an additional 25-foot setback inside of the security wall/fence that will be used for parking, no structures. The 40-foot setback for structures would be consistent with for of the Ewa zoning ordinances listed previously.

Keith Kurahashi

From: Douglas.Meller@hawaii.gov
Sent: Monday, April 21, 2008 9:34 AM
To: Milton.Oka@hawaii.gov
Cc: kkurahashi@hawaii.rr.com; Robert.Sun@hawaii.gov; Kelly.JH.Okumura@hawaii.gov
Subject: Re: Project adjacent to State's 40-foot former OR&L right-of-way

Just as with the Kapolei Costco, my advice is to ask for a 15' easement in favor of DOT to allow DOT to construct and maintain the leeward bikeway. We don't have to use the easement. If it turns out we don't use part or all of the easement, we could quitclaim (not sure this is the correct word) the unused part back to the property owner.

DPP would treat the property within the easement as part of the developable lot for purpose of figuring out the permissible floor area ratio of private buildings which could be constructed on the lot. The property owner doesn't lose value. Another advantage of an easement is that if DOT does not use it, DOT would not have to maintain it. The easement also would reserve space in which a property owner might (with DOT permission) install and maintain amenities and landscaping that would not be provided as part of the leeward bikeway.

Milton
Oka/HWY/HIDOT

04/18/2008 03:15
PM

To

Douglas Meller/HWY/HIDOT@HIDOT

cc

Robert Sun/HWY/HIDOT@HIDOT,
kkurahashi@hawaii.rr.com

Subject

Project adjacent to State's 40-foot
former OR&L right-of-way

Doug,

I had a conversation this afternoon with Mr. Keith Kurahashi of Kusao and Kurahashi Inc. regarding their project which is located makai and adjacent to the former OR&L right-of-way. We talked about how much land should be set aside in case the Leeward Bikeway project does not fit within the 40-foot right-of-way width.

At this time we do not know exactly where the railroad tracks are located relative to the boundary lines of the right-of-way. We should have that information by early 2009 but for now since we do not have that information, the conservative approach is to consider the different scenarios that could occur. If the railroad tracks are located on the makai side of the right-of-way, the bikepath will most likely be built mauka of the tracks and should have no impact on the adjacent project. If the railroad tracks are located on the mauka side of the right-of-way, the bikepath will most likely be on the makai side of the tracks and will most likely fit within the 40-foot former OR&L width without acquiring additional land. The worst case scenario is if the railroad tracks are located in the center of the right-of-way. In that case, the State would need to have 25 foot width for the bikepath (10-foot paved bikepath with 2-foot unpaved shoulder and a 13-foot clearance from the centerline of the tracks to the edge of the bikepath). In this scenario, the State would need an additional 5 feet outside of the 40-foot right-of-way.

Mr. Keith Kurahashi and I agreed that 5 feet is a reasonable width to set aside for Leeward Bikeway. This is the width needed to construct the bikepath. If additional right-of-way is necessary for other issues, please let me know. Also, would this be an easement or would the State purchase the land? I'm assuming that if the bikepath was built within the additional 5 foot width, the land would need to be purchased. Please confirm.

Mahalo,
Milton

Oahu Notices

AUGUST 23, 2000

Public Challenge

Deadline: September 22, 2000
Status: FEA/FONSI issued, project may proceed.
Permits
Required: SSV, NPDES

The City & County of Honolulu, Department of Design and Construction proposes to provide sewer service to the Malae area of Kane'ohē Bay through the Kane'ohē Bay Sewers, Improvement District project. The project will expand the existing City sewer system to include 69 properties which are currently utilizing private, individual wastewater disposal systems such as cesspools and septic tanks. A signature petition received by the former Department of Wastewater Management in July 1997 indicated that many of the area residents are in favor of the project since it will provide a solution to many chronic sanitation problems. In addition, the project will provide an overall environmental benefit by decreasing the degradation of coastal waters and aquifers attributable to individual wastewater disposal systems.

The project will involve the installation of approximately 4,500 feet of 6-inch and 8-inch gravity sewer lines at depths ranging from 5 to 25 feet deep. The sewer lines will be installed by trenching, along the Kane'ohē Bay shoreline primarily within sewer easements located in private properties. A 4-inch relief force main will be installed in the same trench as the proposed gravity lines south of the wastewater pump station.

Since the project will be partially constructed within the Shoreline Setback Area (SSA), a Shoreline Setback Variance will be required for the construction. In addition, use within the SSA triggers the requirement for an Environmental Assessment under Subchapter 10, Department of Health, Chapter 200 of Title 11, Hawai'i Administrative Rules and Chapter 343, Hawai'i Revised Statutes.



(7) Leeward Bikeway OR&L Easement

District: 'Ewa, Wai'anae
TMK: various
Applicant: Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, Hawai'i 96813
Contact: Ken Tatsuguchi (692-7578),
Jonathan Winn (692-7579)

Approving Agency/Accepting

Authority: Same as above
Consultant: Earth Tech, Inc.
700 Bishop St., Suite 900
Honolulu, Hawai'i 96813
Contact: Karl Bromwell (523-8874)

Public Challenge

Deadline: September 22, 2000
Status: FEA/FONSI issued, project may proceed.
Permits Sec. 404, Sec. 401 WQC, SCAP, CDUA,
Required: SMA, CZM, SSV, SHPD clearance

The purpose of the final environmental assessment (FEA) is to analyze the potential environmental consequences of the proposed State Department of Transportation Highways Division (DOT-HD) Leeward Bikeway project activities, to determine if there would be significant short term, long-term and/or cumulative impacts on the human, natural and historic environments. This project is in compliance with NEPA, Department of Defense (DOD) Directive 6050.1, Chapter 343 HRS and HAR 11-200.

DOT-HD is required to build the proposed Leeward Bikeway as part of the deed transfer from the Federal DOT. A 10-foot wide asphalt bikeway with 2-foot graded shoulders will share the 40-foot right-of-way of the former OR&L railroad (that is now used by the Hawaiian Railway Society) from Waipi'o Access Road through the 'Ewa Plain to the Wai'anae Coast at Lualualei Naval Road. The proposed project also includes construction of bridges, retaining walls, railroad crossings and culverts. Federal and state funds will be used to develop the proposed bikeway.

Alternatives Considered: The "no action" alternative would be to accept the transfer of land and not build a bikeway and only utilize the right-of-way with Hawaiian Railway Society tours. This alternative would result in the forfeiture of the parcel back to the federal government and was not selected. Other construction alternatives pertaining to the width of the bikeway, placement of barriers and alignment were also considered.

Implementation of the project would not cause anticipated significant long-term or cumulative impacts on human, natural or historic environments. However, potential short-term construction related impacts along sensitive sections would cause impacts to vegetation, waterbird activity, water quality, visual resources, noise and air quality. Permitting procedures and best management plans will be performed to mitigate effects. By implementing the proposed project positive effects in recreational opportunities, alternative transportation and increased security and maintenance will be experienced in a previously unused and open right-of-way.

Minutes of the
Oahu Metropolitan Planning Organization

POLICY COMMITTEE

Wednesday, July 20, 2005, 1:00 p.m.
City Council Committee Room
Room 205, Honolulu Hale, 530 South King Street, Honolulu, Hawaii

Members Present:

Councilmember Nestor Garcia, Chair (FY 2005)	Representative Mark Moses
Councilmember Todd Apo, Vice Chair	Representative Joseph Souki
Councilmember Romy Cachola	Senator Will Espero
Councilmember Charles Djou	Senator Lorraine Inouye
Councilmember Ann Kobayashi	Senator Brian Kanno
Councilmember Gary Okino	Rodney Haraga, DOT Director

Members Absent: Representative Marilyn Lee, Chair (FY 2006), Edward Hirata (DTS Director)

Invited Guest(s) Present: Mary Lou Kobayashi (for Laura Thielen, DBEDT-OP)

Guests Present:

Representative Rida Cabanilla	Scott Snider (HBL (CAC))
Senator Carol Fukunaga	Alan Okimoto (HI Transportation Assn. (CAC))
Charmaine Doran (Clmbr Apo staff)	Paul Schwind (Land Use Research Found. (CAC))
Dennis Galolo (Clmbr Cachola staff)	Charles Carole (NB #10 (CAC, Vice Chair))
Francisco Figueiredo (Clmbr Djou staff)	Larry Baird (NB #18 (CAC))
Robert Sato (Clmbr Okino staff)	Daniel Neyer (NB #26 (CAC))
Tom Berg (Rep. Cabanilla staff)	Richard Kane (Pacific Resource Partnership (CAC))
Maigee Chang (Sen L. Inouye staff)	David Aki (Teamsters Local 996 (CAC))
Patrick Tom (DOT)	Michael Costa (Teamsters Local 996 (CAC))
Julia Tsumoto (DOT)	Frank Genadio (Com. for Balanced Trans. (CAC))
Scot Urada (DOT)	Mike Kido (Estate of James Campbell)
Ron Tsuzuki (DOT)	David Mueller (Hawaiian Railway Society)
Alan Suwa (Castle & Cooke (CAC))	Donna Goth (Kapolei Property Dev./Aina Nui Corp.)
Rae Gee (DTS)	Alan Gano (Leeward Infrastructure Coalition)
Toru Hamayasu (DTS (TAC, Chair))	L. Gary Bautista (NB #23)
Jodi Chew (FHWA)	Kevin Belanger (South Central Planning (Louisiana))
Bob McGraw (Amer. Plng. Assn. (CAC))	Doug Eisinger (UH) and ±15 students
Dale Evans (Charley's Taxi (CAC))	David Pagan
Charles Rosa-Coleman (HBL (CAC))	

OMPO Staff Present: Gordon Lum (Executive Director), Lori Arakaki, Laureen Brennan, Pamela Toyooka

Chair Nestor Garcia called the meeting to order at 1:02 p.m. A quorum was present.

I. ELECTION OF FY 2006 CHAIR AND VICE CHAIR

Representative Mark Moses nominated Representative Marilyn Lee for the office of Chair for fiscal year (FY) 2006. Representative Joseph Souki seconded the nomination. There being no other nominations, Representative Lee was elected Chair by acclamation.

It was noted that Representative Lee was excused from today's meeting because she was attending her Mother's funeral services.

Councilmember Charles Djou nominated Councilmember Todd Apo for the office of Vice Chair for FY 2006.

Councilmember Gary Okino seconded the nomination. There being no other nominations, Councilmember Apo was elected Vice Chair by acclamation.

In the absence of Chair Lee, Chair Garcia passed the gavel to Vice Chair Apo.

On behalf of the members, Chair Apo read and presented a resolution to outgoing Chair Garcia. Following the presentation, Councilmember Garcia left the meeting.

II. MINUTES OF THE MAY 26, 2005 MEETING

Representative Moses stated that the minutes did not contain anything regarding the \$40,000 for railway ties. Chair Apo noted that, since the \$40,000 was not discussed at the May 26, 2005 meeting, it would not be included in the minutes.

Chair Apo asked if there were any objections to not including this in the minutes. There being no objections, the May 29, 2005 minutes were accepted as circulated.

III. AMENDMENT #12 TO THE FYs 2004-2006 TIP

Gordon Lum gave a PowerPoint presentation on Amendment #12 to the FYs 2004-2006 Transportation Improvement Program (TIP). Mr. Lum went over the projects that would be deleted, the projects that would be added, the technical reviews the amendment went through, and the public comments received (none).

[Senator Lorraine Inouye arrived at 1:10 p.m., during Mr. Lum's presentation.]

Representative Moses moved and Senator Inouye seconded that Amendment #12 to the FYs 2004-2006 TIP be approved.

Testimony

Tom Berg, Ewa resident

Mr. Berg requested that Phase II of (Leeward Bikeway) be included in the FYs 2004-2006 TIP. Mr. Berg also requested that, if the \$40,000 in federal funds for project S83 (Oahu Railway and Land (OR&L), Repair Tracks, Fort Weaver Road to Kahe Point) will not be released by September 30, 2005, the project be included in the FYs 2006-2008 TIP.

Charles Rosa-Coleman, Executive Director, Hawaii Bicycling League (HBL) (CAC)

Mr. Rosa-Coleman stated that the minor right-of-way issues for the Leeward Bikeway project could be addressed through minor adjustments to the bikepath infrastructure. Therefore, the HBL requests that project S65 be kept in the TIP.

[Senator Brian Kanno arrived at 1:14 p.m.]

Scott Snider, HBL (CAC), Central Oahu resident

Mr. Snider testified in support of project S65. He stated that he commutes to Downtown via bicycle out of necessity, and having the bikeway is a safety issue.

Representative Rida Cabanilla

Representative Cabanilla testified in opposition of the deletion of Phase II of the Leeward Bikeway project. The bikeway would improve the quality of life for the entire Ewa Beach neighborhood. Representative Cabanilla also requested the release of \$40,000 in federal funds for project S83.

Questions and Answers

In response to Representative Moses, Department of Transportation (DOT) Director Rodney Haraga stated that the design consultant for the Leeward Bikeway project is expected to be on board by the end of July. Construction is anticipated to be in FY 2008. Phase II will follow in the next TIP. Director Haraga stated that Phase I is ready-to-go; therefore, it is in the TIP. Phase II is not ready-to-go; therefore, it would not be included in the current TIP. Representative Moses stressed that the phases should be continuous, with no gap between the

completion of Phase I and the start of Phase II. Director Haraga stated that he strongly agreed with that statement.

Senator Will Espero asked if construction could be moved into FY 2007. Director Haraga responded that it could, depending on the design consultant's proposal. Director Haraga believed that the right-of-way issue could be resolved by the consultant. DOT will ask the design consultant for an expeditious handling of the project.

In response to Senator Espero, Ron Tsuzuki of DOT Highway Planning Branch stated that the bikeway is a high priority project; however, due to many staffing changes, getting the project ready-to-go has been a problem. Mr. Tsuzuki noted that DOT's former bicycle coordinator has been hired to work on procuring the consultant.

Both Mr. Lum and Mr. Tsuzuki stated that an amendment to the TIP could be done at anytime, should the project be ready for construction at an earlier date.

Having seen this project on the books since the late 1990s, Councilmember Okino stated his strong support for moving this project forward as soon as possible.

A vote was taken on the motion to approve Amendment #12 to the FYs 2004-2006 TIP. The motion carried unanimously.

IV. FYs 2006-2008 TIP

Mr. Lum gave a PowerPoint presentation on the FYs 2006-2008 TIP – including background information; technical reviews (including the Technical Advisory Committee recommendation and Intergovernmental Review comments); the public involvement process (including the Citizen Advisory Committee (CAC) Recommendations to the FYs 2006-2008 TIP and a summary of the public comments received); the results of technical evaluations (including technical analysis for consistency or compliance with the Oahu Regional Transportation Plan, Oahu Regional Intelligent Transportation System Architecture, and Title VI/Environmental Justice principles); the Congestion Management System evaluation and project rankings; and the transit criteria. Mr. Lum noted that two projects had been added to the project list as a result of the May 26, 2005 Policy Committee meeting: project S63 (Interstate Route H 1, Addition and Modification of Freeway Access, Makakilo Interchange to Palailai Interchange (Kapolei Interchange Complex)) and project C24 (Salt Lake Boulevard Widening, Phase 2B). Mr. Lum described the project evaluation criteria that was developed and applied to transit projects proposed in the TIP. He noted that the deadline to submit comments on the transit criteria is August 22, 2005.

Councilmember Djou moved and Senator Inouye seconded that the FYs 2006-2008 TIP be approved.

Testimony

Donna Goth, Kapolei Property Dev. LLC & Aina Nui Corp. (Estate of James Campbell (EJC))

Ms. Goth testified in support of the project S63 (Kapolei Interchange Complex).

David Mueller, Hawaiian Railway Society (HRS), Board of Directors

Mr. Mueller asked for assistance in getting the release of \$40,000 in federal funds for railroad ties to repair the tracks. Mr. Mueller also testified in support of the Leeward Bikeway project.

Director Haraga stated that Brennon Morioka is working on securing the \$40,000. The Governor still needs to sign the agreement.

In response to Senator Espero's question, Director Haraga assured him that the funds would not lapse. Senator Espero asked Director Haraga to report the progress of this effort back to the members.

Frank Genadio

Mr. Genadio testified in support of project C9 (Makakilo Drive Extension).

Senator Carol Fukunaga (on behalf of herself and Senator Fred Hemmings)

Senator Fukunaga advised the Committee that she and Senator Hemmings are actively pursuing a potential flyover solution at the Lunalilo on-ramp and Vineyard Boulevard off-ramp, in order to separate traffic exiting at the Vineyard off-ramp from the traffic entering at the Lunalilo on-ramp. They are in contact with the State DOT about this proposed project. Senator Fukunaga proposed an amendment to include such a project in the FYs 2006-2008 TIP after the TIP document has been adopted. She noted that project S14 (Interstate Route H-1, Lunalilo Street Off-Ramp and On-Ramp) is a temporary solution which installs popup poles in order to modify the weaving movement of traffic in that area. In response to Senator Espero, Senator Fukunaga stated that the 1995 estimate was \$32 million. She noted that, today, there may be other technologies that may also be appropriate; so they are open as to the type of technology to be used.

Tom Berg

Mr. Berg questioned why monies need to be spent for land acquisition, when the federal government gave a 40-foot wide right-of-way for the project S52 (Leeward Bikeway).

Paul Schwind, Land Use Research Foundation (CAC)

Mr. Schwind testified in support of the project S63. Mr. Schwind noted that, in addition to the funding by EJC, the Ewa impact fee funds are, in part, designated to cover some of the local match for this project.

Questions and Answers

In response to Councilmember Cachola, Toru Hamayasu of Department of Transportation Services (DTS) stated that the design phase of project C24 (Salt Lake Boulevard Widening, Phase 2B) will commence around FY 2007. Due to the complexity of the project, Department of Design and Construction (DDC) does not know how long the design will take to complete. Councilmember Cachola requested a projected timeline for the completion of design, so he can report back to the community. Mr. Hamayasu stated that he would request that from the DDC.

In response to Representative Moses, Mr. Hamayasu stated that the project C9 (Makakilo Drive Extension) is a priority project. Since the terrain will be a factor in how the area can be developed, it would be difficult to determine what to design until the planning and environmental disclosure is completed.

In response to Councilmember Okino, Director Haraga stated that design for project S18 (Interstate Route H-1 Widening, Eastbound, Waiiau Interchange to Halawa Interchange) will take at least a couple of years to complete. The impact on the neighboring community would be addressed in the environmental impact statement. Community meetings will be held in the Aiea and Pearl City areas to inform them of what will be done.

In response to Councilmember Ann Kobayashi, Director Haraga stated that project S14 would be kept in the TIP because it would result in a large amount of time savings. Director Haraga stated that Senator Fukunaga's proposal is a viable alternative; however, it is a long-term solution. It would need to be ready-to-go before it can be added to the TIP.

In response to Senator Espero, Mr. Tsuzuki stated that the OR&L tracks are not in the center of the right-of-way; it meanders within the 40-foot right-of-way. For safety reasons, there needs to be a setback – the edge of the bikeway needs to be so many feet away from the edge of the track.

In response to Councilmember Cachola, Mr. Tsuzuki stated that DOT is planning on working around the tracks, rather than moving them. The tracks are historic, so DOT would have to work with HRS and the State Historic Preservation office if it wanted to move them. Once the consultant works on the design and plan, DOT will have a better idea of how much land will be needed to be purchased. Director Haraga stated that DOT would let Councilmember Cachola know what the cost will be as soon as figures become available.

A vote was taken on the motion to approve the FYs 2006-2008 TIP. The motion was unanimously carried.

V. CAC MEMBERSHIP REQUEST

Mr. Lum stated that Castle and Cooke had attended the required number of meetings and requested membership

on the CAC.

Representative Moses moved and Senator Espero seconded that Castle and Cooke be appointed to the CAC. The motion was unanimously carried.

VI. RESPONSE TO PUBLIC'S LETTER ON PUBLIC INVOLVEMENT PROGRAM

Chair Apo noted that this agenda item was for discussion only and no action would be taken. Mr. Lum responded to Dale Evans' June 15, 2005 letter directed to the Policy Committee and the CAC. Mr. Lum stated that communications from the Department of the Attorney General, State Ethics Commission, and Office of Information Practices supported his position that Ms. Evans' charges were false and without merit. He added that it was the duty of the Legislature to provide public notice on legislative bills, the duty of the City Council to provide public notice on council bills, and that both bodies have provided the required public notice.

Ms. Evans continued to express her desire to have OMPO notify CAC member organizations about legislative and council bills affecting the transportation planning process.

Chair Apo stated that he heard Ms. Evans desire to provide as much public notice as possible, and acknowledged the difficulty in doing it. He added that OMPO can look at how this situation could be reasonably improved, but first needs to identify its purpose. In response to a question from Representative Moses, Chair Apo stated that it was not his intent to have OMPO notify people of all legislative transportation matters.

VII. OTHER BUSINESS

Senator Espero announced that there would be a meeting on the Super Ferry on July 28, 2005.

Chair Apo announced that Council Bill 40 would be heard by the joint Budget and Transportation Committee on August 2, 2005 at 9:30 a.m., and would be heard by the full Council on August 10, 2005.

In reference to the discussion (in item IV) about the historic railway tracks, Representative Moses stated that he had heard that the HRS had authorized the slight moving of railway tracks.

There being no other business, the meeting was adjourned at 2:25 p.m.

BEFORE THE LAND USE COMMISSION
OF THE STATE OF HAWAII

In the Matter of the Petition of)	DOCKET NO. A88-627
GENTRY DEVELOPMENT COMPANY)	
To Amend: the Agricultural Land)	GENTRY DEVELOPMENT COMPANY
Use District Boundary into the)	
Urban Land Use District for)	
Approximately 685 Acres at)	
Honouliuli, Ewa, Oahu, State of)	
Hawaii, Tax Map Key Nos.: 9-1-10:)	
Portion of 2 and Portion of 7;)	
9-1-12: Portion of 1, Portion of)	
5 and 30.)	

ORDER APPROVING STIPULATION TO AMEND
FINDINGS OF FACT, CONCLUSIONS OF
LAW, AND DECISION AND ORDER

Pursuant to Stipulation To Amend Findings of Fact, Conclusions of Law and Decision and Order Dated May 8, 1989, between Gentry Development Company, a Hawaii limited partnership (hereinafter "Petitioner"), the Office of State Planning, State of Hawaii (hereinafter "OSP"), the Department of General Planning, City and County of Honolulu (hereinafter "City"), and the Department of the Navy (hereinafter "Navy"), filed by Petitioner on June 13, 1989, to amend all tax map key number references which describe the subject property and to amend all references to the total approximate area of the subject property; and

The Land Use Commission, having considered said stipulation at its hearing of June 30, 1989, the records and files herein, and good cause appearing therefrom,

and evacuation plan for residents of the Property due to the Property's proximity to the Explosive Safety Hazard Zone at the West Loch Branch, Navy Magazine, Lualualei.

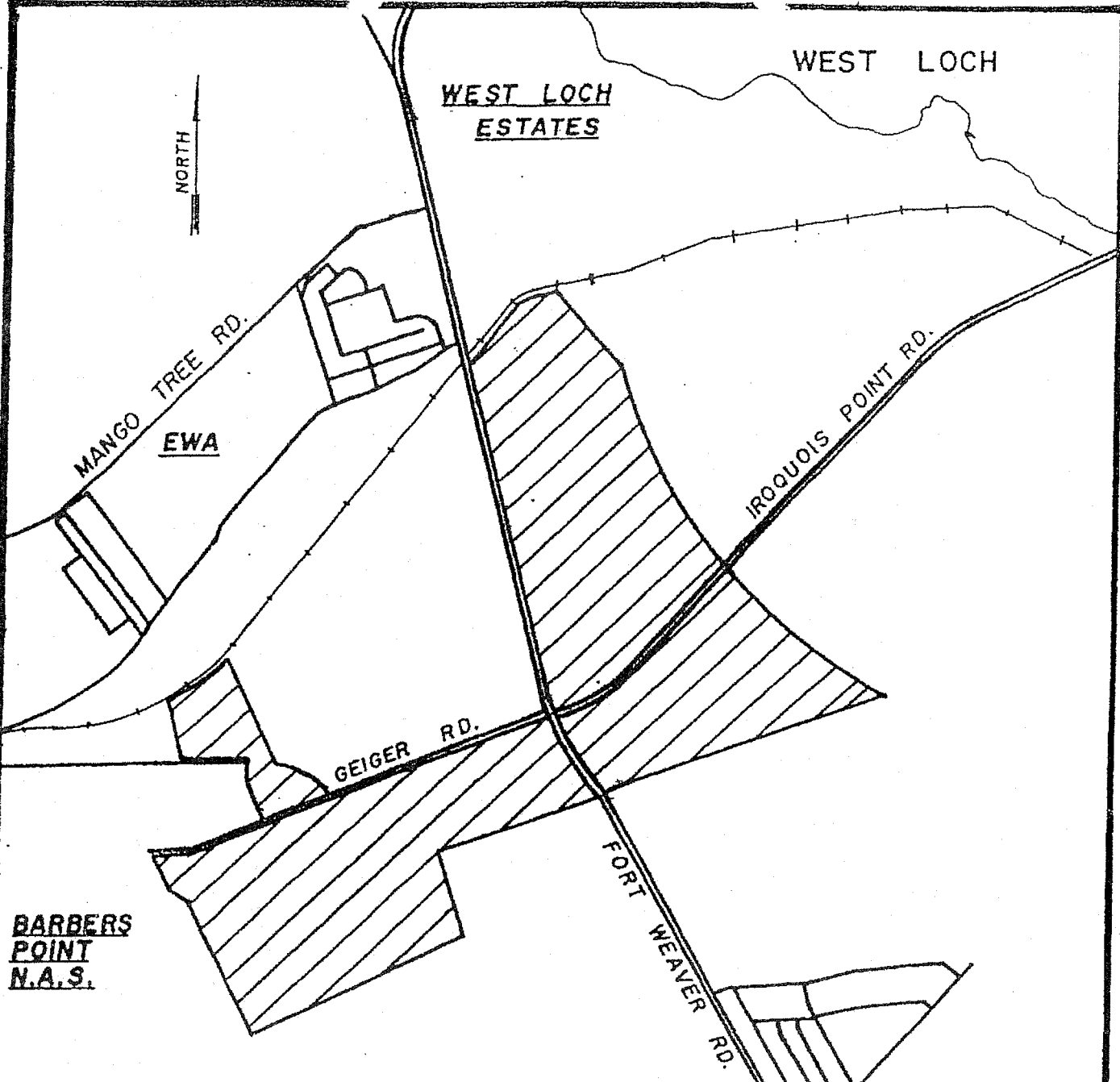
19. Petitioner shall establish a forty (40) foot setback along the existing railroad right-of-way in a manner compatible with City Ordinance No. 84-94.

20. Petitioner shall not place along Geiger or Iroquois Point Roads or at the intersection of any road with these two roadways any obstruction which would hinder aircraft towing along these two roadways in order to maintain an obstruction-free corridor 80 feet in width and 25 feet in height along these roadways.

21. Petitioner shall coordinate with the Department of the Navy to assure that any work in the vicinity will not damage or in any way limit access to utility, communication or fuel lines.

22. Petitioner shall construct no road which enters from the Property onto Geiger or Iroquois Pt. Roads within 200 feet of any Navy installation's boundary.

23. Petitioner shall install a fence or other structure along the eastern boundary of the Property to minimize residents' inadvertent entrance into the Explosives Safety Zone, which commences at the Property's eastern boundary, with the western boundary of Naval Magazine Lualualei West Loch Branch.




A 88-627 / GENTRY DEVELOPMENT CO.

TMK: 9-1-10: por 2, por 7
 9-1-12: por 1, por 5, 30

HONOLIULI, EWA, OAHU

SCALE: 1" = 2000' ±

 APPROVED AREA

(Ewa/ZD)
ORDINANCE NO. 84-94

BILL NO. 38 (1984)
(Draft No. 1)

A BILL FOR AN ORDINANCE TO REZONE A PARCEL OF LAND SITUATED AT EWA, OAHU, HAWAII, (AMENDING PORTION OF ZONING MAP NO. 12, EWA BEACH TO IROQUOIS POINT, ORDINANCE NO. 82-63).

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION I. One parcel of land situated at Ewa, Oahu, Hawaii, is hereby rezoned from AG-1 Restricted Agricultural to R-6 Residential, A-1 Apartment and P-1 Preservation Districts; and R-6 Residential and AG-1 Restricted Agricultural to B-1 Neighborhood Business Districts. The boundaries are shown on the map attached hereto, marked Exhibit "A" and by Tax Map Keys 9-1-12: Portion of 1, and 9-1-17: 46, 47, 48 and Portions of 4 and 49.

SECTION II. A Unilateral Agreement marked Exhibit "A" and by reference incorporated herein and made a part hereof.

SECTION III. This ordinance shall take effect upon its approval.

INTRODUCED BY:

Richard W. ...

DATE OF INTRODUCTION:

MARCH 14, 1984

Honolulu, Hawaii

APPROVED AS TO FORM
AND LEGALITY:

Jane H. Howell
Deputy Corporation Counsel

Approved this 26th day
of September, 1984.

Eileen R. Anderson
EILEEN R. ANDERSON, Mayor
City and County of Honolulu

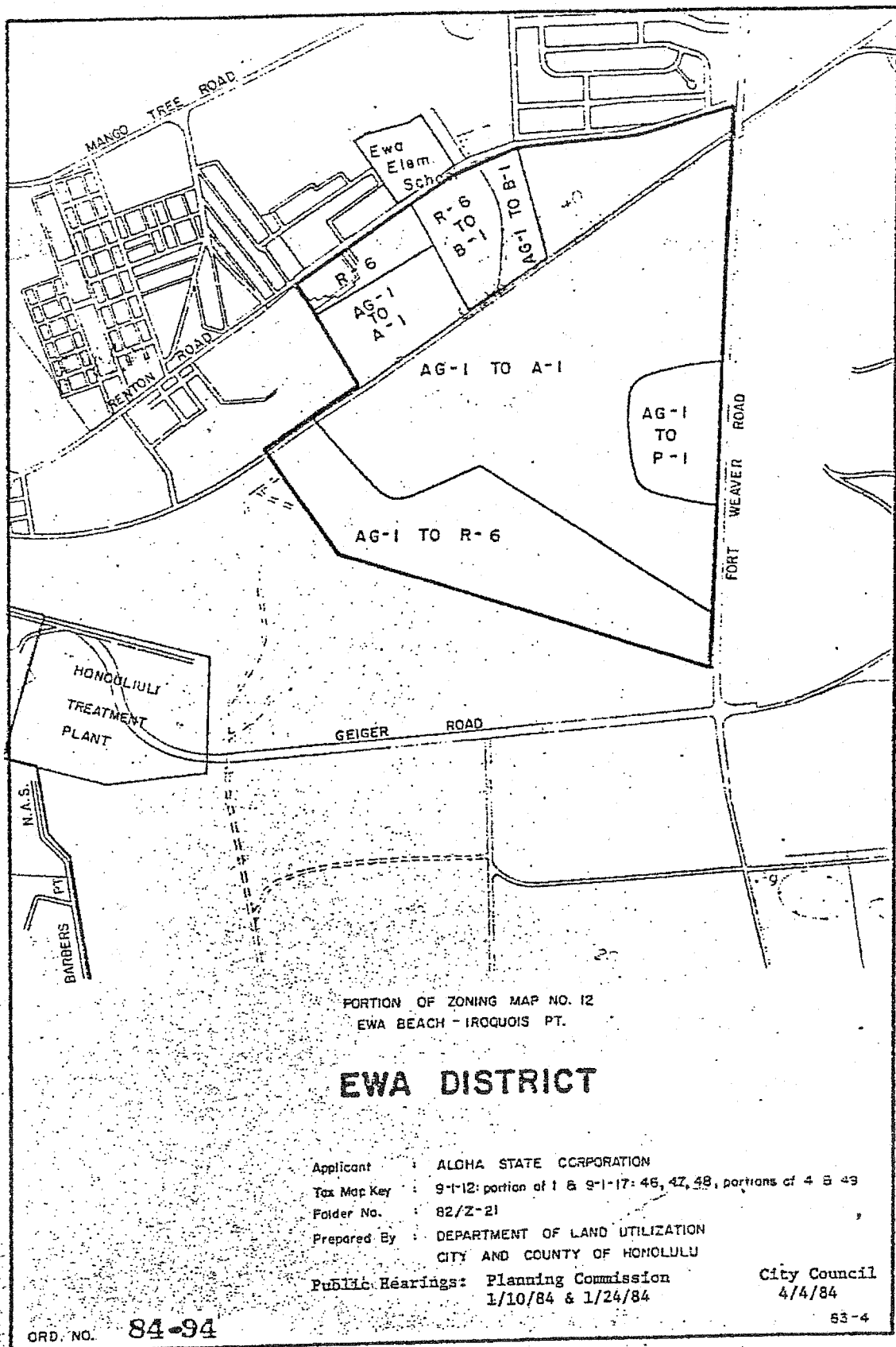
Councilmembers

(DLU 12.9.83)

84-94

(D-113/2-10-84)

84-94



PORTION OF ZONING MAP NO. 12
EWA BEACH - IROQUOIS PT.

EWA DISTRICT

Applicant : ALPHA STATE CORPORATION
 Tax Map Key : 9-1-12: portion of 1 & 9-1-17: 46, 47, 58, portions of 4 & 49
 Folder No. : 82/Z-21
 Prepared By : DEPARTMENT OF LAND UTILIZATION
 CITY AND COUNTY OF HONOLULU
 Public Hearings: Planning Commission
 1/10/84 & 1/24/84
 City Council
 4/4/84

ORD. NO. 84-94

53-4

EFF. DATE SEPTEMBER 26, 1984

EXHIBIT A

BILL 38

Costs for items (a) through (d) above shall be assessed to the the developers involved in a manner determined by themselves and approved by the City and State. the City and State will consider opportunities for full or partial public funding of the north-south roadway system as such funds may be available and compatible with island-wide priorities among projects competing for these funds, as established by the City and State.

9. The 40-foot railroad right-of-way owned by the State of Hawaii shall be respected. Projects located adjacent to this right-of-way shall be designed in a manner compatible with its use for future transportation (pedestrian, bike and/or public transit). Structures shall be set back a minimum of 40 feet from this right-of-way, unless legislation is adopted which sets a lesser or greater setback requirement. If a greater setback is required, it will apply prospectively.

10. An overall urban design plan for the Ewa Villages Special Area shall be submitted to the Department of Land Utilization for approval. In addition, at each phase of development as outlined on Exhibit C, the Declarant shall submit site plans and preliminary architectural drawings of the development to the Department of Land Utilization for review to insure that the Development Plan urban design objectives for the Ewa Villages Special Area are carried out, and that the development phases adhere to the urban design plan.

WHEREAS, the Declarant has agreed to execute this instrument pursuant to the provisions of said Ordinance No. 4300.

NOW, THEREFORE, Declarant hereby makes the following Declaration:

A. This Declaration is made pursuant to the

(Ewa/ZD)

ORDINANCE NO. 86-09

BILL NO. 135 (1985)
(Draft No. 1)

A BILL FOR AN ORDINANCE TO REZONE CERTAIN PARCELS OF LAND SITUATED AT EWA, OAHU, HAWAII (AMENDING PORTION OF ZONING MAP NO. 14, BARBERS POINT TO NANAKULI, ORDINANCE NO. 82-65).

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION I. Certain parcels of land situated at Ewa, Oahu, Hawaii, are hereby rezoned from AG-1 Restricted Agricultural District to A-1 Low-Density Apartment, A-2 Medium-Density Apartment, H-1 Resort Hotel, B-2 Community Business and P-1 Preservation Districts. The boundaries are shown on the map attached hereto, marked Exhibit "A" and by Tax Map Keys 9-1-14: Por. 2; 9-1-15: 3, 6, 7, 10, Por. 4; and 9-2-3: 2, 3, and 7.

SECTION II. A Unilateral Agreement marked Exhibit "B" and by reference incorporated herein and made a part hereof.

SECTION III. This ordinance shall take effect upon its approval.

INTRODUCED BY:

Rudolph P. ...
Tony Adams

DATE OF INTRODUCTION:

OCTOBER 9, 1985

Honolulu, Hawaii

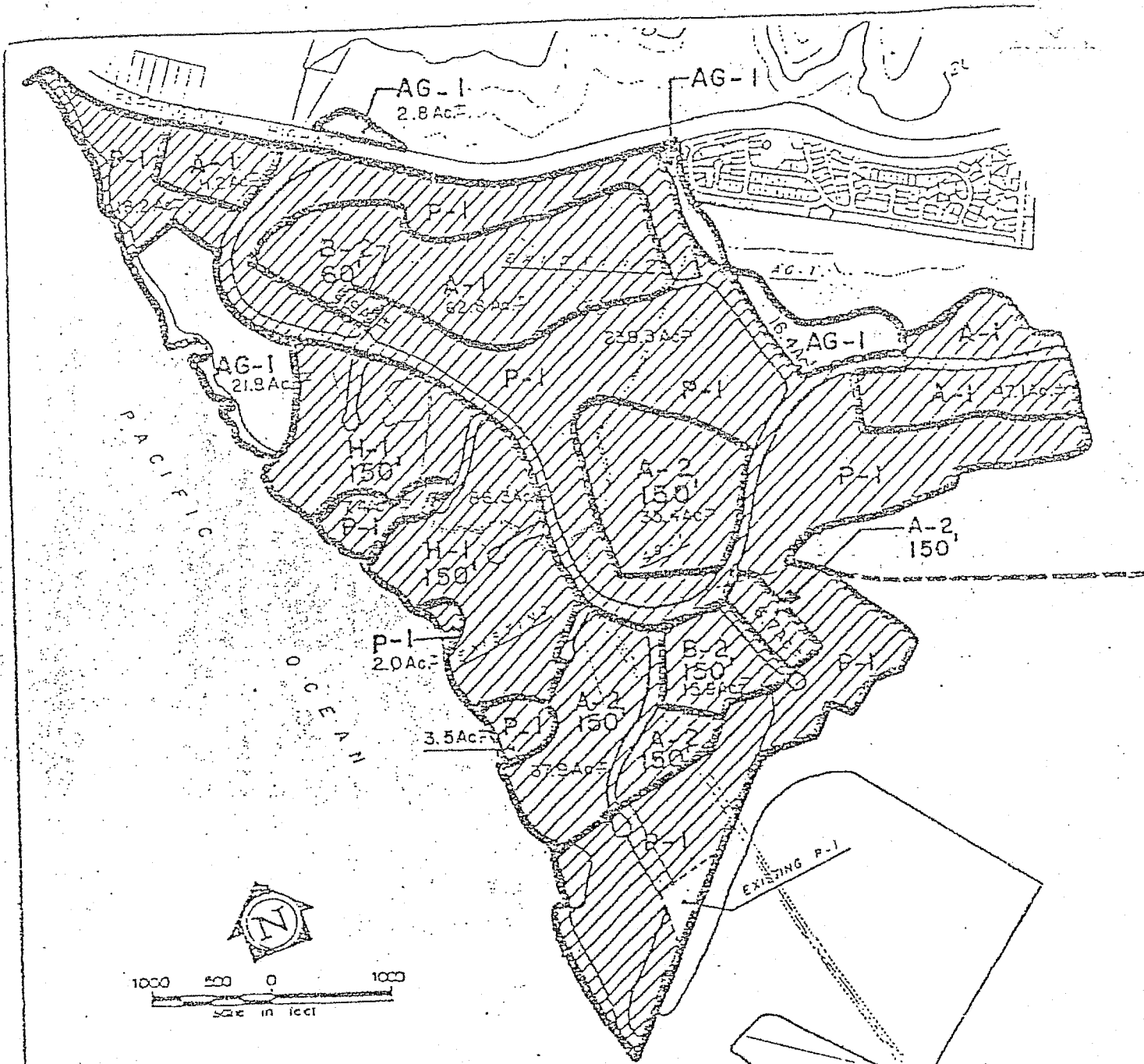
APPROVED AS TO FORM AND LEGALITY:

Jean H. Howell
Deputy Corporation Counsel

Approved this 11th day of March, 1986.

Frank F. Fasi
FRANK F. FASI, Mayor
City and County of Honolulu

Councilmembers



PORTION OF ZONING MAP NO. 14

BARBERS POINT TO NANAKULI

APPLICANT : West Beach Estates
 TAX MAP KEY : 9-1-14: por. 2; 9-1-15: 3,6,7,10, por. 4; 9-2-3: 2,3,7
 FOLDER NO : 85/Z-3
 PREPARED BY : Department of Land Utilization
 City and County of Honolulu
 PUBLIC HEARING: Planning Commission City Council
 Aug. 21, Sept. 4 & 11, 1985 1/13/86

ORD. NO. **86-69**

EFF. DATE: MARCH 11, 1986

EXHIBIT A

85-7

Bill 134 (1985)

approval of the Department of Land Utilization, provided that such structures shall not exceed 25 feet in height. The only structures permitted within the area 100 feet landward of the existing, certified shoreline and the water's edge of the man-made lagoons, shall be restroom facilities and showers, and these facilities shall be located adjacent to the public walkway.

c. For areas between 200 feet and 300 feet landward of the existing, certified shoreline and the water's edge of the man-made lagoons, there shall be a maximum building to land coverage ratio of ten percent (10%) of the land. The ten percent (10%) land coverage ratio shall be based on the area between 300 feet landward of the existing, certified shoreline and the water's edge of the man-made lagoons. An exception shall be made for the proposed beach club, located on Parcel 19, for which building to land coverage ratio may be up to twenty percent (20%), to be calculated as specified herein, with a height limit for said Parcel not to exceed 40 feet.

d. Structures located in the area between 200 feet and 300 feet landward of the existing, certified shoreline shall not exceed heights of 50 feet plus one foot for each one foot of setback beyond 200 feet.

e. For purposes of this paragraph, all references to the "water's edge of the man-made lagoons" refers to the mean sea level.

9. The railroad right-of-way shall be maintained as an open space corridor for future transportation (pedestrian, bike and/or public transit) use. With the exception of structures related to public transportation, structures shall be set back a minimum of 40 feet from this right-of-way unless legislation is adopted which sets a lesser or greater setback requirement.

ORDINANCE NO. 94-57

BILL NO. 15 (1994)

A BILL FOR AN ORDINANCE TO REZONE LAND SITUATED AT EWA, OAHU, HAWAII (AMENDING PORTION OF ZONING MAP NO. 12, EWA BEACH - IROQUOIS POINT, ORDINANCE NO. 86-114:

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION I. Land situated at Ewa, Oahu, Hawaii, hereinafter described, are hereby rezoned from AG-1 Restricted Agricultural District with a 25-foot height limit, AG-2 General Agricultural District with a 25-foot height limit, A-1 Low Density Apartment District with a 30-foot height limit, and R-5 Residential District with a 25-foot height limit to A-1 Low Density Apartment District with a 30-foot height limit, R-5 Residential District with a 25-foot height limit, and P-2 General Preservation District with a 25-foot height limit. The boundaries and area of said A-1 Low Density Apartment District, R-5 Residential District, and P-2 General Preservation District shall be described as shown on the map attached hereto, marked Exhibit "A" and made a part hereof, and further identified as Tax Map Keys 9-1-61: portions of 2, 7 & 8, 9-1-69: portion of 5 and portion of 6, and 9-1-10: portion of 2, 7, 17 and 18.

SECTION II. A Unilateral Agreement marked Exhibit "B" is by reference incorporated herein and made a part hereof.

- c. **Child-care facility.** If, after review, the Department of Human Resources (DHR) determines there is a need for a child-care facility to serve the area, the Declarant shall dedicate, subject to the reversion set forth below, up to 40,000 square feet of land to the City for a child-care facility. Declarant shall initiate action to subdivide the 40,000 square feet of land within sixty days after DHR notifies the Declarant of the need for a child care facility. The terms of the dedication, subject to reversion, shall provide that the dedicated land shall revert back to the Declarant, in the event that it is subsequently determined by the DHR that there is no need for a child-care facility in the Ewa By Gentry Project.
- d. **Community endowment.** Declarant shall contribute a total of two hundred fifty thousand dollars (\$250,000.00) for endowment purposes to the community foundation established pursuant to Condition 26 of the Unilateral Agreement dated November 29, 1993, executed by Haseko (Ewa), Inc. and filed in the State of Hawaii Land Court as Document No. 2091140. Funding by the Declarant shall be fifty thousand dollars (\$50,000.00) per year for five (5) years with the initial payment to be contributed by April 1, 1995, or within one month of the establishment of the community foundation, whichever occurs later.

15. **CIVIL DEFENSE:** Within one (1) year of this Unilateral Agreement, Declarant shall coordinate with the Oahu Civil Defense Agency and the State Civil Defense regarding a warning, evacuation, and shelter program to provide for a natural disaster.

16. **RAILROAD RIGHT-OF-WAY:** Declarant shall respect the forty (40) foot former OR&L railroad right-of-way owned by the State; provided that the portion of the Ewa By Gentry Project located adjacent to this right-of-way shall be designed in a manner compatible with its use for future transportation purposes, such as pedestrian, bike, and/or public transit routes; provided that any and all structures shall be set back a minimum of forty (40) feet from this right-of-way, unless legislation is adopted which sets a greater or lesser setback requirement; and provided further that if legislation is adopted which establishes a greater or lesser setback requirement, development following the effective date of the legislation shall comply with the established setback.

17. **RUBBISH COLLECTION:** Declarant shall provide a twelve (12) month prior notification of the need for rubbish collection service to the DPW.

18. **WASTE REDUCTION:** At appropriate times and as may be required by the DPW or the DOH, Declarant shall develop waste reduction strategies for incorporation within the Ewa By Gentry Project.

19. **ARCHAEOLOGICAL RESOURCES:** Declarant shall immediately stop work and contact the State Historic Preservation Division for review and approval of mitigation measures should any previously unidentified archaeological resources such as artifacts, shell, bone or



CITY COUNCIL

CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

ORDINANCE 03 - 02

BILL 57 (2002)

A BILL FOR AN ORDINANCE

TO REZONE LAND SITUATED AT KO'OLINA, OAHU, HAWAII (AMENDING PORTION OF ZONING MAP NO. 14)

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION 1. Land situated at Ko'Oolina, Oahu, Hawaii, hereinafter described, is hereby rezoned from P-2 General Preservation District to B-1 Neighborhood Business District with a 40-foot height limit. The boundaries and area of said B-1 Neighborhood Business District shall be described as shown on the map attached hereto, marked Exhibit "A" and made a part hereof, and further identified as Tax Map Keys: 9-1-056: 007 and 016.

SECTION 2. A Unilateral Agreement marked "Exhibit B" is by reference incorporated herein and made a part hereof.



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

ORDINANCE 03-02
BILL 57 (2002)

SECTION 3. This ordinance shall take effect upon its approval.

INTRODUCED BY

[Handwritten signature]

Councilmembers

DATE OF INTRODUCTION:

July 3, 2002

Honolulu, Hawaii

APPROVED AS TO FORM AND LEGALITY:

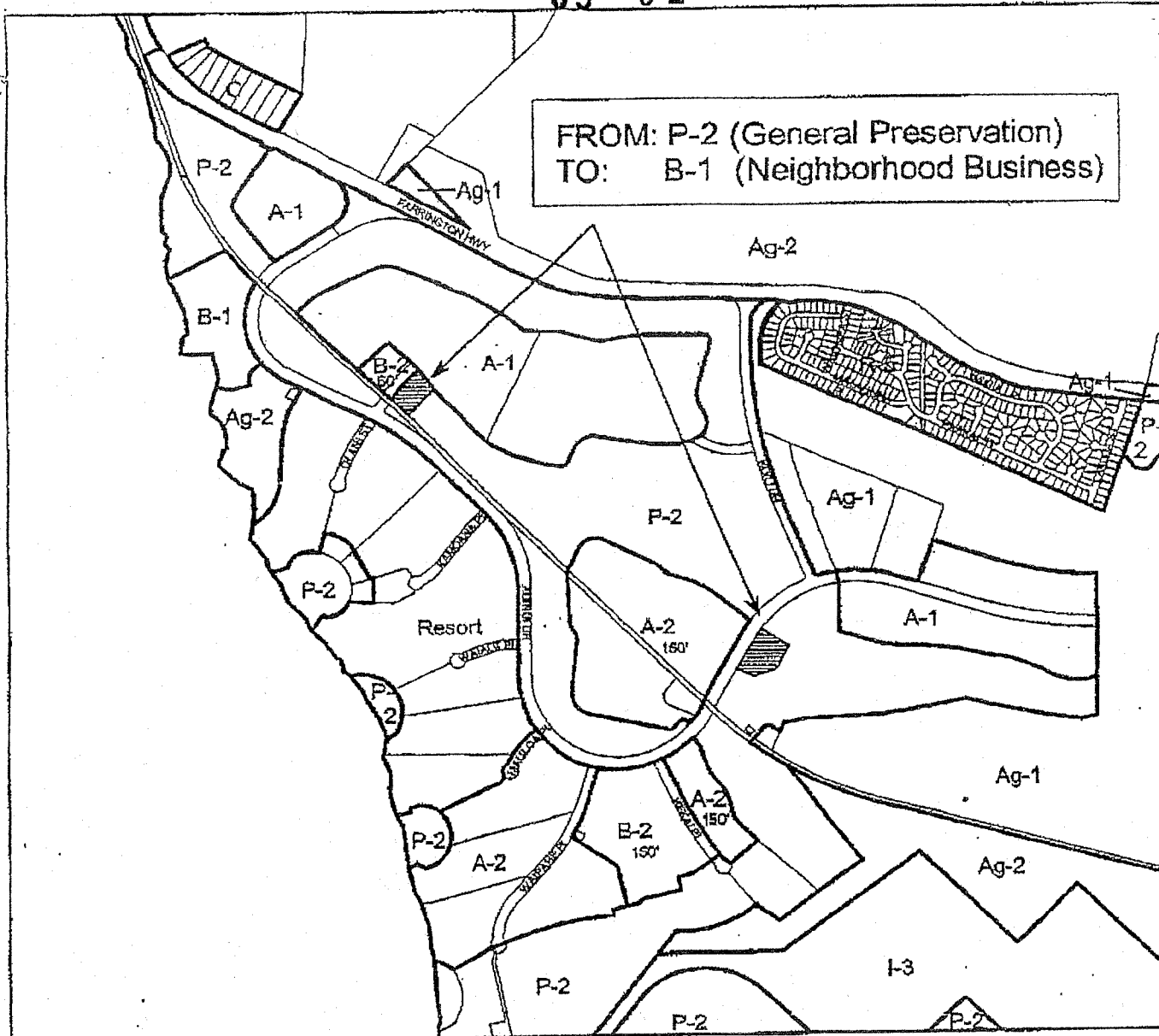
[Handwritten signature]

Deputy Corporation Counsel

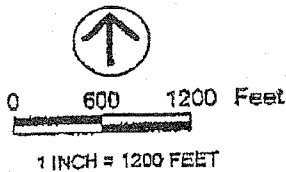
Approved this 11th day of March, ~~2002~~ 2003

[Handwritten signature]
JEREMY HARRIS, MAYOR
City and County of Honolulu, HI

03 - 02



PORTION OF
ZONING MAP NO. 14
BARBERS POINT KAHE NANAKULI



APPLICANT:

SEAGULL SCHOOLS, INC. AND
KO OLINA DEVELOPMENT, LCC

TAX MAP KEY(S):
FOLDER NO.:
LAND AREA:

9-1-56: 7 and 16
2001/2-15
SEAGULL SCHOOLS SITE - 2.00 ACRES
OLANI STREET COMMERCIAL - 1.43 ACRES
DEPARTMENT OF PLANNING & PERMITTING
City & County of Honolulu
PLANNING COMMISSION

PREPARED BY:

PUBLIC HEARING:

5/29/02

CITY COUNCIL

DEC 18 2002

2002/2-2

ORD. NO. **03 - 02**

EFF. DATE: 3/11/03

EXHIBIT A

BILL 57 (2002)

03 - 02

WHEREAS, the Council recommended by its Zoning Committee Report No. _____ that the said zone change be approved, subject to the following conditions contained in this Declaration to be made pursuant to the provisions of ROH Section 21-2.80, as amended, relating to conditional zoning, and to become effective on the effective date of the zoning ordinance approving the change of zoning (the "Rezoning Ordinance").

NOW, THEREFORE, Declarant hereby covenants and declares as follows:

1. Outdoor storage and trash enclosures shall be located away from any portion of the Land abutting apartment zoned lands.
2. Parcel TMK 9-1-56:16 shall be subdivided to provide a 1.0 acre lot for a future fire or police station, as required by Ordinance 86-09. The proposed subdivision shall be approved by the Department of Design and Construction on behalf of the Honolulu Fire Department and Honolulu Police Department, prior to submittal of the application for subdivision approval. The 1.0 acre parcel shall be conveyed to the City when the Department of Design and Construction determines the property is needed for a future fire or police station or prior to the issuance of the certificate of occupancy for the final resort development, whichever event shall first occur. No permanent structures shall be constructed on the 1.0 acre site reserved for the future fire or police station and the Declarant shall be responsible for landscaping and maintenance of the property. A landscape plan for the fire or police station lot shall be submitted to the Department of Planning and Permitting (DPP) for review and approval prior to submittal of the application for subdivision approval.
3. Parcels TMK 9-1-56:7 and 16 shall be connected to the non-potable water system.
4. All conditions associated with Ordinance 86-09 shall remain in effect, as applicable to the Land, unless modified by these conditions.
5. On an annual basis, the Declarant shall submit a written status report to the DPP documenting its satisfaction of and/or describing its progress toward



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

ORDINANCE 00 - 55
BILL 53 (2000), CD1

A BILL FOR AN ORDINANCE

TO REZONE LAND SITUATED AT KAPOLEI, EWA, OAHU, HAWAII (AMENDING PORTION OF ZONING MAP NO. 13), ORDINANCE NO. 86-115.

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION 1. Land situated at Kapolei, Ewa, Oahu, Hawaii, hereinafter described, is hereby rezoned from AG-1 Restricted Agricultural District to B-2 Community Business District with a 60-foot height limit. The boundaries and area of said B-2 Community Business District shall be described as shown on the map attached hereto, marked "Exhibit A" and made a part hereof, and further identified as Tax Map Key 9-1-15: Portion 4.

SECTION 2. A Unilateral Agreement marked "Exhibit B" is by reference incorporated herein and made a part hereof.

OCS00431.B00



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

ORDINANCE 00-55

BILL 53 (2000), CD1

SECTION 3. This ordinance shall take effect upon its approval.

INTRODUCED BY:

Jon Yoshimura (BR)

DATE OF INTRODUCTION:

June 28, 2000

Honolulu, Hawaii

Councilmembers

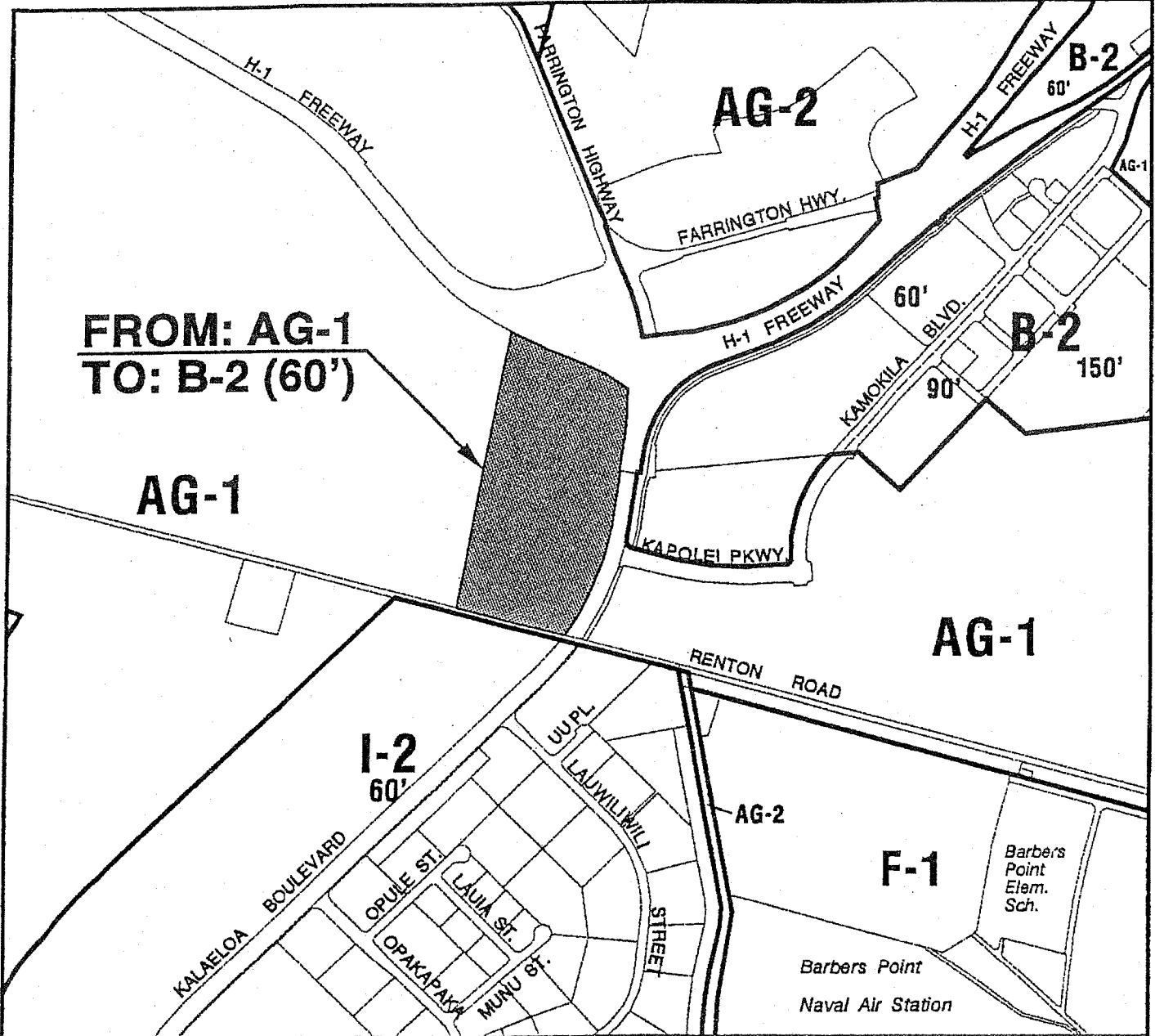
APPROVED AS TO FORM AND LEGALITY:

Jane H. Howell
Deputy Corporation Counsel

APPROVED this 2nd day of November, 2000.

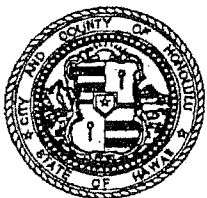
Jeremy Harris
JEREMY HARRIS Mayor
City and County of Honolulu

00 - 55



**FROM: AG-1
TO: B-2 (60')**

**PORTION OF
ZONING MAP NO. 14
(BARBERS POINT - KAHE - NANAKULI)**



0 500 1000
Scale in Feet

APPLICANT: CUTTER

TAX MAP KEY(S): 9-1-15: POR. 4

FOLDER NO.: 2000/Z-3

LAND AREA: APPROXIMATELY 35.197 ACRES

PREPARED BY: DEPT. OF PLANNING & PERMITTING
CITY AND COUNTY OF HONOLULU

PUBLIC HEARING

PLANNING COMMISSION

CITY COUNCIL

ORD. NO. **00 - 55**

6/7/00

SEP 27 2000

2000/Z-1

EFF. DATE: 11/2/00

EXHIBIT A

BILL 53 (2000), CD1

00 - 55

NOW THEREFORE, the Declarant and the Fee Owner hereby covenant and declare as follows:

1. The Declarant shall prepare and comply with a mitigation plan to implement mitigation measures recommended in its Kapolei Auto Dealership Traffic Impact Study dated January 26, 2000. The mitigation plan shall be reviewed and accepted by the State of Hawaii Department of Transportation and the City's Department of Planning and Permitting for conformance to State of Hawaii transportation plans and the Ewa Development Plan. Approval of the mitigation plan shall precede building permits for the parcel.

2. The Declarant and the Fee Owner shall establish and maintain a fifty (50) foot open space buffer along the southern property boundary next to the OR&L right-of-way. No development shall be permitted within the buffer unless it is directly related to the operation of the railroad, or consistent with the use of the right-of-way for open space and bikeway purposes.

3. The Declarant shall use the City of Kapolei Urban Design Plan as a guide in the development of the site and the Kapolei Parkway extension in order to ensure an overall compatibility to the area's urban design. The Declarant shall submit its construction plans for review and approval to a duly constituted review board formed by the Estate of James Campbell prior to gaining any site and building permits.

4. The Declarant and the Fee Owner acknowledge that approval of this zone change does not constitute compliance with other LUO or other governmental requirements. They are subject to separate review and approval. The Declarant shall be responsible for ensuring that the final plans for the Project comply with all applicable LUO and other governmental provisions and requirements.

5. In the event of noncompliance with any of the conditions set forth herein, the Director of Planning and Permitting shall inform the Council and may initiate action to rezone the Land, seek civil enforcement, or take appropriate action to terminate or stop the Project until applicable conditions are met.

6. Failure to fulfill any conditions to the zone change may be grounds for revocation of the permits issued under this zoning and grounds for the enactment of ordinances making

00 - 55



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

ORDINANCE 00 - 57
BILL 55 (2000)

A BILL FOR AN ORDINANCE

TO AMEND A PORTION (LESS THAN 15 ACRES) OF THE STATE LAND USE DISTRICT BOUNDARY MAP (WAIPAHA QUADRANGLE) FROM THE AGRICULTURAL DISTRICT TO THE URBAN DISTRICT FOR CERTAIN LANDS SITUATED AT WAIPIO, OAHU, HAWAII.

BE IT ORDAINED by the People of the City and County of Honolulu:

SECTION 1. A portion (less than 15 acres) of the State Land Use District Boundary Map (Waipahu Quadrangle) is hereby amended by reclassifying certain lands in Waipio from the Agricultural District to the Urban District, as shown on the map attached hereto, marked Exhibit A, and by reference made a part hereof.

DPPSLU1.B00

(D-550/6-21-00)

Zoning



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII

ORDINANCE 00-57
BILL 55 (2000)

SECTION 2. This ordinance shall take effect upon its approval.

INTRODUCED BY:

[Signature] (BR)

Councilmembers

DATE OF INTRODUCTION:

June 28, 2000
Honolulu, Hawaii

APPROVED AS TO FORM AND LEGALITY:

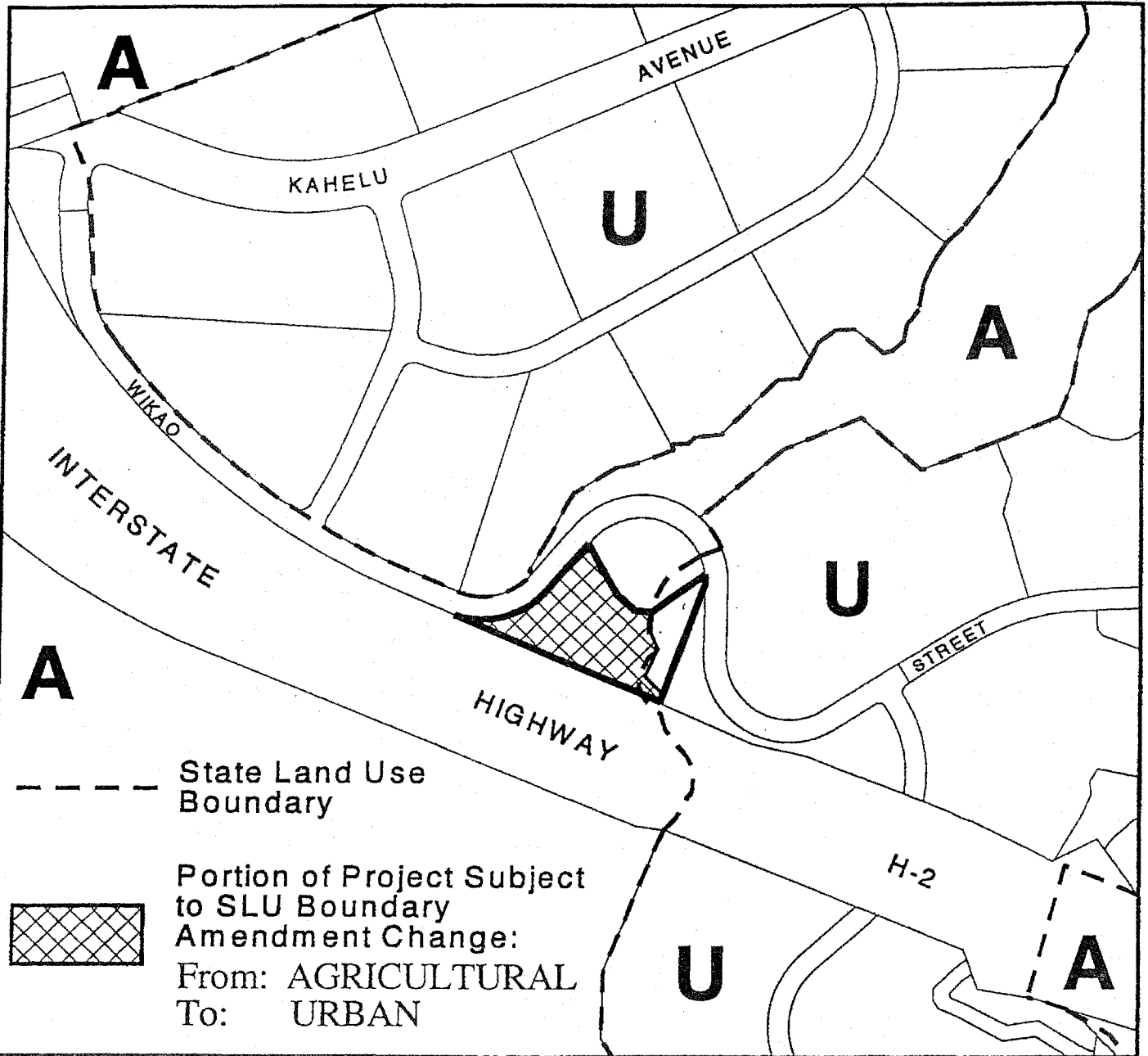
[Signature]
Deputy Corporation Counsel

APPROVED this 2nd day of November, 2000.


[Signature]
Jeremy Harris, Mayor
City and County of Honolulu

NOV 28 1 43 PM '00
CITY AND COUNTY OF HONOLULU
CLERK OF THE CITY COUNCIL
5205 KALANIANA'OLA

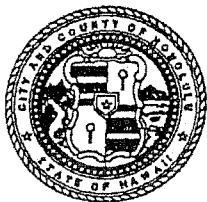
00-57



----- State Land Use Boundary

 Portion of Project Subject to SLU Boundary Amendment Change:
From: AGRICULTURAL
To: URBAN

AMENDMENT TO STATE LAND USE DISTRICT MAP WAIPAHU



0 400
Scale in Feet

APPLICANT: TRINITY CHURCH LEEWARD
 TAX MAP KEY: 9-5-46: Por.15
 FOLDER NO.: 2000/CO-SLU-1
 LAND AREA: 1925 Acres

PREPARED BY: DEPARTMENT OF PLANNING AND PERMITTING
 City and County of Honolulu

PUBLIC HEARING: PLANNING COMMISSION CITY COUNCIL
 6/7/00 SEP 27 2000

ORD. NO. 00-57

2000/SLU-1

EFF. DATE: 11/2/00

EXHIBIT A

BILL 55 (2000)

CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII
CERTIFICATE

ORDINANCE 00-57

BILL 55 (2000)

INTRODUCTION DATE: JUNE 28, 2000

INTRODUCED BY: CHAIR JON YOSHIMURA (BY REQUEST)

	AYE	NO	A/E
1ST READING DATE: 7/12/00 REMARKS: Mirikitani/Mansho - Bill passed 1st reading and referred to Zoning.	BAINUM	X	
	DeSOTO	X	
	FELIX	X	
	HANNEMANN	X	
	HOLMES	X	
	KIM	X	
	MANSHO	X	
	MIRIKITANI	X	
	YOSHIMURA	X	
	TOTAL	9	0
2ND READING DATE: 9/27/00 DRAFT: COMMITTEE REPORT: ZCR-328 PUBLIC HEARING DATE: 9/27/00 REMARKS: 8/9/00 - ZCR-328 adopted/Recommended passage on 2nd reading and scheduling of a public hearing. 9/27/00 - DeSoto/Felix - Bill passed 2nd reading. - 7. Public hearing held concurrently, closed and referred to Zoning. **Hannemann and Kim resigned on 7/25/00	BAINUM	X	
	DeSOTO	X	
	FELIX	X	
	HANNEMANN	**	
	HOLMES	X	
	KIM	**	
	MANSHO	X	
	MIRIKITANI	X	
	YOSHIMURA	X	
	TOTAL	7	0
3RD READING DATE: 10/18/00 DRAFT: COMMITTEE REPORT: ZCR-404 REMARKS: DeSoto/Felix - Bill passed 3rd reading. - 9.	BAINUM	X	
	CACHOLA	X	
	DeSOTO	X	
	FELIX	X	
	HOLMES	X	
	MANSHO	X	
	MIRIKITANI	X	
	OKINO	X	
	YOSHIMURA	X	
TOTAL	9	0	0

Referred to: ZONING
Reference: D-550-00

I hereby certify that the above is a true record of action by the Council of the City and County of Honolulu on this BILL.

Genevieve G. Wong
GENEVIEVE G. WONG, CITY CLERK

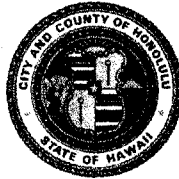
Jon C. Yoshimura
JON C. YOSHIMURA, CHAIR AND PRESIDING OFFICER

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR
HONOLULU, HAWAII 96813

Phone: (808) 768-8305 • Fax: (808) 523-4730 • Internet: www.honolulu.gov

MUFI HANNEMANN
MAYOR



MELVIN N. KAKU
DIRECTOR

RICHARD F. TORRES
DEPUTY DIRECTOR

TP8/07-222061R

October 2, 2007

MEMORANDUM

TO: HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

ATTN: TIMOTHY HATA, STAFF PLANNER

FROM: MELVIN N. KAKU, DIRECTOR

SUBJECT: EWA INDUSTRIAL PARK

Thank you for your August 9, 2007 memorandum, requesting our review of and comments on the draft environmental assessment (EA) for the subject project.

We have the following comments on the document:

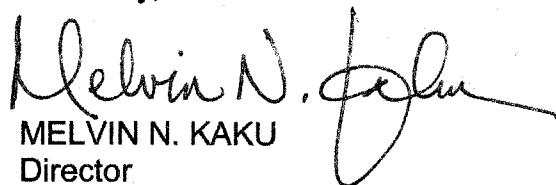
1. On Page 14, Section III.A.5.c. states that the project area is 48.375 acres. In other parts of the draft EA, the project area is described as 48.395 acres.
2. On Page 26, the second sentence should read, "However, Chapter 6 of the report analyzes the project build-out without an access to Renton Road."
3. On Page 26, the first paragraph states that the Renton Road access would be used only for emergency access, when the Geiger Road or Roosevelt Avenue driveways cannot be used for access. This paragraph should clearly define the situations that would prevent the Geiger Road or Roosevelt Avenue driveways from being used for access.
4. A plan showing the access points for the project should be provided to make it easier to understand the summary of traffic impacts on Page 32.
5. The Public Transit discussion on Page 43 should be revised to state that bus stop location coordination should be done with the City DTS and not with TheBus. The same revisions should also be made to the appropriate sections of the Appendix II, Traffic Study.

Henry Eng, FAICP, Director
Page 2
October 2, 2007

6. If future public bus transit operations and facilities are envisioned adjacent to the project site, then early coordination with this department's Public Transit Division is essential. This will ensure that planned roadway improvements incorporate bus operations in their planning and design, including Americans with Disabilities Act compliance.
7. On Page 89, the discussion regarding Minimum Lot Area should be revised to reflect the correct units (acres, not square feet).
8. The discussion of the Land Use Ordinance parking requirements on Page 90 is not consistent with that shown in Appendix I, Conceptual Plans.
9. On Page S-5 of Appendix II, Traffic Study, Table S-2 summarizes the 2009 traffic conditions at key intersections. According to the table, the intersection of Renton Road and Kapolei Parkway is assumed to be signalized by 2009. This is not consistent with Figure 3-1.
10. On Page S-10 of Appendix II, Traffic Study, the second paragraph proposes coordination with this department's staff regarding the possible relocation of the accesses of the two projects to form a four-way intersection. This coordination should be with the Department of Planning and Permitting.

Should you have any questions regarding these comments, please contact Ms. Faith Miyamoto of the Transportation Planning Division at 768-8350.

Sincerely,


MELVIN N. KAKU
Director

cc: ✓ Mr. Keith Kurahashi
Kusao & Kurahashi, Inc.

Mr. Laurence K. Lau
Office of Environmental Quality Control

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.m.com

December 21, 2007

Mr. Wayne Yoshioka, Acting Director
Department of Transportation Services
City and County of Honolulu
650 S. King Street, 3rd Floor
Honolulu, Hawaii 96813

Attention: Ms. Faith Miyamoto, Transportation Planning Division

Subject: Draft Environmental Assessment (EA) for the Proposed Ewa Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Mr. Yoshioka:

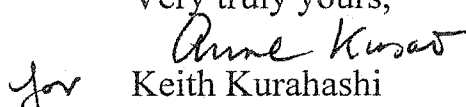
Thank you for your memorandum to Mr. Timothy Hata, Staff Planner at the Department of Planning and Permitting, dated October 2, 2007, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park.

The following responds to your comments:

1. We will correct page 14, Section III.A5.c of our Draft EA to read 48.395 acres.
2. We will correct the word 'analyses' on page 26 of the Draft EA to read 'analyzes'.
3. In times of a natural disaster such as a hurricane and/or tsunami where the City and State emergency vehicles would become involved, Renton Road driveway could be opened up to offer an additional exit way to facilitate the existing Geiger Road and Roosevelt Avenue driveways. In such an emergency, traffic on Geiger Road and Roosevelt Avenue could become heavy slowing the exits from Geiger Road and Roosevelt Avenue driveways. The opening of the Renton Road driveway exit at such a time would assist in the flow of traffic and the overall safety of the community.

4. A Site Plan showing the access points for the project is included in Appendix I - Conceptual Plans.
5. We will have the traffic consultant revise the Transportation Impact Analysis Report dated June 29, 2007 to reflect that coordination should be done with the City DTS and not TheBus, and will make the necessary revisions in the Final EA.
6. The developer agrees to early coordination with the Department of Transportation Services, Public Transit Division, to ensure that planned roadway improvements incorporate bus operations in their planning and design, including Americans with Disabilities Act compliance.
7. Page 89 of the Draft EA, the discussion regarding Minium Lot Area will be corrected to read 48.395 acres, not 48.395 square feet.
8. On page 90 we will correct the parking figures to agree with Appendix I, Conceptual Plans.
9. The intersection should be shown as un-signalized. We apologize for this error. Revision to the Table S-2, to indicate no intersection signal will occur at the next Traffic Impact Assessment revision.
10. The traffic consultant will correct the Transportation Impact Analysis Report, dated June 29, 2007 on Page S-10, the second paragraph, to reflect that coordination of the possible relocation of the accesses of the two projects to form a four-way intersection will be done through the Department of Planning and Permitting and not the Department of Transportation Services.

Again, we thank you for your review of our Draft EA. Your comments and our response will be included in the Final EA.

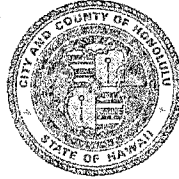
Very truly yours,

for Keith Kurahashi

cc: Ewa Industrial Park, LLC

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 South Street
Honolulu, Hawaii 96813-5007
Phone: 808-723-7139 Fax: 808-723-7111 Internet: www.honolulu.gov/hfd

MUFI HANNEMANN
MAYOR



KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF

August 22, 2007

TO: HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

ATTN: TIMOTHY HATA, STAFF PLANNER

FROM: ALVIN K. TOMITA, ACTING FIRE CHIEF

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED EWA INDUSTRIAL PARK
EWA, OAHU, HAWAII
TAX MAP KEY: 9-1-069: 003

In response to your memorandum of August 9, 2007, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and requires that the following be complied with:

1. Provide a fire apparatus access road for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45 720 mm) from a fire apparatus access road as measured by an approved route around the exterior of the building or facility. (1997 Uniform Fire Code, Section 902.2.1.)
2. Provide a water supply, approved by the county, capable of supplying the required fire flow for fire protection to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed or moved into or within the county.

On-site fire hydrants and mains capable of supplying the required fire flow shall be provided when any portion of the facility or building is in excess of 150 feet (45 720 mm) from a water supply on a fire

Henry Eng, FAICP, Director
Page 2
August 22, 2007

apparatus access road, as measured by an approved route around the exterior of the facility or building. (1997 Uniform Fire Code, Section 903.2, as amended.)

3. Submit civil drawings to the HFD for review and approval.

Should you have any questions, please call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 723-7151.



ALVIN K. TOMITA
Acting Fire Chief

AKT/SK:bh

cc: Keith Kurahashi, Kusao & Kurahashi, Inc. ✓
Laurence K. Lau, Office of Environmental Quality Control

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.m.com

October 31, 2007

Alvin K. Tomita, Acting Fire Chief
City and County of Honolulu
636 South Street
Honolulu, Hawaii 96813-5007

Attention: Battalion Chief Lloyd Rogers

Subject: Draft Environmental Assessment (EA) for the Proposed Ewa
Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Acting Chief Tomita:

Thank you for your letter, dated August 22, 2007, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park. We have responded to your comments as follows:

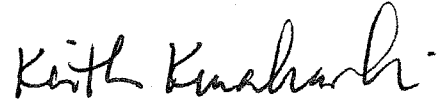
1. The applicant will provide a fire apparatus access road for every facility, building, or portion of a building when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet from a fire apparatus access road as measured by an approved route around the exterior of the building or facility.
2. The applicant will provide a fire hydrant located within 125 feet of the proposed development and provide a flow of 4000 gallons per minute as requested by the Board of Water Supply in their letter dated August 29, 2007.

The on-site fire protection will be coordinated with the Fire Prevention Bureau of the Honolulu Fire Department.

3. The applicant will submit civil drawings to the HFD for review and approval.

As you stated in your response, we will contact Battalion Chief Lloyd Rogers of your Fire Prevention Bureau should we have questions. Your comments and our response will be included in the Final EA.

Very truly yours,

A handwritten signature in black ink that reads "Keith Kurahashi". The signature is written in a cursive style with a horizontal line at the end.

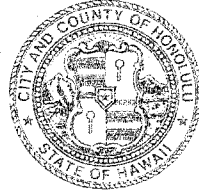
Keith Kurahashi

cc: Ewa Industrial Park

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET · HONOLULU, HAWAII 96813
TELEPHONE: (808) 529-3111 · INTERNET: www.honoluluupd.org

MUFI HANNEMANN
MAYOR



BOISSE P. CORREA
CHIEF

GLEN R. KAJIYAMA
PAUL D. PUTZULU
DEPUTY CHIEFS

OUR REFERENCE **BS-DK**

August 16, 2007

TO: HENRY ENG, FAICP, DIRECTOR
DEPARTMENT OF PLANNING AND PERMITTING

ATTENTION: TIMOTHY HATA, STAFF PLANNER

FROM: BOISSE P. CORREA, CHIEF OF POLICE
HONOLULU POLICE DEPARTMENT

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT
PROPOSED EWA INDUSTRIAL PARK
TAX MAP KEY: 9-1-069: 003

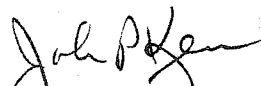
Thank you for the opportunity to review and comment on the subject project.

This project should have no significant impact on the facilities or operations of the Honolulu Police Department.

If there are any questions, please call Major Michael Moses of District 8 at 692-4253 or Mr. Brandon Stone of the Executive Office at 529-3644.

BOISSE P. CORREA
Chief of Police

By


JOHN P. KERR
Assistant Chief of Police
Support Services Bureau

cc: ✓ Mr. Keith Kurahashi, Kusao
and Kurahashi, Inc.
Mr. Laurence K. Lau, OEQC

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.nr.com

October 31, 2007

John P. Kerr, Assistant Chief of Police
Honolulu Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, Hawaii 96813

Attention: Major Michael Moses - District 8

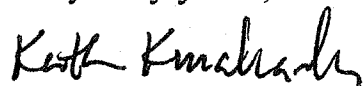
Subject: Draft Environmental Assessment (EA) for the Proposed Ewa
Industrial Park - Tax Map Key: 2-6-024: 70 and 71.

Dear Assistant Chief Kerr:

Thank you for your letter to Mr. Henry Eng, Director of the Department of Planning and Permitting, dated August 16, 2007, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park. We have made note that this project will have no significant impact on the facilities or operations of the Honolulu Police Department.

Your comments and our response will be included in the Final EA.

Very truly yours,



Keith Kurahashi

cc: Ewa Industrial Park

SEPTEMBER 24, 2007

City and County of Honolulu
Department of Planning and Permitting
650 S. King Street, 7th Floor
Honolulu, Hawaii 96813

Attn: Mr. Timothy Hata:

**RE: DRAFT ENVIRONMENTAL ASSESSMENT FOR THE PROPOSED EWA
INDUSTRIAL PARK TAX MAP KEY: 9-1-069;003**

Aloha,

I have read the July 2007 compilation of facts illustrated in the DRAFT ENVIRONMENTAL ASSESSMENT that are of party to the applicant, Ewa Industrial Park LLC, in care of Kusao & Kurahashi, Inc. acting as agent.

My own findings as an Ewa resident and current Ewa Neighborhood Board member while employed as the Office Manager for State Representative Rida Cabanilla, conclude that the project is a major win-win for all of those who have the intent to undertake the following:

1. Provide jobs in the Ewa community
2. Provide security to an area laden with a history of brush fires
3. Secure development adjacent to a sewage treatment plant where value of land sought is currently void of large scale productivity and lacks any substantial contributing value to the city's tax base
4. Improve Geiger Road
5. Beautify the area with professional grade landscaping
6. Enhance the cottage industry concept for Ewa to promote and induce in historic area trades and practices that preserve people power skills, products, and customs.

In addition, the care and expertise to embark upon the endeavor of transforming once agricultural lands now fallow and under neglect into a landscape that will improve the quality of life for hundreds of hard working families if not many more when all phases of the *Industrial Park* are completed, is a just and sensibly sound cause of action.

With full support in favor of the proposal, please accept, approve, and condone the plan.



Tom Berg
91- 203 Hanapouli Circle #39 U
Ewa Beach, Hawaii 96706
Telephone: 753-7324

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.rr.com

November 8, 2007

Mr. Tom Berg
91-203 Hanapouli Circle #39 U
Ewa Beach, Hawaii 96706

**Subject: Draft Environmental Assessment (EA) for the Proposed Ewa
Industrial Park - Tax Map Key: 2-6-024: 70 and 71.**

Dear Mr. Berg:

Thank you for your letter of support to Mr. Timothy Hata, Staff Planner at the Director of the Department of Planning and Permitting, dated September 24, 2007, and for taking the time to review and comment on our Draft EA for the proposed Ewa Industrial Park.

On behalf of the applicant we thank you for your support of the proposed Ewa Industrial Development, and for your recognition of the need for such a development in this growing community.

Your comments and our response will be included in the Final EA.

Very truly yours,



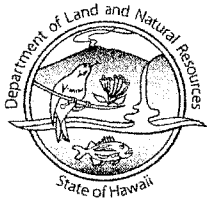
Keith Kurahashi

cc: Ewa Industrial Park

DRAFT EA PRE-CONSULTATION

AGENCY COMMENT LETTERS

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

November 29, 2006

Anne Kusao
Kusao & Kurahashi, Inc.
Manoa Market Place
2752 Woodlawn Drive, Suit 5-202
Honolulu, Hawai'i 96822

LOG NO: 2006.3786
DOC NO: 0611aj08
Archaeology

Dear Ms. Kusao:

**SUBJECT: Chapter 6E-42 Historic Preservation Review – Pre-Consultation on a Draft Environmental Assessment for the Proposed Ewa Industrial Park Hono‘uli‘uli Ahupua‘a, ‘Ewa District, Island of O‘ahu
TMK: (1) 9-1-069:003**

Thank you for the opportunity to comment on the aforementioned project, which we received on September 22, 2006. We apologize for the delay in responding. The proposed undertaking involves industrial development of 48.39 acres of land currently being used for storage of farming equipment and for keeping livestock. According to the provided documents, Ewa Industrial Park, LLC. plans to provide opportunities for businesses to develop industrial uses within the property.

Records maintained at the State Historic Preservation Office indicate that the area of potential effect (APE) was previously under intense sugar cane cultivation, making it unlikely that any historically significant cultural properties are present. However, the Oahu Railway and Land Co. Right of Way (OR&L ROW), listed on the National Register of Historic Places, (SIHP No. 50-80-12-9714) lies directly adjacent to the north of the APE and we are unable to comment on the impact the proposed undertaking will have on the OR&L ROW based on the provided documents.

We look forward to reviewing the Draft Environmental Assessment and continuing consultation about the proposed undertaking.

Please contact Mr. Adam Johnson at 692-8015 if you have any questions or concerns regarding this letter.

Aloha,

A handwritten signature in cursive script, appearing to read "Melanie Chinen".

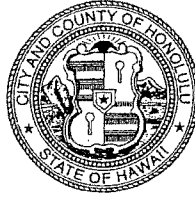
Melanie Chinen, Administrator
State Historic Preservation Division

aj:

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4432 • FAX: (808) 527-6743
DEPT. INTERNET: www.honoluluapp.org • INTERNET: www.honolulu.gov

MUFI HANNEMANN
MAYOR



HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

2006/ELOG-2422 (TH)

November 1, 2006

Mr. Keith Kurahashi
Kusao & Kurahashi, Inc.
Manoa Market Place
2752 Woodlawn Drive, Suite 5-202
Honolulu, Hawaii 96822

Dear Mr. Kurahashi:

Subject: Pre-Consultation on a Draft Environmental Assessment
for the Proposed Ewa Industrial Park,
Tax Map Key: 9-1-069:003; 48.395 acres

We have received your letter of September 20, 2006 and offer the following comments:

1. According to our records, the site is zoned AG-1 Restricted Agricultural District. Since the site is over 25 acres, the applicant is required to submit a zone change application with a project master plan. In paragraph 4 of your letter, you state that the applicant will submit a zone change application from AG-1 Restricted Agricultural District to I-1 Intensive Industrial District. We wish to point out that the I-1 zoning district is designated "Limited Industrial" as opposed to "Intensive Industrial" which is associated with the I-2 zoning district.
2. A substantial portion (in excess of fifteen (15) acres) of the site is in the State Agricultural District. As such, we concur that the applicant will be required to submit a petition to the State Land Use Commission to have this portion of the site reclassified into the Urban District prior to receiving additional land use entitlements such as zoning. ✓
3. Section 3.4.3.1 of the Ewa Development Plan (DP), states that new development should be setback a minimum of fifty (50) feet on either side of the OR&L right-of-way. As such, the DEA should discuss the implications of developing the site after taking the setback into consideration. ✓

Mr. Keith Kurahashi
Kusao & Kurahashi, Inc.
November 1, 2006
Page 2

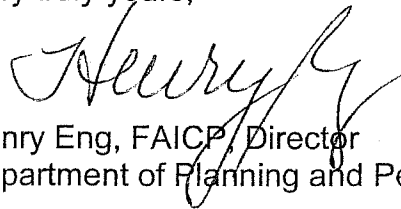
The site is designated as "Industrial" on the Ewa DP Land Use Map. Section 3.7.3.1 of the Ewa DP states industrial centers should be limited to the Barbers Point and Honouliuli Industrial Areas. The Honouliuli Industrial Area identifies the existing Honouliuli Wastewater Treatment Plant (WWTP) and the land immediately surrounding the WWTP. The Ewa DP advocates that the Honouliuli Industrial Area should remain a smaller industrial area used primarily for wastewater treatment. The Ewa DP also advocates expanding WWTP to accommodate additional growth in the region.

Given the site's location adjacent and north of the Honouliuli WWTP, and the longstanding odor and noise issues associated with the WWTP, we strongly recommend that the applicant's Draft Environmental Assessment (DEA) fully discloses these sensitive issues. The DEA should also discuss how odor and noise impacts would be mitigated for the potential occupants of the proposed industrial park and nearby residential areas.

4. Our records indicate that the site is subject to the conditions of the Ewa Highway Master Plan and impact fees associated with Ordinance 02-52.

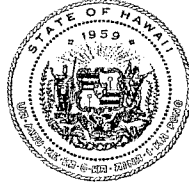
Should you have any questions, please contact Tim Hata of our staff at 527-6070.

Very truly yours,



Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:mo



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

IN REPLY REFER TO:

STP 8.2302

October 13, 2006

Ms. Anne Kusao
Kusao & Kurahashi, Inc.
Manoa Market Place
2752 Woodlawn Drive, Suite 5-202
Honolulu, Hawaii 96822

Dear Ms. Kusao:

Subject: Pre-consultation on Draft Environmental Assessment
Ewa Industrial Park
TMK: 9-1-069: 003 (Oahu)

Thank you for the notification of the proposed subject industrial development project. We have the following initial comments on the project:

1. A traffic impact analysis report (TIAR) should be done and provided by the applicant as part of the draft environmental assessment. The TIAR should cover the project impacts and mitigation measures for the local streets and connecting highways, including a section presenting the project's contribution to and mitigation share for the cumulative traffic in the region.
2. Any drainage and storm water impacts to any highway right-of-way under our jurisdiction need to be addressed.
3. The site of the project may be under or near aircraft flight patterns associated with Kalaeloa Airport and/or Honolulu International Airport. Any portion of the site affected by aircraft operations will need the necessary disclosures to occupants and should include design and construction noise attenuation measures for functions or uses sensitive to noise.

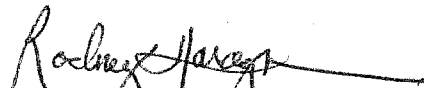
As an interested party, we would appreciate receiving at least five (5) copies of the Draft Environmental Assessment when the report is completed, including any applications for land use designation changes that your client may be filing.

Ms. Anne Kusao
Page 2
October 13, 2006

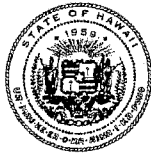
STP 8.2302

We appreciate the opportunity to provide our comments.

Very truly yours,

A handwritten signature in black ink, appearing to read "Rodney Haraga", with a long horizontal stroke extending to the right.

RODNEY K. HARAGA
Director of Transportation



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813

HRD06/2729

October 11, 2006

Anne Kusao
Kusao and Kurahashi, Inc.
2752 Woodlawn Drive, Suite 5-202
Honolulu, HI 96822

RE: Pre-Draft Environmental Assessment Consultation for the Proposed 'Ewa Industrial Park, 'Ewa, O'ahu, TMK 9-1-069: 003.

Dear Anne Kusao,

The Office of Hawaiian Affairs (OHA) is in receipt of your September 25, 2006 submission and offers the following comments:

The 'Ewa plain has historically been known to contain sinkholes in which human skeletal and avi-faunal remains have been encountered. These sinkholes can continue to exist in areas that have been graded or heavily cultivated for agricultural uses.

According to records at the Bishop Museum pertaining to inventories conducted for compliance with the Native American Graves Protection and Repatriation Act of 1990, burial sites in Honouliuli and in 'Ewa in general have been documented in the past including:

In 1938, human remains representing six individuals from Honouliuli, 'Ewa, O'ahu were collected by Kenneth P. Emory and William A. Lessa and acquired by the Bishop Museum. Museum documentation indicates these remains were in a shallow crypt burial one mile from the coast;

In 1933, human remains representing three individuals from stone pits at 'Ewa, O'ahu were collected by J.W. Barrington and Edwin H. Bryan;

In 1942, human remains representing two individuals from Kualakai, 'Ewa Beach, O'ahu were donated to the Bishop Museum;

In 1959, human remains representing seven individuals from 'Ewa, O'ahu were donated to the Bishop Museum by the Anthropology Club of the University of Hawaii (from Standard Oil Refinery land);

Anne Kusao
October 11, 2006
Page 2

In 1980, human remains representing nine individuals from Honouliuli, O'ahu were collected and donated to the Bishop Museum by Albert, Borthwick and Folk.

Donor information indicates these human remains were recovered from coral sinkholes

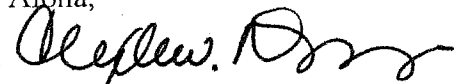
In the last decade, unmarked burial sites have been found in the area of St. Francis West, West Loch Estates, Old Fort Weaver Road, Kalaeloa, One'ula Beach, Campbell Estate, Ko'Olina and other areas in the vicinity of this project.

The depth of grading activities and the likelihood of adversely impacting any sub-surface cultural sites or deposits is contingent upon understanding the original surface grade as it may have existed prior to agricultural activities such as sugarcane.

Native Hawaiian burial sites have been found just on and under the surface to depths of eight or nine feet depending upon the nature of the terrain. Furthermore, the nature of documented interments in the 'Ewa area (stone pits, sinkholes, crypts, etc.) could lead to the survival of these sites despite intensive agricultural activities on the surface.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

Aloha,



Clyde W. Nāmu'o
Administrator

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



October 11, 2006

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
HERBERT S. K. KAOPUA, SR.
SAMUEL T. HATA
ALLY J. PARK
ROBERT K. CUNDIFF

RODNEY K. HARAGA, Ex-Officio
LAVERNE T. HIGA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

Ms. Anne Kusao
Kusao & Kurahashi, Incorporated
2752 Woodlawn Drive, Suite 5-202
Honolulu, Hawaii 96822

Dear Ms. Kusao:

Subject: Your Letter of September 20, 2006 on the Pre-Consultation of a Draft Environmental Assessment for the Proposed Ewa Industrial Park, TMK: 9-1-069: 003

Thank you for the opportunity to comment on the proposed industrial subdivision.

The existing water system cannot provide adequate fire protection to the proposed industrial subdivision. Our Water System Standards require a fire flow of 4000 gallons per minute (gpm) for industrial subdivisions. The existing water system can only provide a flow of approximately 3000 gpm to the farthest fire hydrant. Therefore, the developer will be required to upgrade a portion of the existing water main along Geiger Road to serve the proposed development. The construction drawings should be submitted for approval. However, please be advised that this information is based upon current data and, therefore, the Board of Water Supply reserves the right to change any position or information stated herein up until the final approval of your building permit. The final decision on the availability of water will be confirmed when the building permit 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.

Large landscape areas should be irrigated with non-potable water.

If you have any questions, please contact Robert Chun at 748-5443.

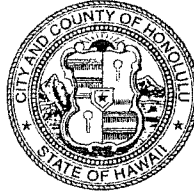
Very truly yours,

KEITH S. SHIDA
Principal Executive
Customer Care Division

HONOLULU FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU

636 SOUTH STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 723-7139 • FAX: (808) 723-7111 • INTERNET: www.honolulufire.org

MUFI HANNEMANN
MAYOR



KENNETH G. SILVA
FIRE CHIEF

ALVIN K. TOMITA
DEPUTY FIRE CHIEF

October 9, 2006

Ms. Anne Kusao
Kusao & Kurahashi, Inc.
Manoa Market Place
2752 Woodlawn Drive, Suite 5-202
Honolulu, Hawaii 96822

Dear Ms. Kusao:

Subject: Preconsultation on a Draft Environmental Assessment for the
Proposed Ewa Industrial Park
Tax Map Key: 9-1-069: 003

In response to your letter dated September 20, 2006, regarding the above-mentioned subject, the Honolulu Fire Department (HFD) reviewed the material provided and requires that the following be complied with:

1. Provide a fire apparatus access road for every facility, building, or portion of a building hereafter constructed or moved into or within the jurisdiction when any portion of the facility or any portion of an exterior wall of the first story of the building is located more than 150 feet (45 720 mm) from a fire apparatus access road as measured by an approved route around the exterior of the building or facility. (1997 Uniform Fire Code, Section 902.2.1.)
2. Provide a water supply, approved by the county, capable of supplying the required fire flow for fire protection to all premises upon which facilities or buildings, or portions thereof, are hereafter constructed or moved into or within the county.

On-site fire hydrants and mains capable of supplying the required fire flow shall be provided when any portion of the facility or building is in excess of the 150 feet (45 720 mm) from a water supply on a fire apparatus access road, as measured by an approved route around the

Ms. Anne Kusao
Page 2
October 9, 2006

exterior of the facility or building. (1997 Uniform Fire Code,
Section 903.2, as amended.)

3. Submit civil and construction drawings to the HFD for review and approval.

In addition, please note that our new address is:

Honolulu Fire Department
636 South Street
Honolulu, Hawaii 96813-5007

Should you have any questions, please call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 723-7151.

Sincerely,



KENNETH G. SILVA
Fire Chief

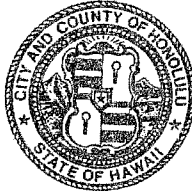
KGS/SY:jl

cc: Ewa Industrial Park, LLC

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
<http://www.honoluluupd.org>
www.honolulu.gov

MUFI HANNEMANN
MAYOR



BOISSE P. CORREA
CHIEF

GLEN R. KAJIYAMA
PAUL D. PUTZULU
DEPUTY CHIEFS

OUR REFERENCE **BS-DK**

September 26, 2006

Ms. Anne Kusao
Kusao & Kurahashi, Inc.
2752 Woodlawn Drive, Suite 5-202
Honolulu, Hawaii 96822

Dear Ms. Kusao:

This is in response to your letter of September 20, 2006, regarding a Pre-consultation on a Draft Environmental Assessment for the proposed Ewa Industrial Park project.

This project should have no unanticipated impact on the facilities or operations of the Honolulu Police Department.


If there are any questions, please call Major Michael Moses of District 8 at 692-4253 or Mr. Brandon Stone of the Executive Bureau at 529-3644.

Sincerely,

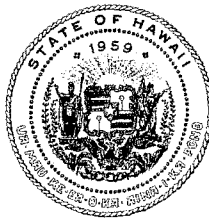
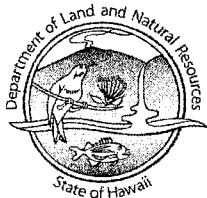
BOISSE P. CORREA
Chief of Police

for

By


JOHN P. KERR
Assistant Chief of Police
Support Services Bureau

LINDA LINGLE
GOVERNOR OF HAWAII



PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

November 29, 2006

Anne Kusao
Kusao & Kurahashi, Inc.
Manoa Market Place
2752 Woodlawn Drive, Suit 5-202
Honolulu, Hawai'i 96822

LOG NO: 2006.3786
DOC NO: 0611aj08
Archaeology

Dear Ms. Kusao:

SUBJECT: Chapter 6E-42 Historic Preservation Review – Pre-Consultation on a Draft Environmental Assessment for the Proposed Ewa Industrial Park Hono‘uli‘uli Ahupua‘a, ‘Ewa District, Island of O‘ahu
TMK: (1) 9-1-069:003

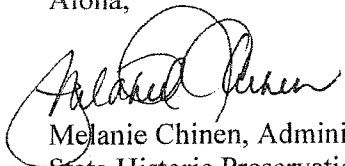
Thank you for the opportunity to comment on the aforementioned project, which we received on September 22, 2006. We apologize for the delay in responding. The proposed undertaking involves industrial development of 48.39 acres of land currently being used for storage of farming equipment and for keeping livestock. According to the provided documents, Ewa Industrial Park, LLC. plans to provide opportunities for businesses to develop industrial uses within the property.

Records maintained at the State Historic Preservation Office indicate that the area of potential effect (APE) was previously under intense sugar cane cultivation, making it unlikely that any historically significant cultural properties are present. However, the Oahu Railway and Land Co. Right of Way (OR&L ROW), listed on the National Register of Historic Places, (SIHP No. 50-80-12-9714) lies directly adjacent to the north of the APE and we are unable to comment on the impact the proposed undertaking will have on the OR&L ROW based on the provided documents.

We look forward to reviewing the Draft Environmental Assessment and continuing consultation about the proposed undertaking.

Please contact Mr. Adam Johnson at 692-8015 if you have any questions or concerns regarding this letter.

Aloha,


Melanie Chinen, Administrator
State Historic Preservation Division

aj:

APPENDIX V
AIR QUALITY REPORT

AIR QUALITY IMPACT REPORT (AQIR)

***EWA INDUSTRIAL PARK
KAPOLEI, HAWAII***

4 MAY 2007

PREPARED FOR:

**Ewa Industrial Park, LLC
and
Kusao & Kurahashi, Inc.**

PREPARED BY:

**J. W. MORROW
Environmental Management Consultant
1481 South King Street, Suite 548
Honolulu, Hawaii 96814**

TABLE OF CONTENTS

LIST OF TABLES

LIST OF FIGURES

1. INTRODUCTION.....	1
2. AIR QUALITY STANDARDS.....	3
3. EXISTING AIR QUALITY.....	3
3.1 General.....	3
3.2 Department of Health Monitoring.....	4
3.3 Onsite Carbon Monoxide Sampling.....	4
4. CLIMATE & METEOROLOGY.....	6
4.1 Climate.....	6
4.2 Surface Winds.....	10
5. SHORT-TERM IMPACTS.....	10
5.1 Onsite Impacts.....	10
5.2 Offsite Impacts.....	15
6. MOBILE SOURCE IMPACTS.....	16
6.1 Mobile Source Activity.....	16
6.2 Emission Factors.....	16
6.3 Modeling Methodology.....	16
6.4 Results: 1-Hour Concentrations.....	17
6.5 Results: 8-Hour Concentrations.....	18
7. CONCLUSIONS AND MITIGATION.....	18
7.1 Short-Term Impacts.....	18
7.2 Mobile Source Impacts.....	21

REFERENCES

LIST OF TABLES

<u>NUMBER</u>	<u>TITLE</u>
1	Summary of State of Hawaii and Federal Ambient Air Quality Standards
2	Air Quality Data - Department of Health Monitoring Sites, 2005
3	Climatic Norms, Means and Extremes, Honolulu International Airport (HIA)
4	Annual Joint Frequency Distribution of Wind Speed and Direction Honolulu International Airport

LIST OF FIGURES

<u>NUMBER</u>	<u>TITLE</u>
1	Project Location
2	A.M. Peak-Hour Conditions, Geiger Road West of Kapolei Parkway, 20 December 2006
3	P.M. Peak-Hour Conditions, Geiger Road West of Kapolei Parkway, 20 December 2006
4	August Wind Rose - Honolulu International Airport
5	January Wind Rose - Honolulu International Airport
6	Estimates of Maximum 1-Hour and 8-Hour Carbon Monoxide Concentrations - Geiger Road at Kapolei Parkway, 2007 - 2012
7	Estimates of Maximum 1-Hour and 8-Hour Carbon Monoxide Concentrations - Geiger Road at Fort Weaver Road, 2007 - 2012

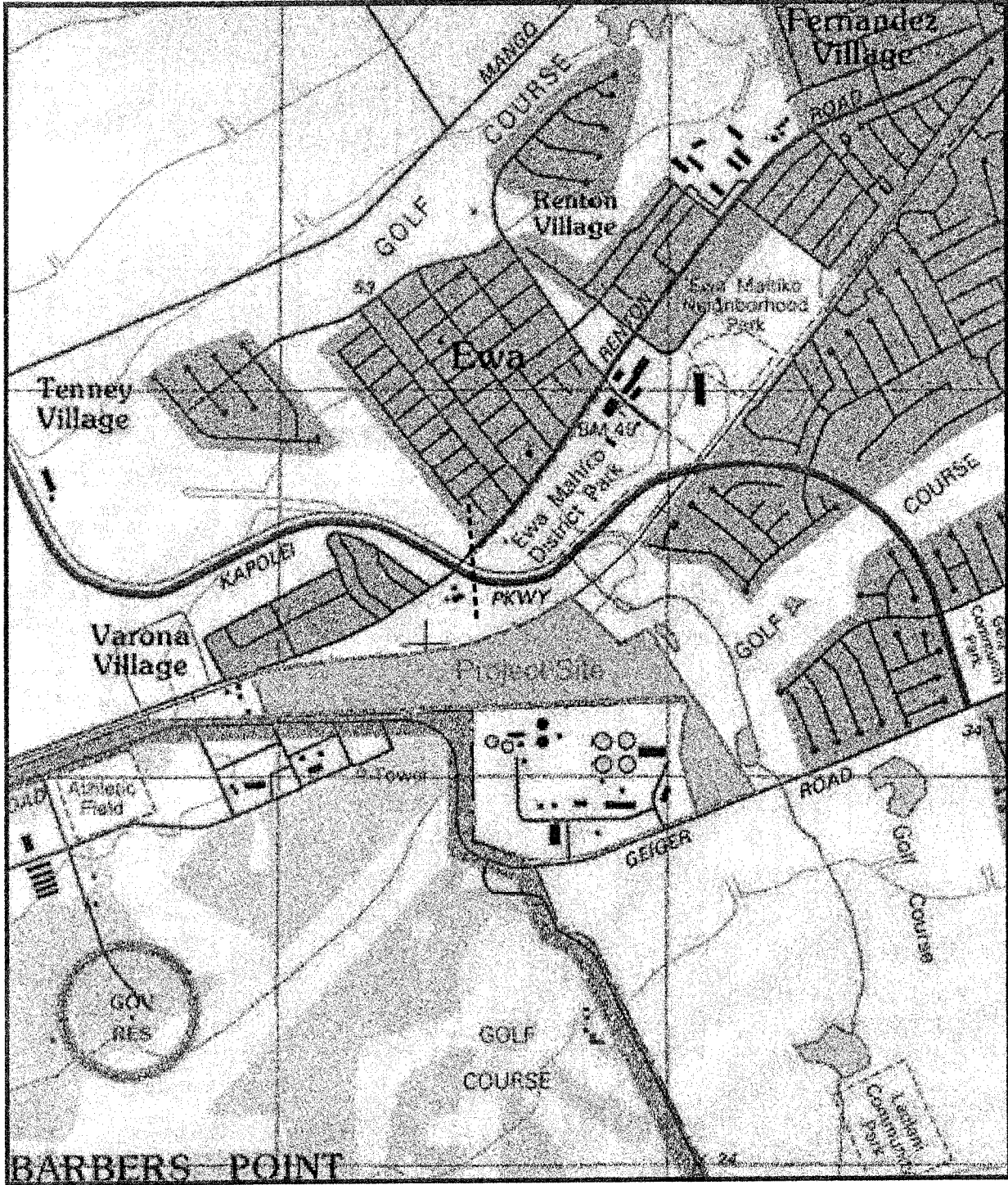
1. INTRODUCTION

Development of an industrial park is being proposed for an approximately 48-acre parcel of land adjacent to the former Barbers Point Naval Air Station in the Ewa district on the island of Oahu (Figure 1). Activities on the site are expected to include light manufacturing, warehousing, distribution, self-storage, and a small amount of accessory retail uses.

The purpose of this report is to assess the short and long-term impacts of the proposed industrial park on air quality. The project can be considered an "indirect source" of air pollution as defined in the federal Clean Air Act¹ since its primary association with air quality is its inherent attraction for mobile sources, i.e., motor vehicles. Much of the focus of this analysis, therefore, is on the project's ability to generate additional traffic in the project area with its resultant impact on air quality. Air quality impact was evaluated for existing (2007) and future (2012) conditions with the proposed industrial park.

Finally, during construction of the park air pollutant emissions will be generated both onsite and offsite by vehicular movement, grading, concrete and asphalt batching, and general dust-generating construction activities. These impacts have also been addressed.

FIGURE 1
PROJECT LOCATION



USGS Quad Ewa (1998)
1:24,000(NAD-83)

2. AIR QUALITY STANDARDS

A summary of State of Hawaii and national ambient air quality standards (NAAQS) is presented in Table 1.^{2,3,4} Note that Hawaii's standards are not divided into primary and secondary standards as are the federal standards.

Primary standards are intended to protect public health with an adequate margin of safety while secondary standards are intended to protect public welfare through the prevention of damage to soils, water, vegetation, man-made materials, animals, wildlife, visibility, climate, and economic values⁵. Note that in the case of the principal automotive pollutants [CO, NO₂, and O₃], the primary and secondary standards are identical.

Some of Hawaii's standards (CO, NO₂, and O₃) are clearly more stringent than their federal counterparts and like their federal counterparts in the case of short-term standards, they may be exceeded once per year.

3. EXISTING AIR QUALITY

3.1 General. The state Department of Health (DOH) maintains a network of air monitoring stations around the state to gather data on the following regulated pollutants:

- particulate matter \leq 10 microns (PM₁₀)
- sulfur dioxide (SO₂)

- nitrogen dioxide (NO₂)
- carbon monoxide (CO)
- ozone (O₃)

In the case of PM₁₀, measurements are made on a 24-hour basis to correspond with the averaging period specified in state and federal standards. Depending on the sampling equipment and site, samples are collected either continuously or once every six days in accordance with U. S. Environmental Protection Agency (EPA) guidelines. Carbon monoxide, sulfur dioxide, and ozone, however, are measured on a continuous basis due to their short-term (1- and 3-, and 8-hour) standards. Nitrogen dioxide is also measured with continuous instruments and averaged over a full year to correspond to its annual standards. Lead sampling was discontinued in October 1997 with EPA approval. This was largely due to the elimination of lead in gasoline and the resulting reduction of ambient lead levels in Hawaii to essentially zero.

3.2 Department of Health Monitoring. The nearest DOH air monitoring station is located about three miles west of the project site. A summary of the most recent published air quality data⁷ from that site and from the Sand Island site (the only ozone monitoring site) is presented in Table 2. These data are representative of the existing good air quality in the project area.

3.3 Onsite Carbon Monoxide Sampling. In conjunction with this project, air sampling was conducted in December 2006, along Geiger Road east of the proposed industrial park. A continuous carbon monoxide (CO) instrument was set up and operated during the a.m. and p.m. peak traffic hours.

TABLE 1
SUMMARY OF STATE OF HAWAII AND FEDERAL
AMBIENT AIR QUALITY STANDARDS

POLLUTANT	AVERAGING PERIOD	NAAQS PRIMARY	NAAQS SECONDARY	STATE STANDARDS
PM ₁₀	Annual	50	50	50
	24-hr	150	150	150
PM _{2.5}	Annual	15	15	---
	24-hr	65	65	---
SO ₂	Annual	80	---	80
	24-hr	365	---	365
	3-hr	---	1,300	1,300
NO ₂	Annual	100	100	70
CO	8-hr	10	---	5
	1-hr	40	---	10
O ₃	1-hr	235	235	100
	8-hr	156	156	---
H ₂ S	1-hr	---	---	35
Pb	Calendar Quarter	1.5	1.5	1.5

KEY: PM₁₀ - particulate matter \leq 10 microns
 PM_{2.5} - particulate matter \leq 2.5 microns
 SO₂ - sulfur dioxide
 NO₂ - nitrogen dioxide
 CO - carbon monoxide
 O₃ - ozone
 H₂S - hydrogen sulfide
 Pb - lead

All concentrations in micrograms per cubic meter ($\mu\text{g}/\text{m}^3$) except CO which is in milligrams per cubic meter.

An anemometer and vane were also installed to record onsite surface winds during the sampling period. A simultaneous manual count of traffic was performed. The variability of each of the parameters measured during the peak hours is clearly seen in Figures 2 and 3.

On Wednesday, 20 December 2006, sampling equipment was set up on the south side of Geiger Road west of the intersection with Kapolei Parkway. Weather conditions during the morning peak hour were characterized by clear skies and light northeasterly winds, 0 - 1 mph. Carbon monoxide concentrations measured were low, averaging 1.6 mg/m^3 for the 1-hour period. Total two-way traffic volume was 1,065 vehicles between 6:30 and 7:30 a.m. Hawaiian Standard Time (HST).

On the afternoon of the same day, the equipment was again set up at the same location. Sky conditions were partly cloudy (50% sky cover) with easterly trade winds 5 - 10 mph. The total two-way traffic volume was 1,076 vehicles. The hourly mean CO level of 1.1 mg/m^3 reflected the relatively low traffic volume and increased wind speed and was again well below the regulatory standard.

4. CLIMATE AND METEOROLOGY

4.1 Climate. Climatic norms, means and extremes for Honolulu⁸ are presented in Table 3. Analysis of the monthly temperature and rainfall data for the National Weather Service station at Honolulu

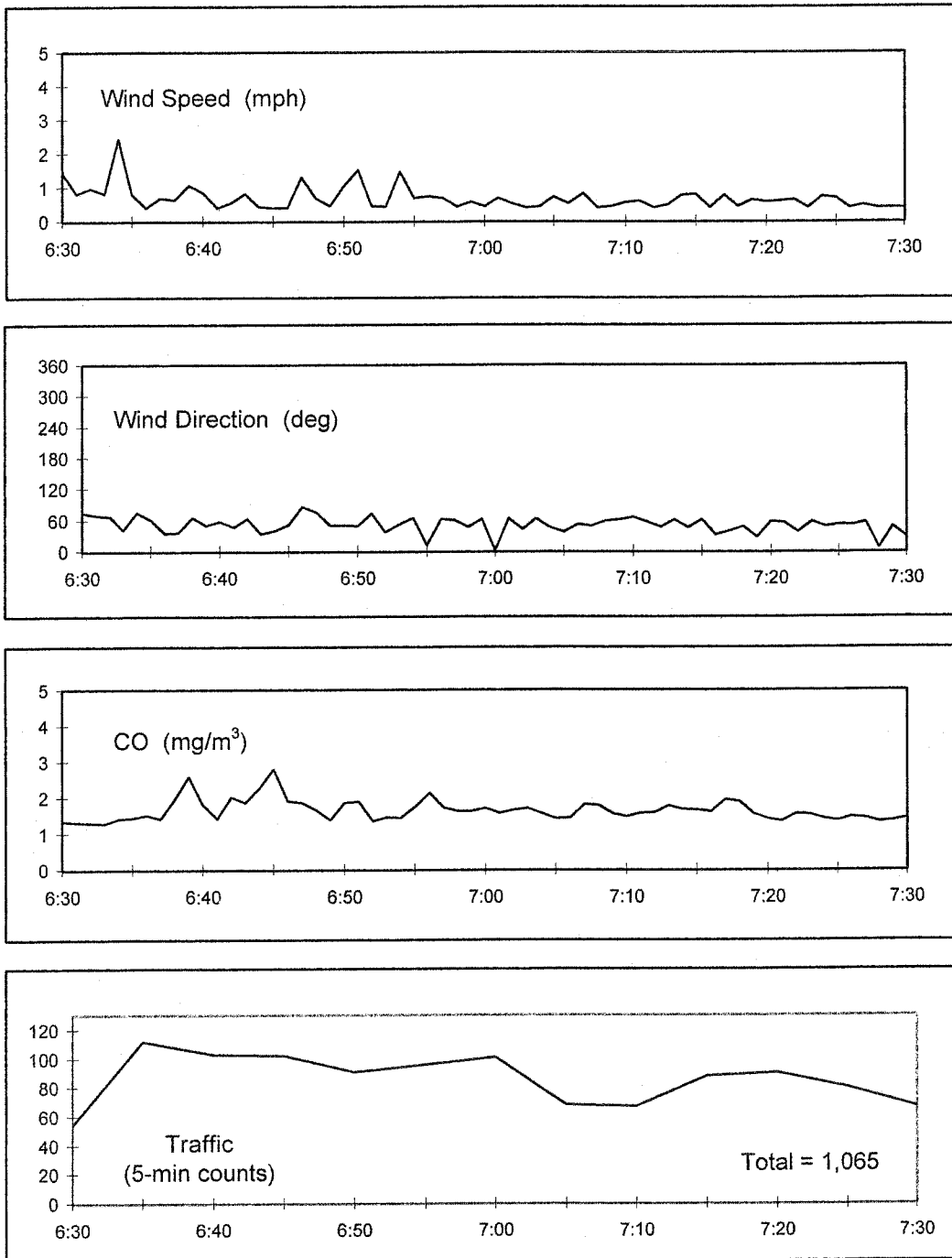
TABLE 2
AIR QUALITY DATA
DEPARTMENT OF HEALTH MONITORING SITES
2005

Pollutant	Concentration ($\mu\text{g}/\text{m}^3$)
Particulate matter (≤ 10 microns) (PM ₁₀) 24-hr	53
Annual	15
Particulate matter (≤ 2.5 microns) (PM _{2.5}) 24-hr	55
Annual	4
Sulfur dioxide (SO ₂) 3-hr	64
24-hr	21
Annual	2
Carbon monoxide (CO) 1-hr	1.71
8-hr	1.05
Ozone (O ₃) 1-hr	116
8-hr	92
Annual	34
Nitrogen Dioxide (NO ₂) Annual	9
Notes: 1. PM , CO, SO ₂ and NO ₂ data from the Kapolei site. 2. O ₃ data are from the Sand Island site. 3. CO data are milligrams per cubic meter (mg/m^3) 4. 24-hr PM ₁₀ & PM _{2.5} maximum attributed to New Years fireworks.	

Source: Hawaii Department of Health (Reference 7)

FIGURE 2

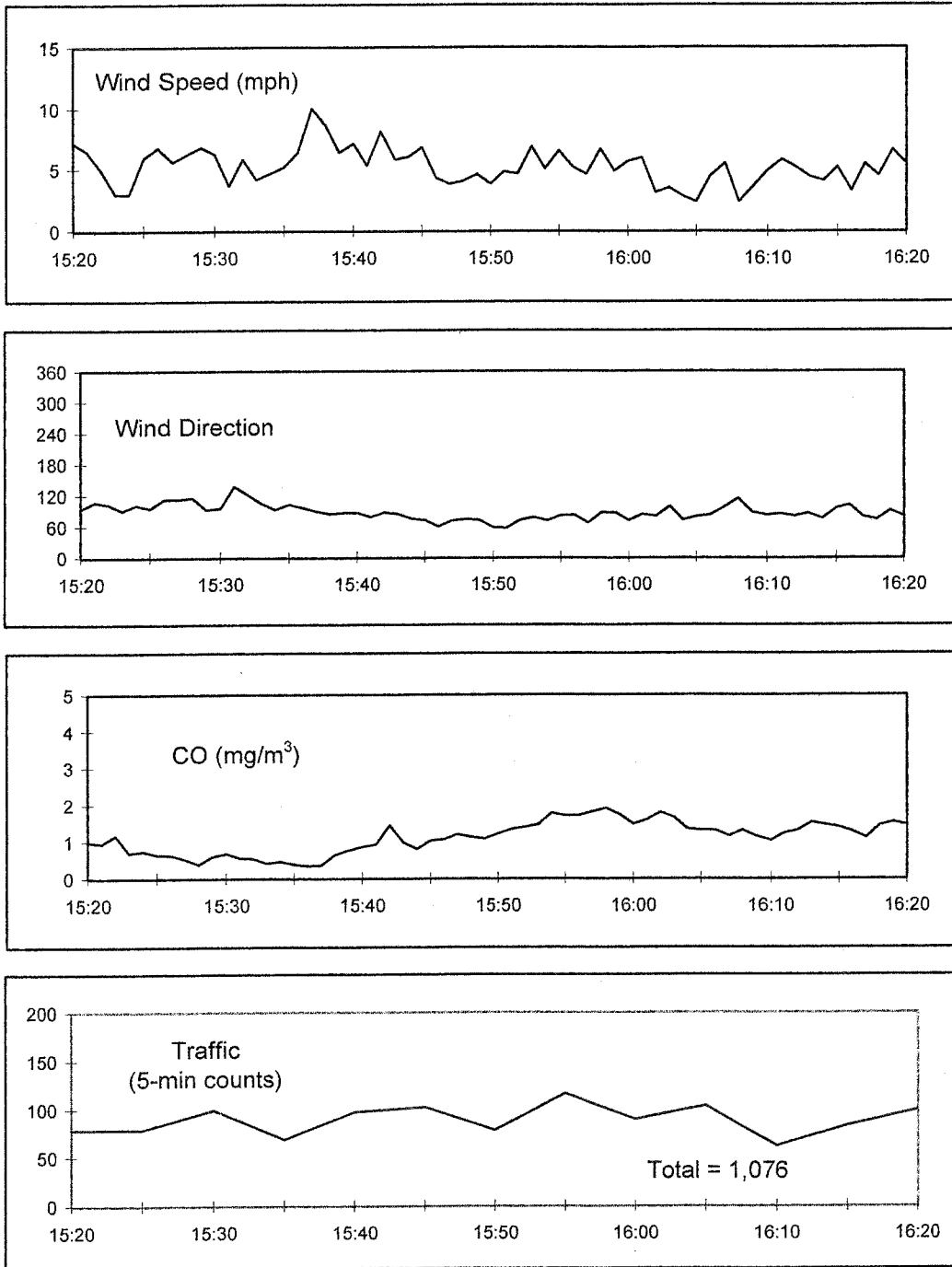
A.M. PEAK HOUR CONDITIONS
GEIGER ROAD WEST OF KAPOLEI PARKWAY
20 DECEMBER 2006



Time of Day

FIGURE 3

P.M. PEAK HOUR CONDITIONS
GEIGER ROAD WEST OF KAPOLEI PARKWAY
20 DECEMBER 2006



International Airport in accordance with Thornwaite's scheme for climatic classification, yields a precipitation/evaporation (P/E) index of 26.6 which classifies the area as "semi-arid".⁹

4.2 Surface Winds. Meteorological data records were reviewed from the Honolulu International Airport and Hickam Air Force Base. The annual prevalence of northeast trade winds is clearly shown in Table 4. A closer examination of the data, however, indicates that low velocities (less than 10 mph) occur frequently and that the normal northeasterly trade winds tend to break down in the Fall giving way to more light, variable wind conditions through the Winter and on into early Spring. It is during these times that Honolulu generally experiences elevated pollutant levels. This seasonal difference in wind conditions can be easily contrasted by comparing August and January wind roses (Figures 4 and 5). Of particular interest from an air pollution standpoint were the stability wind roses prepared for Hickam Air Force Base¹⁰. These data indicated that stable conditions, i.e., Pasquill-Gifford stability categories E and F¹¹, occur about 28% of the time on an annual basis and 36% of the time during the peak winter month (January). It is under such conditions that the greatest potential for air pollutant buildup from groundlevel sources, e.g., motor vehicles, exists.

5. SHORT-TERM IMPACTS

5.1 Onsite Impacts. The principal source of short-term air quality impact will be construction-related activity. Construction vehicle activity can at times increase automotive pollutant concentrations along adjoining existing streets as well as on the project site itself. Construction vehicle traffic on the existing roadway may at times cause a temporary reduction in average travel speeds with a concomitant

TABLE 3
CLIMATIC NORMS, MEANS AND EXTREMES
HONOLULU INTERNATIONAL AIRPORT (HIA)

Parameter	Descriptor	Honolulu International Airport
Temperature (deg F)	Daily maximum	84.4
	Daily minimum	70.0
	Annual mean	77.2
Precipitation (inches)	Maximum monthly	20.91
	Minimum monthly	trace
	Annual mean	22.02
Humidity (%)	Normal	68
Wind Speed (mph)	Mean	11.4
Sunshine	Percent of possible	71
Sky cover (mean # days)	Clear	90.0
	Partly cloudy	179.8
	Cloudy	92.0

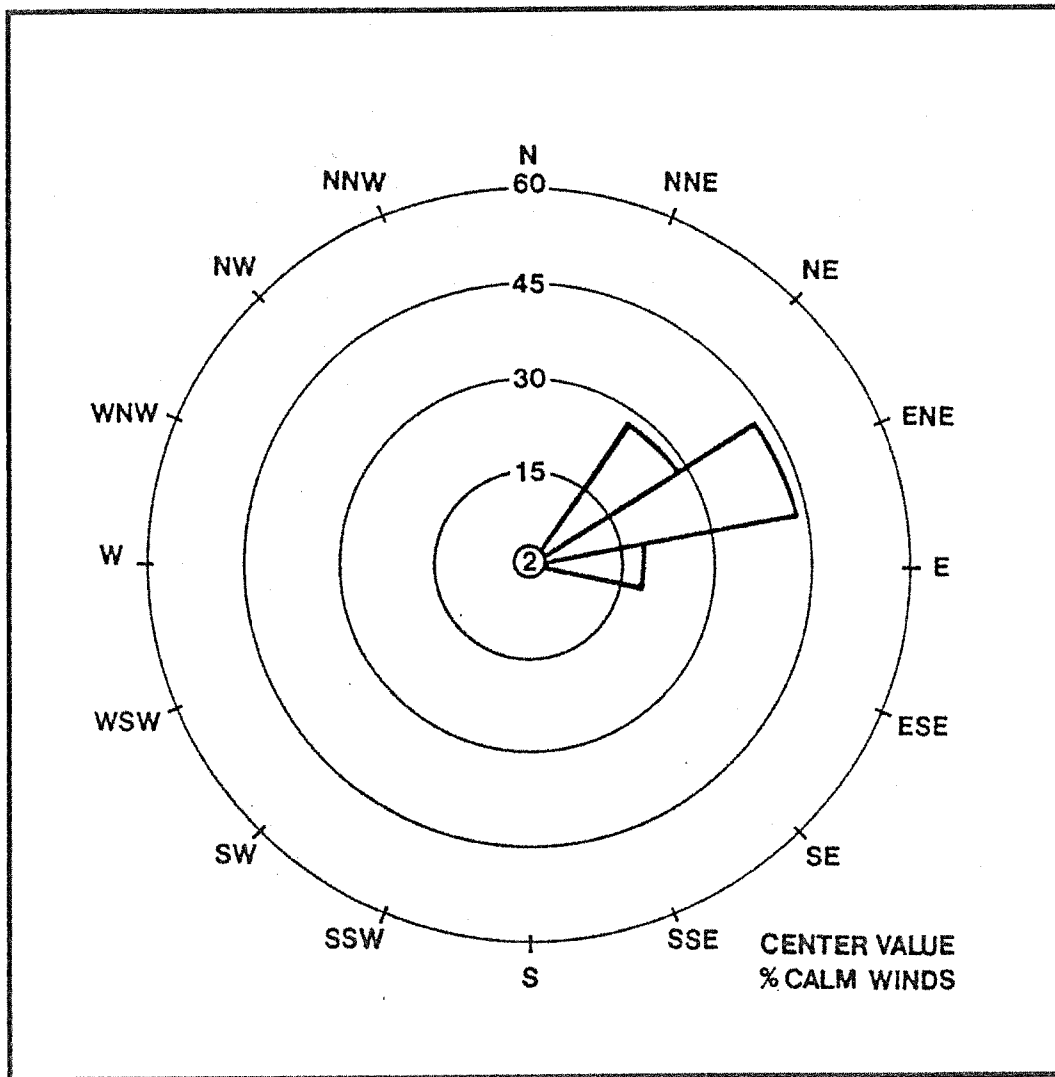
Sources: National Climatic Data Center (NCDC) (Reference 8)

TABLE 4
ANNUAL JOINT FREQUENCY DISTRIBUTION
OF WIND SPEED AND DIRECTION
HONOLULU INTERNATIONAL AIRPORT

Dir (deg)	Wind Speed (m/sec)						All
	< 3.1	< 4.5	< 5.8	< 7.2	< 8.5	>= 8.5	
10	0.0065	0.0038	0.0023	0.0016	0.0009	0.0001	0.0151
20	0.0082	0.0041	0.0025	0.0023	0.0011	0.0001	0.0183
30	0.0100	0.0061	0.0051	0.0038	0.0028	0.0007	0.0286
40	0.0188	0.0157	0.0258	0.0222	0.0174	0.0040	0.1039
50	0.0268	0.0290	0.0449	0.0385	0.0307	0.0054	0.1752
60	0.0344	0.0289	0.0436	0.0273	0.0238	0.0041	0.1621
70	0.0250	0.0181	0.0197	0.0122	0.0096	0.0009	0.0855
80	0.0113	0.0081	0.0065	0.0039	0.0009	0.0003	0.0310
90	0.0073	0.0049	0.0040	0.0009	0.0008	0.0000	0.0179
100	0.0031	0.0016	0.0014	0.0006	0.0002	0.0000	0.0068
110	0.0027	0.0019	0.0010	0.0007	0.0005	0.0001	0.0069
120	0.0027	0.0013	0.0019	0.0009	0.0003	0.0003	0.0075
130	0.0022	0.0032	0.0018	0.0015	0.0007	0.0002	0.0096
140	0.0034	0.0033	0.0039	0.0018	0.0011	0.0006	0.0141
150	0.0022	0.0030	0.0019	0.0003	0.0002	0.0005	0.0081
160	0.0024	0.0033	0.0023	0.0010	0.0005	0.0000	0.0094
170	0.0031	0.0046	0.0023	0.0007	0.0003	0.0000	0.0109
180	0.0055	0.0042	0.0018	0.0008	0.0005	0.0000	0.0128
190	0.0065	0.0038	0.0013	0.0002	0.0000	0.0000	0.0117
200	0.0057	0.0032	0.0011	0.0001	0.0000	0.0000	0.0101
210	0.0076	0.0038	0.0016	0.0001	0.0000	0.0000	0.0131
220	0.0083	0.0077	0.0016	0.0001	0.0001	0.0000	0.0179
230	0.0076	0.0049	0.0014	0.0001	0.0001	0.0000	0.0141
240	0.0042	0.0016	0.0013	0.0000	0.0000	0.0000	0.0071
250	0.0040	0.0010	0.0003	0.0000	0.0000	0.0000	0.0054
260	0.0064	0.0023	0.0005	0.0000	0.0000	0.0000	0.0091
270	0.0065	0.0010	0.0005	0.0002	0.0000	0.0000	0.0082
280	0.0099	0.0005	0.0002	0.0000	0.0000	0.0000	0.0106
290	0.0123	0.0003	0.0002	0.0001	0.0000	0.0000	0.0130
300	0.0167	0.0018	0.0011	0.0000	0.0000	0.0000	0.0197
310	0.0235	0.0022	0.0015	0.0001	0.0000	0.0000	0.0272
320	0.0200	0.0022	0.0013	0.0006	0.0001	0.0000	0.0241
330	0.0121	0.0023	0.0011	0.0005	0.0000	0.0000	0.0159
340	0.0094	0.0010	0.0003	0.0001	0.0000	0.0000	0.0109
350	0.0082	0.0025	0.0016	0.0002	0.0000	0.0000	0.0125
360	0.0093	0.0027	0.0022	0.0006	0.0005	0.0001	0.0154
All	0.3537	0.1898	0.1917	0.1240	0.0932	0.0174	0.9698
						Calms:	0.0302

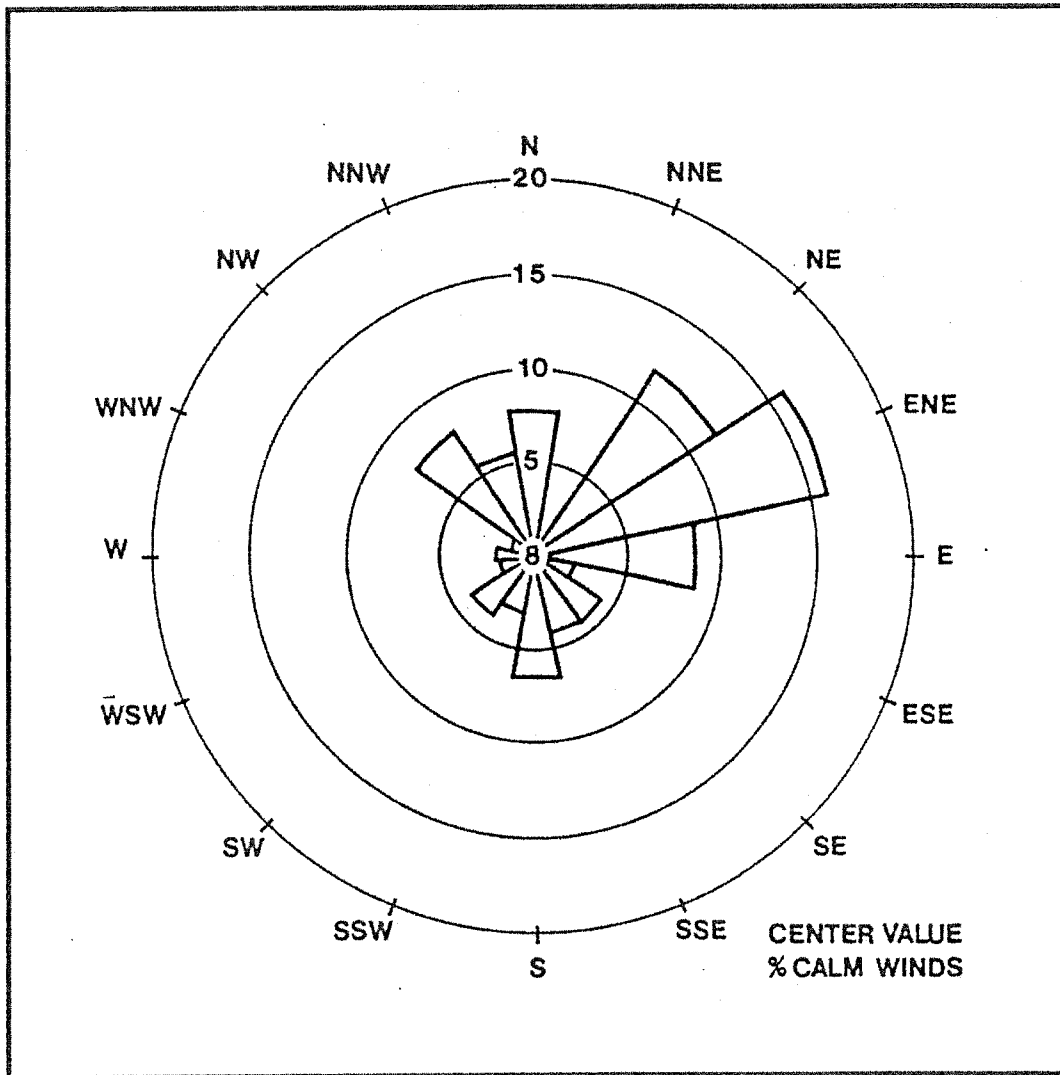
SOURCE: National Weather Service, 1992

FIGURE 4
AUGUST WIND ROSE
HONOLULU INTERNATIONAL AIRPORT



SOURCE: National Weather Service
Historical Records, 1940-57

FIGURE 5
JANUARY WIND ROSE
HONOLULU INTERNATIONAL AIRPORT



SOURCE: National Weather Service
Historical Records, 1940-57

increase in vehicle emissions due to the "stop and go" traffic conditions. The site preparation and earth moving will create particulate matter (PM) emissions as will construction of new buildings and roadways themselves. Construction vehicle movement on unpaved on-site areas will also generate PM emissions. EPA studies on fugitive dust emissions from construction sites indicate that about 1.2 tons/acre per month of activity may be expected under conditions of medium activity, moderate soil silt content (30%), and a precipitation/ evaporation (P/E) index of 50^{9,12}.

5.2 Offsite Impacts. In addition to the onsite impacts attributable to construction activity, there will also be offsite impacts due to the operation of concrete and asphalt batching plants needed for construction of buildings and parking areas. Such plants routinely emit particulate matter and other gaseous pollutants; however, it is too early to identify the specific facilities that will be providing these materials and thus the discussion of air quality impacts is necessarily generic. The batch plants which will be producing this concrete and asphalt must be permitted by the Department of Health Clean Air Branch pursuant to state regulations⁶. In order to obtain these permits they must demonstrate their ability to continuously comply with both emission⁶ and ambient air quality⁴ standards. Under the federal Title V operating permit requirements¹³, now incorporated in Hawaii's rules⁹, air pollution sources must regularly attest to their compliance with all applicable requirements. A typical concrete batch plant in Hawaii is equipped with fabric filters, i.e., "baghouses" for particulate matter (PM) control. Similarly, a typical asphalt plant is equipped with either a wet venturi scrubber or fabric filters. The efficiency of such controls is normally 95 - 99%.

6. MOBILE SOURCE IMPACTS

6.1 Mobile Source Activity. The traffic analysis report ¹⁴ prepared for the proposed project served as the basis for this mobile source impact analysis. Existing and projected future peak-hour traffic volumes for the principal road serving the project site were obtained from that report.

6.2 Emission Factors. Automotive emission factors for carbon monoxide (CO) were generated for calendar years 2007 and 2012 using EPA's Mobile Source Emissions Model (MOBILE-6.2)¹⁵. To localize the emission factors as much as possible, an age distribution for registered vehicles in the City & County of Honolulu ¹⁶ was used in lieu of national statistics. That same age distribution was the basis for the distribution of vehicle miles traveled as well.

6.3 Modeling Methodology. Mobile source air quality modeling has historically focused on estimating concentrations of non-reactive pollutants, primarily carbon monoxide (CO). This has been the case because CO is relatively stable in the atmosphere having a half-life on the order of about one (1) month,¹⁷ and it comprises the largest fraction of automotive emissions.¹⁵

Using the traffic data provided, modeling was performed for the for the years 2007 and 2012 with and without the project. The EPA guideline model CAL3QHC ^{18, 19} as revised to allow for use of hourly meteorological data files ²⁰ was employed to estimate near-intersection carbon monoxide concentrations. CO concentrations were estimated at an array of 76 receptor sites, spaced at a

distance of 10 meters along each leg of the intersections being studied. The intersections selected for analysis were the Kapolei Parkway and Fort Weaver road intersections with Geiger Road. They were selected based on total traffic volume and greatest change attributable to the proposed project. All other intersections in the area had lower total volumes and less contribution from the project.

A background concentration of 0.40 mg/m^3 from the Department of Health's 2005 monitoring data was also used as the background concentration in the modeling. Hourly meteorological data for a.m. and p.m. peak traffic hours used in the model were extracted from National Weather service data collected at the Honolulu International Airport ²¹ and preprocessed with EPA's PCRAMMET program. ²²

6.4 Results: 1-Hour CO Concentrations. The results of this modeling are summarized in Figures 6 and 7. Maximum estimated 1-hour CO concentrations in milligrams per cubic meter (mg/m^3) for each of the evaluated scenarios are presented along with the particular receptor location at which they were predicted. The results suggest that, under *worst case* conditions of meteorology and traffic, both the federal and state 1-hour CO standards would be met at receptor locations 10 meters and beyond the edge of roadways expected to be affected by project-related traffic. Despite the predicted increases in peak hour traffic volumes the changes in CO levels are small due in large part to the offsetting effect of the federal motor vehicle emissions control program. Vehicle emissions standards for motor vehicles get progressively more stringent over time; thus, older, higher emitting vehicles lost by attrition, are replaced by newer, lower-emitting vehicles which comply with the more stringent standards.

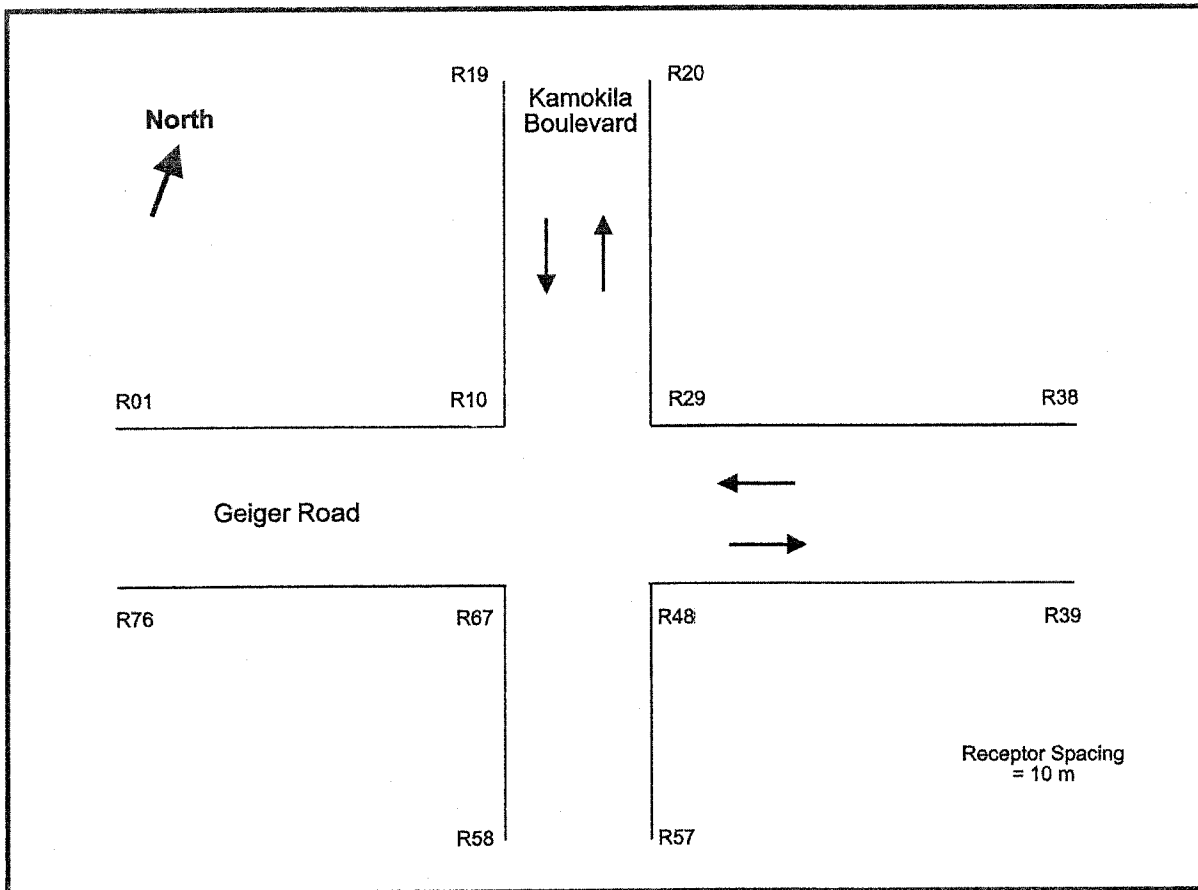
6.5 Results: 8-Hour CO Concentrations. The 8-hour values, also presented in Figures 6 and 7, are very conservative estimates because they are based on averages of the worst case 1-hour values during a.m. and p.m. peak hour traffic and meteorology. Nevertheless, the results are similar to the 1-hour findings in that compliance with state and federal standards is indicated.

7. CONCLUSIONS AND MITIGATION

7.1 Short-Term Impacts. Since, as noted in Section 4, the project area is considered to be "semi-arid" by Thornwaite's climatic classification system with a P/E index lower than that associated with the EPA fugitive dust emission factor, there appears to be an increased potential for fugitive dust. It will therefore be important to employ adequate dust control measures during the construction period, particularly during the drier summer months. Dust control could be accomplished through frequent watering of unpaved roadways and areas of exposed soil. The EPA estimates that twice daily watering can reduce fugitive dust emissions by as much as 50%¹². The soonest possible paving of roadways and parking areas and landscaping of bare areas will also help.

Short-term air quality impacts due to offsite activities supporting the proposed development, i.e., concrete and asphalt production, appear to be *de minimus* due in large part to the high removal of control devices typically found on such production facilities. Furthermore, any emissions will be strictly regulated by the Department of Health permit which each batch plant must have in order to operate.

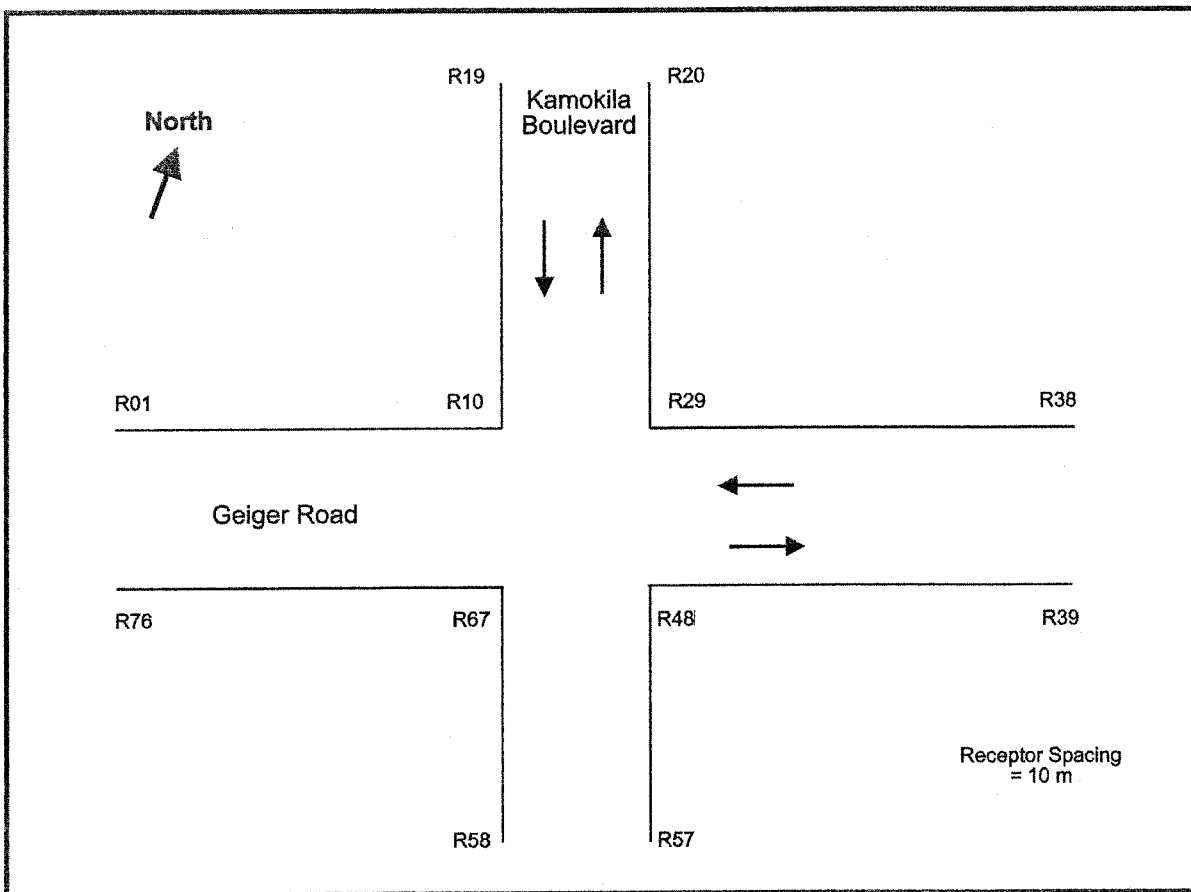
FIGURE 6
ESTIMATES OF MAXIMUM 1- AND 8-HOUR
CARBON MONOXIDE CONCENTRATIONS
Geiger Road at Kapolei Parkway
Peak Traffic Hours
2007 - 2012



Estimated Maximum CO Concentrations (mg/m³)
(and Receptor Location)

<u>Period</u>	<u>2007</u>	<u>2012 w/o</u>	<u>2012 w/proj</u>
A.M.	2.3 (68)	3.6 (48)	3.9 (48)
P.M.	1.1 (48)	2.5 (10)	3.4 (05)
8-Hr	1.7	2.6	2.8

FIGURE 7
ESTIMATES OF MAXIMUM 1- AND 8-HOUR
CARBON MONOXIDE CONCENTRATIONS
Geiger Road at Fort Weaver Road
Peak Traffic Hours
2007 - 2012



Estimated Maximum CO Concentrations (mg/m³)
(and Receptor Location)

Period	2007	2012 w/o	2012 w/proj
A.M.	3.4 (46)	4.5 (51)	4.7 (51)
P.M.	2.6 (48)	2.6 (49)	2.7 (10)
8-Hr	2.4	3.1	3.4

7.2 Mobile Source Impacts. As reported in Section 6, compliance with federal and state carbon monoxide standards is demonstrated under *worst case* conditions of meteorology and peak hour traffic; thus, no special mitigative measures are required.

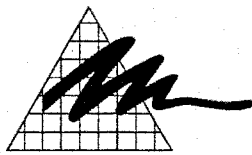
REFERENCES

1. Clean Air Act, 42 U.S.C.A., § 7410 (CAA §110)
2. Clean Air Act, 42 U.S.C.A. §7409 (CAA §109), National primary and secondary ambient air quality standards.
3. Code of Federal Regulations, Title 40, Protection of Environment, Part 50, *National Primary and Secondary Ambient Air Quality Standards*.
4. State of Hawaii. Title 11, Administrative Rules, Chapter 59, *Ambient Air Quality Standards*, as amended, 28 August 2001.
5. Library of Congress, Congressional Research Service. *A Legislative History of the Clean Air Amendments of 1970*, Volume 1, p. 411, January 1974.
6. State of Hawaii. Title 11, Administrative Rules, Chapter 60.1, *Air Pollution Control*, 28 August 2001.
7. State of Hawaii, Department of Health. *Annual Summary: Hawaii Air Quality Data - 2004*.
8. State of Hawaii, Department of Business, Economics and Tourism. *State of Hawaii Data Book - 1999*.
9. Thornwaite, C. W. Climates of North America According to a New Classification, *Geog. Rev.* 21: 633-655, 1931.
10. U.S. Air Force, Environmental Technical Applications Center Report No. 7461: *Stability Wind Roses, Hickam AFB, HI, 0000-2400 LST By Boundary Layer Section*, 4 September 1974.
11. U. S. Environmental Protection Agency. *Workbook of Atmospheric Dispersion Estimates*, AP-26 (Sixth Edition), 1973.
12. U.S. Environmental Protection Agency. *Compilation of Air Pollutant Emission Factors*, Fifth Edition, as updated on Air Chief 12 CD, EPA 454/C-05-001, June 2005.
13. Clean Air Act Amendments of 1990, P.L. 101-549, 15 November 1990.
14. Wilbur Smith Associates. *Ewa Industrial Park Traffic Impact Assessment Report (Draft)*, 28 September 2006
15. U. S. Environmental Protection Agency. *MOBILE-6.1 and Mobile 6.2 (Mobile Source Emission Factor Model)*, EPA 420-R-02-028, October 2002.

16. City & County of Honolulu, Department of Data Systems. Age Distribution of Registered Vehicles in the City & County of Honolulu (unpublished report), March 1992.
17. Seinfeld, John H. *Air Pollution: Physical and Chemical Fundamentals*, p. 69, McGraw-Hill Book Company, 1975
18. U.S. Environmental Protection Agency. *Guideline on Air Quality Models (Revised)*, 40 CFR 51, Appendix W, 1 July 1999.
19. U.S. Environmental Protection Agency. *User's Guide to CAL3QHC Version 2.0: A Modeling Methodology for Predicting Pollutant Concentrations Near Roadway Intersections*, EPA-450/R-92-006 (Revised), September 1995.
20. U.S. Environmental Protection Agency. *Addendum to the User's Guide to CAL3QHC Version 2.0 (CAL3QHCR User's Guide)*, September 1995.
21. National Oceanographic and Atmospheric Administration/ National Climatic Data Center, U. S. Environmental Protection Agency. *Hourly United States Weather Observations, 1990 - 1995*, October 1997.
22. U. S. Environmental Protection Agency. *PCRAMMET User's Guide*, EPA-454/B-96-001, revised June 1999.

APPENDIX VI

ENVIRONMENTAL NOISE ASSESSMENT



D. L. ADAMS ASSOCIATES, LTD.

Consultants in Acoustics and Performing Arts Technologies

**Environmental Noise Assessment Report
Ewa Industrial Park
Ewa, Oahu, Hawaii**

November 2006

DLAA Project No. 06-38

Prepared for:

Ewa Industrial Park LLC
Aiea, Hawaii

970 N. KALAHEO AVE. • SUITE A311 • KAILUA, HAWAII 96734
808/254-3318 • FAX 808/254-5295
www.dlaa.com • hawaii@dlaa.com

TABLE OF CONTENTS

<u>Section</u>	<u>Page</u>
1.0 EXECUTIVE SUMMARY	1
2.0 PROJECT DESCRIPTION	2
3.0 NOISE STANDARDS.....	2
3.1 State of Hawaii, Community Noise Control (DOH)	2
3.2 U.S. Environmental Protection Agency (EPA)	2
3.3 U.S. Federal Highway Administration (FHWA).....	3
3.4 Hawaii Department of Transportation (HDOT)	3
3.5 Federal Aviation Administration (FAA)	3
3.6 Hawaii Department of Transportation (HDOTA), Airports Division	3
4.0 EXISTING ACOUSTICAL ENVIRONMENT	4
4.1 Noise Measurement Procedure	4
4.2 Noise Measurement Locations	5
4.3 Long-Term Noise Measurement Results	5
4.4 Kalaeloa Airport and Honolulu International Airport Noise Contours	6
5.0 POTENTIAL NOISE IMPACTS DUE TO THE PROJECT.....	6
5.1 Project Construction Noise	6
5.2 Project Generated Stationary Mechanical Noise and Compliance with State of Hawaii Community Noise Control Rule.....	6
5.3 Compliance with FHWA/HDOT Noise Limits	6
5.3.1 Vehicular Traffic Noise Impacts on the Surrounding Community.....	7
5.3.2 Vehicular Traffic Noise Impacts on the Project	8
5.4 Compliance with EPA Noise Guidelines.....	8
5.5 Compliance with FAA and HDOT Airports Division Guidelines.....	8
6.0 NOISE IMPACT MITIGATION	8
6.1 Mitigation of Construction Noise	8
6.2 Mitigation of Ewa Industrial Park Generated Noise.....	9
6.3 Mitigation of Vehicular Traffic Noise	9
6.4 Mitigation of Aircraft Noise	10
REFERENCES.....	11

APPENDIX AA-1
 APPENDIX BA-2

LIST OF TABLES

<u>Table Number</u>	<u>Page</u>
Table 1 FAA Land Use Compatibility Chart.....	12
Table 2 HDOT Airports Division Land Use Compatibility Chart.....	14
Table 3 Existing and Future Traffic Noise Projections.....	15

LIST OF FIGURES

<u>Figure Number</u>	
Figure 1	Hawaii Maximum Permissible Sound Levels for Various Zoning Districts.
Figure 2	Federal Highways Administration Recommended Equivalent Hourly Sound Levels Based on Land Use.
Figure 3	Noise Measurement and Prediction Locations.
Figure 4	Graph of Long Term Noise Measurements.
Figure 5	Typical Sound Levels from Construction Equipment.

1.0 EXECUTIVE SUMMARY

- 1.1 The Ewa Industrial Park development is approximately 48.4 acres of currently vacant land located between Geiger Road and Renton Road in the Ewa District of Oahu. The project site is bounded on the east by the Coral Creek Golf Course and on the north by the Oahu Railway & Land (OR&L) tracks. The south side of the site is bordered by Geiger Road, the Honouliuli Wastewater Treatment Plant (WWTP), and the Kalaeloa Redevelopment Area. The project is planned for development in two phases with light industrial uses to include light manufacturing, warehousing, distribution, and self-storage facilities. The project is also expected to include a small amount of retail space such as a convenience store.
- 1.2 The existing sound levels are relatively dynamic and depend significantly on the vehicular traffic patterns and industrial activities in the area. The hourly L_{eq} noise levels generally range from 50 dBA to 65 dBA during the daytime hours and from 45 dBA to 56 dBA during the nighttime hours. The average calculated day-night level, L_{dn} , was 59 dBA for the measurement period. Dominant noise sources include vehicular traffic noise from Roosevelt Road and mechanical noise from the nearby Honouliuli Wastewater Treatment Plant.
- 1.3 During the project construction, the dominant noise sources will probably be earth moving equipment, such as bulldozers and diesel powered trucks. Noise from construction activities will occur on the project site. Noise from construction activities should be short term and must comply with State of Hawaii Community Noise Control Rules and a construction noise permit issued by the Department of Health.
- 1.4 The Ewa Industrial Park development will incorporate mechanical equipment that is typical for commercial buildings and light industrial lands. Noise from this equipment must meet the State DOH maximum permissible noise limits at the property line. For industrial areas adjacent to other industrial, commercial, and residential areas, the noise limits are 70 dBA during the day and night.
- 1.5 The vehicular traffic noise analysis shows that noise levels are expected to increase (with one exception) in the future by 1 to 5 dB without the Ewa Industrial Park project. Traffic noise levels along Geiger Road are expected to decrease by less than 2 dB, possibly due to the completion of the Kapolei Parkway extension.

Vehicular traffic noise levels are not expected to increase by a significant amount due to the project. Noise levels within the project site during peak traffic hours are expected to be below the FHWA/DOT maximum noise limit of 72 dBA due to traffic from the adjacent Roosevelt Road.

- 1.6 The Ewa Industrial Park project site is outside of the 60 L_{dn} noise contour of the Kalaeloa Airport. Therefore, the project will not be impacted by aircraft noise.

2.0 PROJECT DESCRIPTION

The Ewa Industrial Park development is approximately 48.4 acres of currently vacant land zoned as Restricted Agricultural District (AG-1) and is located between Geiger Road and Renton Road in the Ewa District of Oahu. The project site is bounded on the east by the Coral Creek Golf Course and on the north by the Oahu Railway & Land (OR&L) tracks. The south side of the site is bordered by Geiger Road, the Honouliuli Wastewater Treatment Plant, and the Kalaeloa Redevelopment Area.

The project site is planned for development as an Intensive Industrial District (I-2) in two phases with light industrial uses to include light manufacturing, warehousing, distribution, and self-storage facilities. The project is also expected to include a small amount of retail space such as a convenience store. Development and occupancy of the Phase 1 area is anticipated by the end of 2009, while the build-out of Phase 2 is expected by the end of 2012.

3.0 NOISE STANDARDS

Various local and federal agencies have established guidelines and standards for assessing environmental noise impacts and set noise limits as a function of land use. A brief description of common acoustic terminology used in these guidelines and standards is presented in Appendix A.

3.1 State of Hawaii, Community Noise Control (DOH)

The State of Hawaii Community Noise Control Rule [Reference 1] defines three classes of zoning districts and specifies corresponding maximum permissible sound levels due to *stationary* noise sources such as air-conditioning units, exhaust systems, generators, compressors, pumps, etc. The Community Noise Control Rule does not address most *moving* sources, such as vehicular traffic noise, air traffic noise, or rail traffic noise. However, the Community Noise Control Rule does regulate noise related to agricultural, construction, and industrial activities, which may not be stationary.

The maximum permissible noise levels are enforced by the State Department of Health (DOH) for any location at or beyond the property line and shall not be exceeded for more than 10% of the time during any 20-minute period. The specified noise limits which apply are a function of the zoning and time of day as shown in Figure 1. With respect to mixed zoning districts, the rule specifies that the primary land use designation shall be used to determine the applicable zoning district class and the maximum permissible sound level. In determining the maximum permissible sound level, the background noise level is taken into account by the DOH.

3.2 U.S. Environmental Protection Agency (EPA)

The U.S. EPA has identified a range of yearly day-night equivalent sound levels, L_{dn} , sufficient to protect public health and welfare from the effects of environmental noise [Reference 2]. The EPA has established a goal to reduce exterior environmental noise to an L_{dn} not exceeding 65 dBA and a future goal to further reduce exterior environmental noise to an L_{dn} not exceeding 55 dBA.

Additionally, the EPA states that these goals are not intended as regulations as it has no authority to regulate noise levels, but rather they are intended to be viewed as levels below which the general population will not be at risk from any of the identified effects of noise.

3.3 U.S. Federal Highway Administration (FHWA)

The FHWA defines four land use categories and assigns corresponding maximum hourly equivalent sound levels, $L_{eq(h)}$, for traffic noise exposure [Reference 3], which are listed in Figure 2. For example, Category B, defined as picnic and recreation areas, parks, residences, motels, hotels, schools, churches, libraries, and hospitals, has a corresponding maximum exterior L_{eq} of 67dBA and a maximum interior L_{eq} of 52 dBA. These limits are viewed as design goals, and all projects meeting these limits are deemed in conformance with FHWA noise standards.

3.4 Hawaii Department of Transportation (HDOT)

The HDOT has adopted FHWA's design goals for traffic noise exposure in its noise analysis and abatement policy [Reference 4]. According to the policy, a traffic noise impact occurs when the predicted traffic noise levels "approach" or exceed FHWA's design goals or when the predicted traffic noise levels "substantially exceed the existing noise levels." The policy also states that "approach" means at least 1 dB less than FHWA's design goals and "substantially exceed the existing noise levels" means an increase of at least 15 dB.

3.5 Federal Aviation Administration (FAA)

The FAA addresses guidelines for compatible land use that surrounds airports [Reference 5]. Noise contour maps are expressed in terms of yearly day-night average sound levels, L_{dn} , due to aircraft operations. The FAA states that commercial, manufacturing, and production facilities outside of the L_{dn} 70 noise contour are compatible without restrictions. Residences between the L_{dn} 70 and 80 contours are only compatible if noise mitigation measures are incorporated into the building structure. Residences inside of the L_{dn} 80 noise contour are generally not compatible. The compatibility of other land uses, such as residential, public, and recreation, are shown in Table 1.

3.6 Hawaii Department of Transportation (HDOTA), Airports Division

The State of Hawaii, Department of Transportation, Airports Division (HDOTA) has adopted noise restrictions that are similar to, but stricter than, the FAA's noise restrictions [Reference 6]. Like the FAA, HDOTA expresses land use compatibility guidelines based on yearly day-night average sound levels, L_{dn} , due to aircraft operations. In most cases, the HDOTA allows maximum noise limits that are 5 dB lower than the FAA. Commercial uses such as retail shops, restaurants, shopping centers, etc. are compatible with L_{dn} levels up to 65 dBA without any mitigation measures. With noise mitigation measures implemented, such commercial uses are allowed in areas exposed to an L_{dn} as high as 75 dBA. The compatibility of other land uses, such as residential, manufacturing, public, and recreation, are shown in Table 2.

In addition to the HDOTA compatibility guidelines, The Hawaii Revised Statutes, Chapter 0508D, Section 15 states a notification is required to the buyer for real estate property that lies,

“Within the boundaries of the noise exposure area shown on maps prepared by the department of transportation in accordance with Federal Aviation Regulation Part 150-Airport Noise Compatibility Planning (14 Code of Federal Regulations Part 150) for any public airport;”

The FAR Part 150 noise exposure area boundary is defined as the 55 L_{dn} noise contour. Therefore, a notification to the buyer is required for all real estate transactions within the 55 L_{dn} noise contour.

4.0 EXISTING ACOUSTICAL ENVIRONMENT

Two types of noise measurements were conducted to assess the existing acoustical environment in the vicinity of the project location. The first noise measurement type consisted of continuous long-term ambient noise level measurements (Location L1 and L2), as shown in Figure 3. The long term measurements were conducted between October 24, 2006 and October 26, 2006. The second type of noise measurement was short-term and included traffic counts (Locations S1 and S2). The purpose of the short-term noise measurements and corresponding traffic counts were to validate the traffic noise prediction model. The short term measurements were conducted between October 10, 2006 and October 11, 2006.

4.1 Noise Measurement Procedure

Long-Term Noise Measurement Procedure

Continuous, hourly, statistical sound levels were recorded for 48 hours at each location. The measurements were taken using a Larson-Davis Laboratories, Model 820, Type-1 Sound Level Meter together with a Larson-Davis, Model 2560 Type-1 Microphone. Calibration was checked before and after the measurements with a Larson-Davis Model CAL200 calibrator. Both the sound level meter and the calibrator have been certified by the manufacturer within the recommended calibration period. The microphone was mounted on a tripod, approximately 6 feet above grade. A windscreen covered the microphone during the entire measurement period. The sound level meter was secured in a weather resistant case.

Short-Term Noise Measurement Procedure

An approximate 30-minute equivalent sound level, L_{eq} , was measured. Vehicular traffic counts and traffic mix were documented during the measurement period. The noise measurement was taken using a Larson-Davis Laboratories, Model 824, Type-1 Sound Level Meter together with a Larson-Davis, Model 2541 Type-1 Microphone. Calibration was checked before and after the measurements with a Larson-Davis Model CAL200 calibrator. Both the sound level meter and the calibrator have been certified by the manufacturer within the recommended calibration period. The microphone and sound level meter were mounted on a

tripod, approximately 6 feet above grade. A windscreen covered the microphone during the entire measurement period.

4.2 Noise Measurement Locations

Long-Term Noise Measurement Locations

Location L1: Positioned approximately 100 feet north of the property line fence in the northwest portion of the Ewa Industrial Park project site. The area is partially vacant with several homes located nearby. The adjacent dirt road is infrequently trafficked by the residents of the property. The dominant noise source was vehicular traffic from Roosevelt Road (located approximately 120 feet from the meter). Secondary noises include birds, residential noises, and typical farm noises (i.e., chickens, goats, etc.).

Location L2: Positioned approximately 200 feet north of the Honouliuli Wastewater Treatment Plant (WWTP) fence and 30 feet west of a barbed wire fence dividing the Ewa Industrial Park property. The area is partially vacant with shrubs and low trees. The nearby dirt road is infrequently trafficked by heavy trucks who park there overnight. The area is also used for storage and as a goat farm. The dominant noise source was mechanical equipment noise from the WWTP. Secondary noises include birds, goats, and the occasional vehicle.

Short-Term Noise Measurement Locations

Location S1: Positioned adjacent to Geiger Road near the Coral Creek Golf Course, approximately 45 feet south of the centerline.

Location S2: Positioned adjacent to Fort Weaver Road north of Renton Road, approximately 80 feet west of centerline.

4.3 Long-Term Noise Measurement Results

The results from the long-term noise measurements are graphically presented in Figure 4, which shows the measured equivalent sound level, L_{eq} , in A-weighted decibels (dBA) as a function of the measurement date and time.

The sound levels are relatively dynamic and depend significantly on the vehicular traffic patterns and industrial activities in the area for both measurement locations. The hourly L_{eq} noise levels generally range from 50 dBA to 65 dBA during the daytime hours and from 45 dBA to 56 dBA during the nighttime hours. The average calculated day-night level, L_{dn} , at both locations was 59 dBA for the measurement period. Noise from the WWTP created a static noise environment between 7:00 pm and 5:00 am at Location 2. Traffic noise from Roosevelt Road created a slightly louder ambient noise environment during the peak traffic hours. An unknown noise source created a peak hourly equivalent noise level of 65 dBA at both locations at approximately 10:00 am. These trends are apparent in Figure 4.

4.4 Kalaeloa Airport and Honolulu International Airport Noise Contours

The project is in the vicinity of the Kalaeloa Airport and several miles west of Honolulu International Airport. Therefore, the project site was assessed for aircraft noise using airport noise contour maps. The Kalaeloa Master Plan [Reference 7] includes year 2020 projections of airport operations and noise contour maps for airport alternates. Also included in the airport noise contour maps is the affect of the Honolulu International Airport operations [Reference 8]. A complete description of the Kalaeloa Airport alternates can be found in the Kalaeloa Master Plan. The Ewa Industrial Park project site lies between the L_{dn} 55 and L_{dn} 60 noise contours for both airports based on year 2020 aircraft noise projections.

5.0 POTENTIAL NOISE IMPACTS DUE TO THE PROJECT

5.1 Project Construction Noise

Development of project areas will involve excavation, grading, and other typical construction activities during construction. The various construction phases of the project may generate significant amounts of noise. The actual noise levels produced during construction will be a function of the methods employed during each stage of the construction process. Typical ranges of construction equipment noise are shown in Figure 5. Earthmoving equipment, e.g., bulldozers and diesel-powered trucks, will probably be the loudest equipment used during construction.

5.2 Project Generated Stationary Mechanical Noise and Compliance with State of Hawaii Community Noise Control Rule

The new land development will incorporate stationary and non-stationary mechanical equipment that is typical for commercial buildings and industrial areas. Noise from this equipment must meet the State noise rules, which stipulate maximum permissible noise limits at the property line. For areas zoned industrial, the property line noise limits are 70 dBA during the day and night. Mitigation of mechanical noise to meet the State DOH property line noise limits should be incorporated into the project design.

Intermittent industrial noises may be audible at the adjacent Varona Village and future adjacent residential communities. It is recommended that the industrial lands closest to the golf course and residences be dedicated for low noise operations. Noisier light industrial activities should be located adjacent to the WWTP where residences are farther from the noise source.

5.3 Compliance with FHWA/HDOT Noise Limits

A vehicular traffic noise analysis was completed for the existing conditions, future year 2009 projections with and without the Ewa Industrial Park project, and future year 2012 projections with and without the Ewa Industrial Park project using the FHWA Traffic Noise Model Look-up Tables Software Version 2.5 (2004) [Reference 9]. The traffic noise analysis is based on the existing and future traffic projections provided by the Traffic Consultant [Reference 10]. Vehicular traffic noise levels were calculated for four locations, Locations A, B,

C, and D, as shown in Figure 3. The short-term noise measurement and corresponding traffic counts were used to validate the software at the noise prediction location along Fort Weaver Road and Geiger Road (Locations A and B). Only future noise level predictions were made for Location D because the corresponding roadway does not yet exist. The results of the traffic noise analysis for the existing and future year projections are described below and summarized in Table 3.

5.3.1 Vehicular Traffic Noise Impacts on the Surrounding Community

Noise Prediction Location A

Vehicular traffic noise levels adjacent to Fort Weaver Road are expected to increase by less than 2 dB in the future without the project. A traffic noise change of less than 1 dB due to the project is expected. A 3 dB change is not considered to be significant. Existing and future peak traffic hour noise levels at locations with a direct line of sight to the roadway (e.g., homes or businesses without a barrier wall and the second level of two story homes) that are within 100 feet from the centerline of Fort Weaver Road were calculated to exceed the FHWA/DOT maximum noise limits of 67 dBA for residential areas and 72 dBA for commercial areas.

Noise Prediction Location B

Vehicular traffic noise levels adjacent to Geiger Road are expected to decrease by less than 2 dB in the future without the project, likely due to the completion of Kapolei Parkway. A traffic noise increase of less than 3 dB due to the project is expected. This is below the threshold of change in noise level that is perceptible to most people with normal hearing and considered insignificant. Existing and future year traffic projections show that traffic noise levels at residential developments with a direct line of sight to the roadway (e.g., homes without a barrier wall and the second level of two story homes) located within 50 feet from the centerline of Geiger Road are expected to approach or exceed the FHWA/DOT maximum noise limit of 67 dBA.

Noise Prediction Locations C

Existing and future year traffic projections show that traffic noise levels adjacent to Renton Road, at least 50 feet from the centerline, are expected to be below the FHWA/DOT maximum noise limit of 67 dBA. Although traffic noise from Renton Road is expected to increase by a significant amount in the future, the projected increase in traffic noise due to the Ewa Industrial Park project is minimal.

Noise Prediction Location D

Future year traffic projections show that traffic noise levels at the future residential developments at least 80 feet from the centerline of the proposed Kapolei Parkway extension are expected to approach the FHWA/DOT maximum noise limit of 67 dBA both with and without the

project. The increase in traffic noise due to the Ewa Industrial Park project is expected to be less than 1 dB which is an insignificant increase.

5.3.2 Vehicular Traffic Noise Impacts on the Project

Traffic data from the Geiger Road location (Location B) was used to extrapolate noise levels at the Ewa Industrial Park project site adjacent to Roosevelt Road. Traffic noise within the project boundaries is not expected to exceed the FHWA/DOT maximum noise limit of 72 dBA during peak traffic hours.

5.4 Compliance with EPA Noise Guidelines

The EPA has an existing design goal of $L_{dn} \leq 65$ dBA and a future design goal $L_{dn} \leq 55$ dBA for exterior noise levels. The results from the long-term noise measurements conducted at the Ewa Industrial Park project site show an average calculated day-night level, L_{dn} , of 59 dBA which exceeds the future EPA design goal. In the future, industrial noises will contribute to the overall noise level in addition to increased traffic noise throughout the project site due to Roosevelt Road and Renton Road. Noise levels at the project site may exceed the existing EPA design goal of 65 dBA depending on the type of industrial activities and proximity to roadways. It is important to note that the EPA noise guidelines are design goals and not enforceable regulations. However, these guidelines and design goals are useful tools for assessing the noise environment.

5.5 Compliance with FAA and HDOT Airports Division Guidelines

The Ewa Industrial Park project site is between the 55 L_{dn} and L_{dn} 60 noise contours. Therefore, the project is not considered to be adversely impacted by aircraft noise.

6.0 NOISE IMPACT MITIGATION

6.1 Mitigation of Construction Noise

In cases where construction noise exceeds, or is expected to exceed the State's "maximum permissible" property line noise levels [Reference 1], a permit must be obtained from the State DOH to allow the operation of vehicles, cranes, construction equipment, power tools, etc., which emit noise levels in excess of the "maximum permissible" levels.

In order for the State DOH to issue a construction noise permit, the Contractor must submit a noise permit application to the DOH, which describes the construction activities for the project. Prior to issuing the noise permit, the State DOH may require action by the Contractor to incorporate noise mitigation into the construction plan. The DOH may also require the Contractor to conduct noise monitoring or community meetings inviting the neighboring residents and business owners to discuss construction noise. The Contractor should use reasonable and standard practices to mitigate noise, such as using mufflers on diesel and gasoline engines, using properly tuned and balanced machines, etc. However, the State DOH may require additional noise mitigation, such as

temporary noise barriers, or time of day usage limits for certain kinds of construction activities.

Specific permit restrictions for construction activities [Reference 1] are:

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels ... before 7:00 a.m. and after 6:00 p.m. of the same day, Monday through Friday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels... before 9:00 a.m. and after 6:00 p.m. on Saturday."

"No permit shall allow any construction activities which emit noise in excess of the maximum permissible sound levels on Sundays and on holidays."

The use of hoe rams and jack hammers 25 lbs. or larger, high pressure sprayers, chain saws, and pile drivers are restricted to 9:00 a.m. to 5:30 p.m., Monday through Friday. In addition, construction equipment and on-site vehicles or devices whose operations involve the exhausting of gas or air, excluding pile hammers and pneumatic hand tools weighing less than 15 pounds, must be equipped with mufflers [Reference 1].

The DOH noise permit does not limit the noise level generated at the construction site, but rather the times at which noisy construction can take place. Therefore, noise mitigation for construction activities should be addressed using project management, such that the time restrictions within the DOH permit are followed.

6.2 Mitigation of Ewa Industrial Park Generated Noise

The design of the new light industrial development should give consideration to controlling noise emanating from mechanical equipment so as to comply with the State Department of Health *Community Noise Control* rules [Reference 1]. The most effective noise mitigation is to properly plan the project site by creating a buffer zone between noisy industrial activities and noise sensitive areas.

Accordingly, low-noise industrial activities should border the adjacent existing and future residential developments and the Coral Creek Golf Course and should only occur during the day. Low noise industrial activities include warehousing, packaging, or repair establishments. Light industrial activities such as light manufacturing or processing should be located adjacent to the WWTP where there will be a lesser noise impact on residences.

6.3 Mitigation of Vehicular Traffic Noise

The Ewa Industrial Park project will not be impacted by vehicular traffic noise from roadways surrounding the project. Therefore, mitigation of traffic noise is not necessary at the project site.

Vehicular traffic noise from Fort Weaver Road and Geiger Road currently exceeds the FHWA/DOT maximum permissible noise limits at the adjacent commercial and residential areas. However, traffic noise is not expected to increase by a significant amount due to the Ewa Industrial Park project. Therefore, mitigation of traffic noise is not necessary

Although some of the residential developments do not yet exist, a traffic noise impact is possible in the future. Therefore, design of the nearby residential developments should take into account appropriate setbacks from the aforementioned roads in order to comply with the FHWA's maximum exterior L_{eq} noise limit of 67 dBA. Other possible mitigation measures include construction of noise barriers (i.e., earth berms, walls, etc.) and air conditioning the impacted residences.

6.4 Mitigation of Aircraft Noise

The Ewa Industrial Park project site is located between the L_{dn} 55 and 60 dBA noise contours. Therefore, noise mitigation to attenuate aircraft noise is not required. However, a notification to the buyer is required for all real estate transactions within the 55 L_{dn} noise contour.

REFERENCES

1. Chapter 46, *Community Noise Control*, Department of Health, State of Hawaii, Administrative Rules, Title 11, September 23, 1996.
2. *Toward a National Strategy for Noise Control*, U.S. Environmental Protection Agency, April 1977.
3. *Department of Transportation, Federal Highway Administration Procedures for Abatement of Highway Traffic Noise*, Title 23, CFR, Chapter 1, Subchapter J, Part 772, 38 FR 15953, June 19, 1973; Revised at 47 FR 29654, July 8, 1982.
4. *Noise Analysis and Abatement Policy*, Department of Transportation, Highways Division, State of Hawaii, June 1977.
5. FAA Regulations on Airport Noise Compatibility Planning Programs, Code of Federal Regulations, Title 14, Chapter 1, Subchapter 1, Part 150; Issued by 49 FR 49269, December 18, 1984; corrected by 50 FR 5063, February 6, 1985; amended by 53 FR 8723, March 16, 1988; corrected by 53 FR 9726, March 24, 1988.
6. *Honolulu International Airport Master Plan Update and Noise Compatibility Program*, State of Hawaii Department of Transportation, Airports Division, Vol. 2, December 1989.
7. *Kalaeloa Airport Master Plan*, State of Hawaii Department of Transportation, Airports Division, November 1998.
8. *Federal Highway Administration's Traffic Noise Model Look-up Tables Software*, Ver. 2.5; U.S. Department of Transportation, December 17, 2004.
9. *Ewa Industrial Park Traffic Impact Assessment Report - Draft*, Wilbur Smith Associates, September 28, 2006.

**TABLE 1:
FAR Part 150 Recommendations for Land Use Compatibility in Yearly Day-Night Average Sound Levels**

TYPE OF LAND USE	Yearly Day-Night Average Sound Level (L _{dn})					
	< 65	65-70	70-75	75-80	80-85	> 85
RESIDENTIAL:						
Residential (except mobile homes & transient lodgings)	Y	N(1)	N(1)	N	N	N
Mobile home parks	Y	N	N	N	N	N
Transient lodgings	Y	N(1)	N(1)	N(1)	N	N
PUBLIC USE:						
Schools	Y	N(1)	N(1)	N	N	N
Hospitals and nursing homes	Y	25	30	N	N	N
Churches, auditoriums, and concert halls	Y	25	30	N	N	N
Government services	Y	Y	25	30	N	N
Transportation	Y	Y	Y(2)	Y(3)	Y(4)	Y(4)
Parking	Y	Y	Y(2)	Y(3)	Y(4)	N
COMMERCIAL USE:						
Offices, business and professional	Y	Y	25	30	N	N
Wholesale/Retail:(bldg. Mater., hardware, & farm equip.)	Y	Y	Y(2)	Y(3)	Y(4)	N
Retail trade – general	Y	Y	25	30	N	N
Utilities	Y	Y	Y(2)	Y(3)	Y(4)	N
Communication	Y	Y	25	30	N	N
MANUFACTURING AND PRODUCTION:						
Manufacturing, general	Y	Y	Y(2)	Y(3)	Y(4)	N
Photographic and optical	Y	Y	25	30	N	N
Agriculture (except livestock) and forestry	Y	Y(6)	Y(7)	Y(8)	Y(8)	Y(8)
Livestock farming and breeding	Y	Y(6)	Y(7)	N	N	N
Mining and fishing, resource production and extraction	Y	Y	Y	Y	Y	Y
RECREATIONAL USE:						
Outdoor sports arenas and spectator sports	Y	Y(5)	Y(5)	N	N	N
Outdoor music shells, amphitheaters	Y	N	N	N	N	N
Nature exhibits and zoos	Y	Y	N	N	N	N
Amusements, parks, resorts and camps	Y	Y	Y	N	N	N
Golf courses, riding stables and water recreation	Y	Y	25	30	N	N

Note: Numbers in parentheses refer to the following notes.

- (1) Where the community determines that residential or school uses must be allowed, measures to achieve outdoor-to-indoor Noise Level Reduction (NLR) of at least 25 dB and 30 dB should be incorporated into building codes and be considered in individual approvals. Normal residential construction can be expected to provide a NLR of 20 dB, thus, the reduction requirements are often stated as 5, 10, or 15 dB over standard construction and normally assume mechanical ventilation and closed windows year round. However, the use of NLR criteria will not eliminate outdoor noise problems.
- (2) Measures to achieve NLR 25 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- (3) Measures to achieve NLR 30 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- (4) Measures to achieve NLR 35 must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- (5) Land use compatible provided special sound reinforcement systems are installed.
- (6) Residential buildings require a NLR of 25.
- (7) Residential buildings require a NLR of 30.
- (8) Residential buildings are not permitted.

Abbreviations:

Y(Yes) = Land Use and related structures compatible w/o restrictions.

N(No) = Land Use and related structures are not compatible and should be prohibited.

NLR = Noise Level Reduction (outdoor-to-indoor) to be achieved through incorporation of noise attenuation into the design and construction of the structure.

25, 30, or 35 = Land use and related structures general compatible; measures to achieve NLR of 25, 30, or 35 dB must be incorporated into design and construction of structures.

Regulatory Note.

The designations contained in this table do not constitute a Federal determination that any use of land covered by the program is acceptable or unacceptable under Federal, State, or local law. The responsibility for determining the acceptable and permissible land uses and the relationship between specific properties and specific noise contours rests with the local authorities. FAA determinations under Part 150 are not intended to substitute federally determined land uses for those determined to be appropriate by local authorities in response to locally determined needs and values in achieving noise compatible land uses.

Source: FAR Part 150, Appedix A, Table 1. "Land Use Compatibility with Yearly Day-Night Average Sound Levels."

TABLE 2:
State Department of Transportation Airports Division Recommendations for Local Land Use
Compatibility in Yearly Day-Night Average Sound Levels (L_{dn})

TYPE OF LAND USE	Yearly Day-Night Average Sound Level (L _{dn})					
	< 60	60-65	65-70	70-75	75-80	80-85
RESIDENTIAL:						
Low density residential, resorts, & hotels (w/ outdoor fac)	Y(a)	N(b)	N	N	N	N
Low density apartment w/ moderate outdoor use.....	Y	N(b)	N	N	N	N
High density apartment with limited outdoor use	Y	N(b)	N(b)	N	N	N
Transient lodgings (w/limited outdoor use)	Y	N(b)	N(b)	N	N	N
PUBLIC USE:						
Schools, day care centers, libraries, and churches.....	Y	N(c)	N(c)	N(c)	N	N
Hospitals, nursing homes, clinics, and health facilities.....	Y	Y(d)	Y(d)	Y(d)	N	N
Indoor auditoriums, and concert halls	Y(c)	Y(c)	N	N	N	N
Government services and offices serving the public.....	Y	Y	Y(d)	Y(d)	N	N
Transportation and parking	Y	Y	Y(d)	Y(d)	Y(d)	Y(d)
COMMERCIAL USE:						
Offices - government, business and professional.....	Y	Y	Y(d)	Y(d)	N	N
Wholesale/Retail: bldg. Mater., hardware, & heavy equip.....	Y	Y	Y(d)	Y(d)	Y(d)	Y(d)
Airport businesses - car rental, ticketing, lei stands, etc.....	Y	Y	Y(d)	Y(d)	N	N
Retail trade, restaurants, shp. Centers, financial inst., etc	Y	Y	Y(d)	Y(d)	N	N
Power plants, sweage treatment plants, & base yards.....	Y	Y	Y(d)	Y(d)	Y(d)	N
Studios w/o outdoor sets, broadcasting & Production fac.....	Y(c)	Y(c)	N	N	N	N
MANUFACTURING AND PRODUCTION:						
Manufacturing, general	Y	Y	Y(d)	Y(d)	Y(d)	N
Photographic and optical.....	Y	Y	Y(d)	Y(d)	N	N
Agriculture (except livestock) and forestry.....	Y	Y(e)	Y(e)	Y(e)	Y(e)	Y(e)
Livestock farming and breeding.....	Y	Y(e)	Y(e)	N	N	N
Mining and fishing, resource production and extraction.....	Y	Y	Y	Y	Y	Y
RECREATIONAL USE:						
Outdoor sports arenas and spectator sports	Y	Y(f)	Y(f)	N	N	N
Outdoor music shells, amphitheaters	Y(f)	N	N	N	N	N
Nature exhibits and zoos, neighborhood parks.....	Y	Y	Y	N	N	N
Amusements, beach parks, active playgrounds, etc	Y	Y	Y	Y	N	N
Public golf courses, riding stables, cemeteries, gardens, etc.....	Y	Y	N	N	N	N
Professional/resort sports facil., media event facil., etc	Y(f)	N	N	N	N	N
Extensive natural wildlife and recreation areas.....	Y(f)	N	N	N	N	N

Note: Letters in parentheses refer to the following notes.

- (a) A noise level of 60 L_{dn} does not eliminate all risks of adverse noise impacts from aircraft noise. However, the 60 L_{dn} planning level has been selected by the State Airports Division as an appropriate compromise between the minimal risk of level of 55 L_{dn} and the significant risk level of 65 L_{dn}.
- (b) Where the community determines that these uses should be allowed, Noise Level Reduction (NLR) measures to achieve interior levels of 45 L_{dn} or less should be incorporated into building codes and be considered in individual approvals. Normal local construction employing natural ventilation can be expected to provide an average NLR of approximately 9 dB. Total closure plus air conditioning may be required to provide additional outdoor-to-indoor NLR, but will not eliminate outdoor noise problems.
- (c) Because the L_{dn} noise descriptor system represents a 24-hour average of individual aircraft noise events, each of which can be unique in respect to amplitude, duration, and tonal content, the NLR requirements should be evaluated for the specific land use, interior acoustical requirements, and properties of the aircraft noise events. NLR requirements should not be based solely upon the exterior L_{dn} exposure level.
- (d) Measures to achieve required NLR must be incorporated into the design and construction of portions of these buildings where the public is received, office areas, noise sensitive areas, or where the normal noise level is low.
- (e) Residential buildings require NLR. Residential buildings should not be located where exterior noise is greater than 65 L_{dn}.
- (f) Impact of amplitude, duration, frequency, and tonal content of aircraft noise events should be evaluated.

Abbreviations:

Y(Yes) = Land Use and related structures compatible without restrictions.
 N(No) = Land Use and related structures are not compatible and should be prohibited.

Source: Airports Division, Department of Transportation, State of Hawaii

**TABLE 3:
Predicted Traffic Noise Levels With and Without the Project and Resulting Increases Due to the Project⁺**

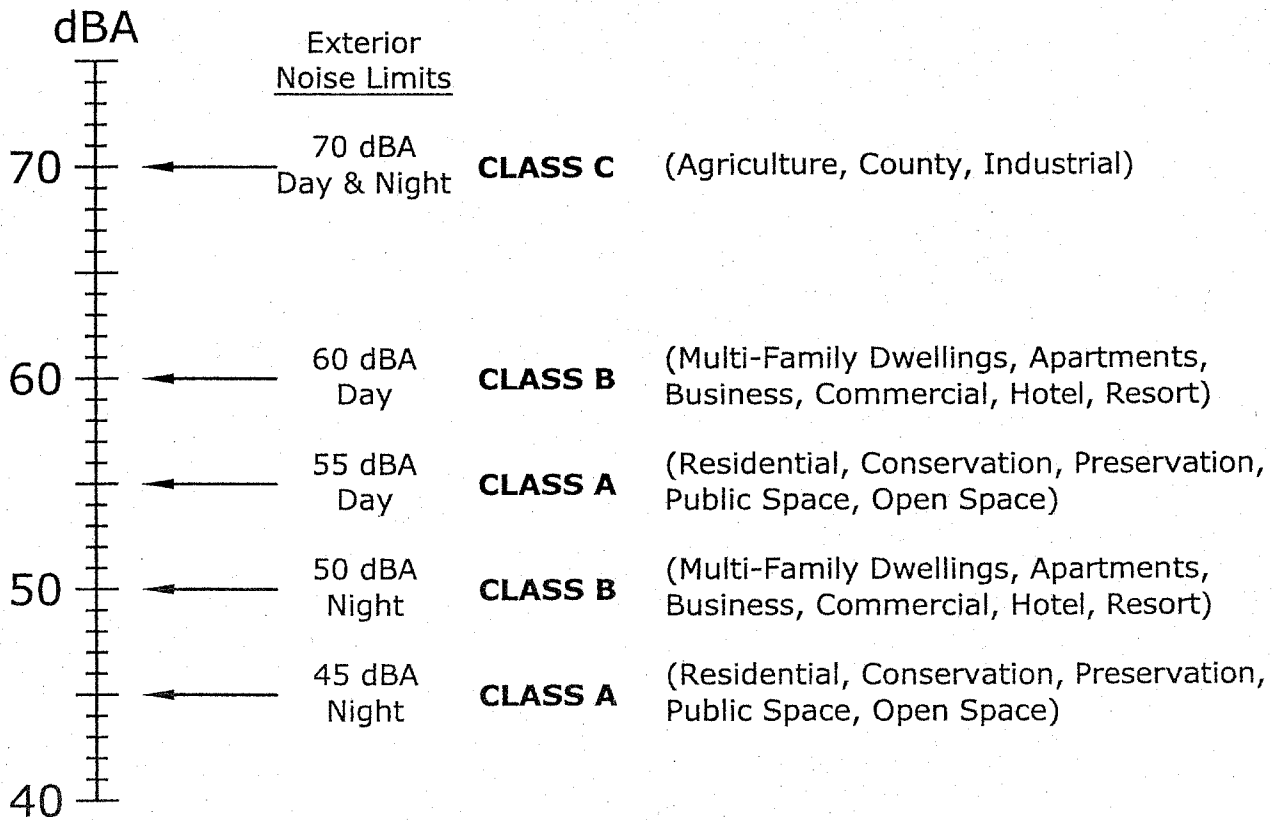
Noise levels shown in the table are based on peak-hour traffic volumes, and are expressed in A-weighted decibels (dBA).


	Location A*		Location B*		Location C*		Location D*	
	AM	PM	AM	PM	AM	PM	AM	PM
Existing (Calculated)	71.4	72.7	66.2	65.4	59.7	57.1	N/A	N/A
Future Without Project (2009)	72.0	73.1	64.3	65.1	61.9	60.8	63.6	63.6
Future Without Project (2012)	72.8	73.6	65.7	66.6	62.2	61.4	66.0	66.0
Future With Project (2009)	72.1	73.0	65.7	66.3	61.9	60.8	63.7	63.7
Future With Project (2012)	72.9	73.6	66.5	67.1	62.3	61.6	66.5	66.4
Future Increase Without Project (2009)								
Future Increase Without Project (2009)	0.6	0.4	-1.9	-0.3	2.3	3.7	N/A	N/A
Future Increase Without Project (2012)								
Future Increase Without Project (2012)	1.4	0.9	-0.5	1.2	2.5	4.3	N/A	N/A
Future Increase With Project (2009)								
Future Increase With Project (2009)	0.7	0.3	-0.5	0.9	2.2	3.7	N/A	N/A
Future Increase With Project (2012)								
Future Increase With Project (2012)	1.5	0.9	0.3	1.7	2.6	4.5	N/A	N/A
Future Increase Due to Project (2009)								
Future Increase Due to Project (2009)	0.1	-0.1	1.4	1.2	0.0	0.0	0.1	0.1
Future Increase Due to Project (2012)								
Future Increase Due to Project (2012)	0.1	0.0	0.8	0.5	0.1	0.2	0.5	0.4

⁺ The noise level calculations were based on the traffic study provided by the Traffic Consultant [Reference 9].

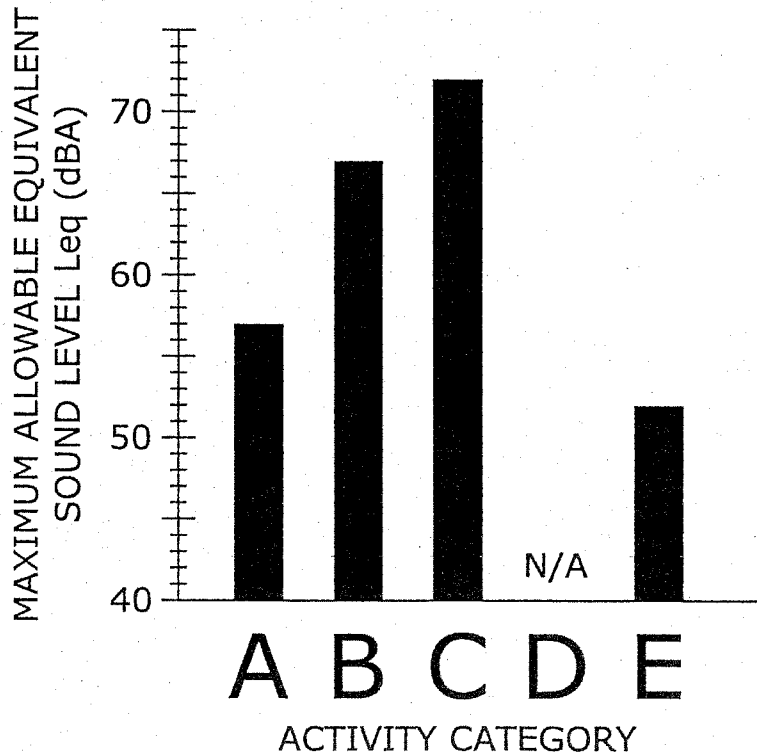
* Location A - 100 feet west of the Fort Weaver Road centerline
 Location B - 50 feet south of the Geiger Road centerline
 Location C - 50 feet north of the Renton Road centerline
 Location D - 80 feet north of the Kapolei Parkway Extension centerline

Zoning District	Day Hours (7 AM to 10 PM)	Night Hours (10 PM to 7 AM)
CLASS A Residential, Conservation, Preservation, Public Space, Open Space	55 dBA (Exterior)	45 dBA (Exterior)
CLASS B Multi-Family Dwellings, Apartments, Business, Commercial, Hotel, Resort	60 dBA (Exterior)	50 dBA (Exterior)
CLASS C Agriculture, Country, Industrial	70 dBA (Exterior)	70 dBA (Exterior)



 <p>D. L. ADAMS ASSOCIATES, LTD. 970 N. KALAHEO AVE, A-311 KAILUA, HAWAII 96734 808/254-3318 FAX 808/254-5295</p>	Hawaii Maximum Permissible Sound Levels for Various Zoning Districts		Figure No 1
	Ewa Industrial Park		
	Not to Scale		
	Date November 2006	Project No. 06-38	

ACTIVITY CATEGORY	ACTIVITY CATEGORY DESCRIPTION	MAXIMUM EQUIVALENT SOUND LEVEL L _{eq} (h)
A	LANDS ON WHICH SERENITY AND QUIET ARE OF EXTRAORDINARY SIGNIFICANCE AND SERVE AN IMPORTANT PUBLIC NEED AND WHERE THE PRESERVATION OF THOSE QUALITIES IS ESSENTIAL IF THE AREA IS TO CONTINUE TO SERVE ITS INTENDED PURPOSE.	57 dBA (EXTERIOR)
B	PICNIC AREAS, RECREATION AREAS, PLAYGROUNDS, ACTIVE SPORT AREAS, PARKS, RESIDENCES, MOTELS, HOTELS, SCHOOLS, CHURCHES, LIBRARIES, AND HOSPITALS.	67 dBA (EXTERIOR)
C	DEVELOPED LANDS, PROPERTIES, OR ACTIVITIES NOT INCLUDED IN ACTIVITY CATEGORIES A OR B ABOVE.	72 dBA (EXTERIOR)
D	UNDEVELOPED LAND	N/A
E	RESIDENCES, MOTELS, HOTELS, PUBLIC MEETING ROOMS, SCHOOLS, CHURCHES, LIBRARIES, HOSPITALS, AND AUDITORIUMS.	52 dBA (INTERIOR)



Federal Highways Administration Recommended Equivalent Hourly Sound Levels Based on Land Use

Ewa Industrial Park

Not to Scale

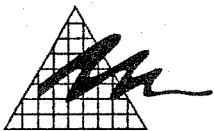
Date
November 2006

Project No.
06-38

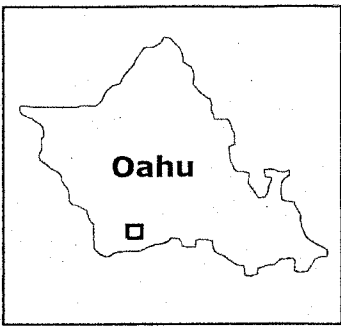
Drawn By
DFD

Figure No

2

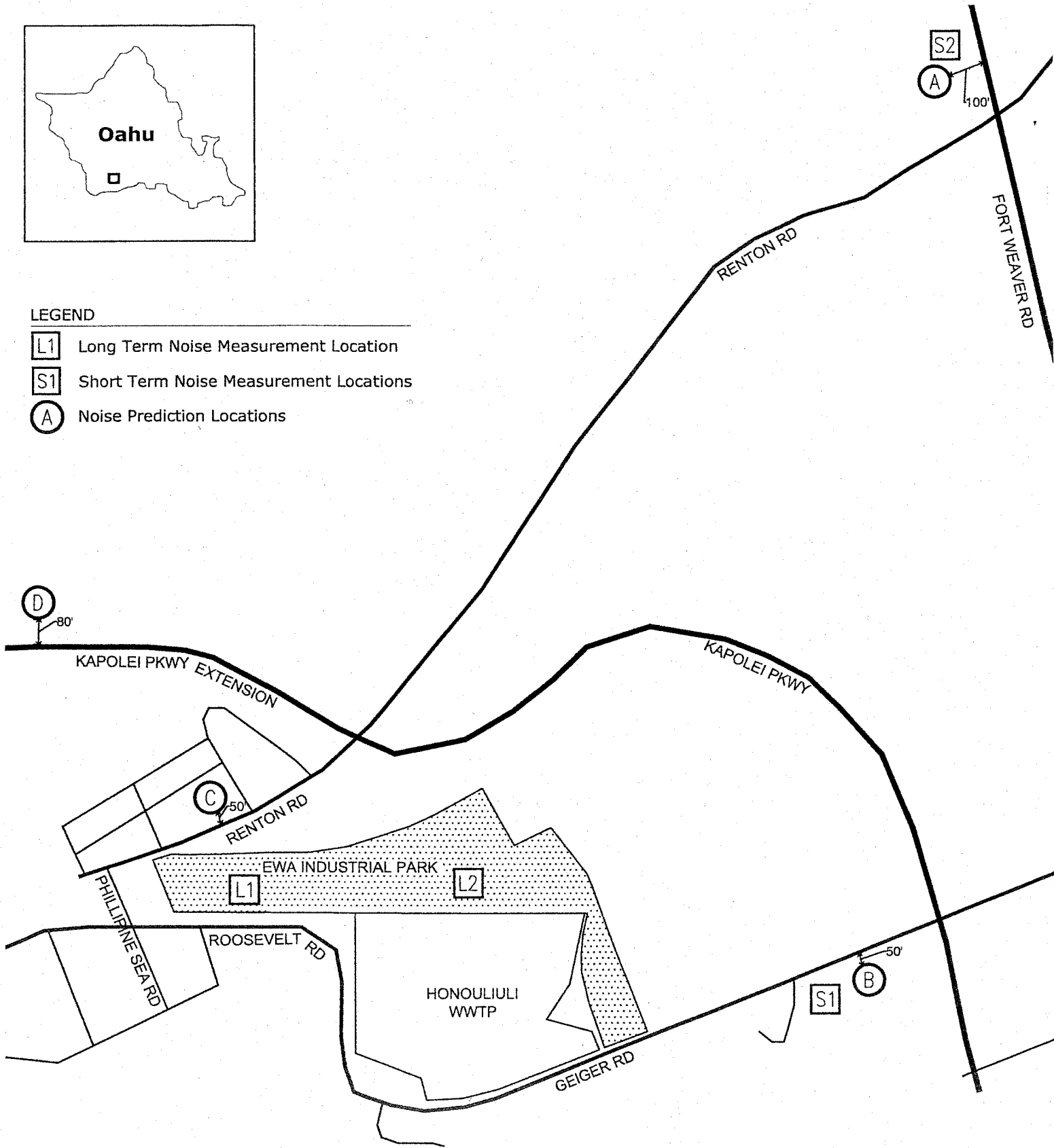


D. L. ADAMS ASSOCIATES, LTD.
970 N. KALAHEO AVE. A-311
KAILUA, HAWAII 96734
808/254-3318 FAX 808/254-5295



LEGEND

- L1 Long Term Noise Measurement Location
- S1 Short Term Noise Measurement Locations
- A Noise Prediction Locations

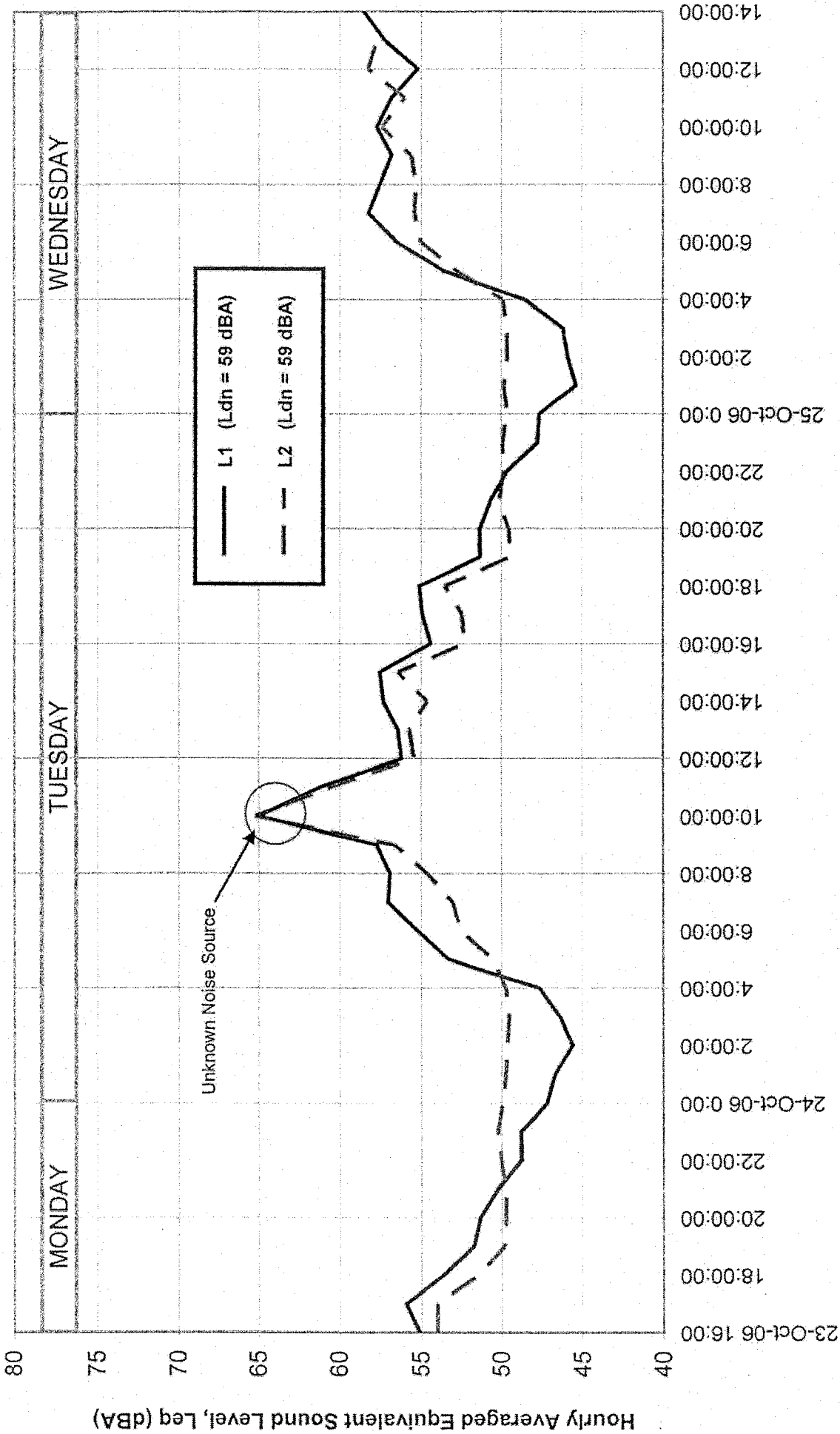


Noise Measurement and Prediction Locations

D. L. ADAMS ASSOCIATES, LTD.
 970 N. KALAHEO AVE, A-311
 KAILUA, HAWAII 96734
 808/254-3316 FAX 808/254-5295

Ewa Industrial Park		
Not to Scale		
Date November 2006	Project No. 06-38	Drawn By DFD

Figure No
3



Date & Time of Measurement

Graph of Long Term Noise Measurements

Figure No

4

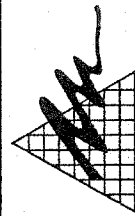
Ewa Industrial Park

Not to Scale

Drawn By
DFD

Project No.
06-38

Date
November 2006



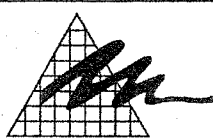
D. L. ADAMS ASSOCIATES, LTD.
 970 N. KALAHOE AVE. A-311
 KAILUA, HAWAII 96734
 808/234-3318 FAX 808/234-5295

NOISE LEVEL IN dBA AT 50 FEET (dBA)

60 70 80 90 100 110

EARTH MOVING	COMPACTORS (ROLLERS)	70-75			
	FRONT LOADERS	70-85			
	BACKHOES	70-95			
	TRACTORS	75-90			
	SCRAPERS GRADERS	78-88			
	PAVERS	82-85			
	TRUCKS	80-90			
MATERIAL HANDLING	CONCRETE MIXERS	75-85			
	CONCRETE PUMPS	80-85			
	CRANES (MOVABLE)	75-85			
	CRANES (DERRICK)	82-85			
STATIONARY	PUMPS	65-70			
	GENERATORS	70-80			
	COMPRESSORS	75-85			
IMPACT EQUIPMENT	PNEUMATIC WRENCHES	82-85			
	JACK HAMMERS AND ROCK DRILLS	80-90			
	PILE DRIVERS (PEAKS)	95-105			
OTHER	VIBRATORS	65-75			
	SAWS	70-75			

NOTE: BASED ON LIMITED AVAILABLE DATA SAMPLES

 <p>D. L. ADAMS ASSOCIATES, LTD. 970 N. KALAHEO AVE, A-311 KAILUA, HAWAII 96734 808/254-3318 FAX 808/254-5295</p>	Typical Sound Levels from Construction Equipment			Figure No
	Ewa Industrial Park			5
	Not to Scale			
	Date November 2006	Project No. 06-38	Drawn By TRB	

APPENDIX A

Acoustic Terminology

Acoustic Terminology

Sound Pressure Level

Sound, or noise, is the term given to variations in air pressure that are capable of being detected by the human ear. Small fluctuations in atmospheric pressure (sound pressure) constitute the physical property measured with a sound pressure level meter. Because the human ear can detect variations in atmospheric pressure over such a large range of magnitudes, sound pressure is expressed on a logarithmic scale in units called decibels (dB). Noise is defined as "unwanted" sound.

Technically, sound pressure level (SPL) is defined as:

$$\text{SPL} = 20 \log (P/P_{\text{ref}}) \text{ dB}$$

where P is the sound pressure fluctuation (above or below atmospheric pressure) and P_{ref} is the reference pressure, $20 \mu\text{Pa}$, which is approximately the lowest sound pressure that can be detected by the human ear. For example:

If $P = 20 \mu\text{Pa}$, then $\text{SPL} = 0 \text{ dB}$

If $P = 200 \mu\text{Pa}$, then $\text{SPL} = 20 \text{ dB}$

If $P = 2000 \mu\text{Pa}$, then $\text{SPL} = 40 \text{ dB}$

The sound pressure level that results from a combination of noise sources is not the arithmetic sum of the individual sound sources, but rather the logarithmic sum. For example, two sound levels of 50 dB produce a combined sound level of 53 dB, not 100 dB. Two sound levels of 40 and 50 dB produce a combined level of 50.4 dB.

Human sensitivity to changes in sound pressure level is highly individualized. Sensitivity to sound depends on frequency content, time of occurrence, duration, and psychological factors such as emotions and expectations. However, in general, a change of 1 or 2 dB in the level of sound is difficult for most people to detect. A 3 dB change is commonly taken as the smallest perceptible change and a 6 dB change corresponds to a noticeable change in loudness. A 10 dB increase or decrease in sound level corresponds to an approximate doubling or halving of loudness, respectively.

A-Weighted Sound Level

Studies have shown conclusively that at equal sound pressure levels, people are generally more sensitive to certain higher frequency sounds (such as made by speech, horns, and whistles) than most lower frequency sounds (such as made by motors and engines)¹ at the same level. To address this preferential response to frequency, the A-weighted scale was developed. The A-weighted scale adjusts the sound level in each frequency band in much the same manner that the

¹ D.W. Robinson and R.S. Dadson, "A Re-Determination of the Equal-Loudness Relations for Pure Tones," *British Journal of Applied Physics*, vol. 7, pp. 166 - 181, 1956.
(Adopted by the International Standards Organization as Recommendation R-226.)

human auditory system does. Thus the A-weighted sound level (read as "dBA") becomes a single number that defines the level of a sound and has some correlation with the sensitivity of the human ear to that sound. Different sounds with the same A-weighted sound level are perceived as being equally loud. The A-weighted noise level is commonly used today in environmental noise analysis and in noise regulations. Typical values of the A-weighted sound level of various noise sources are shown in Figure A-1.

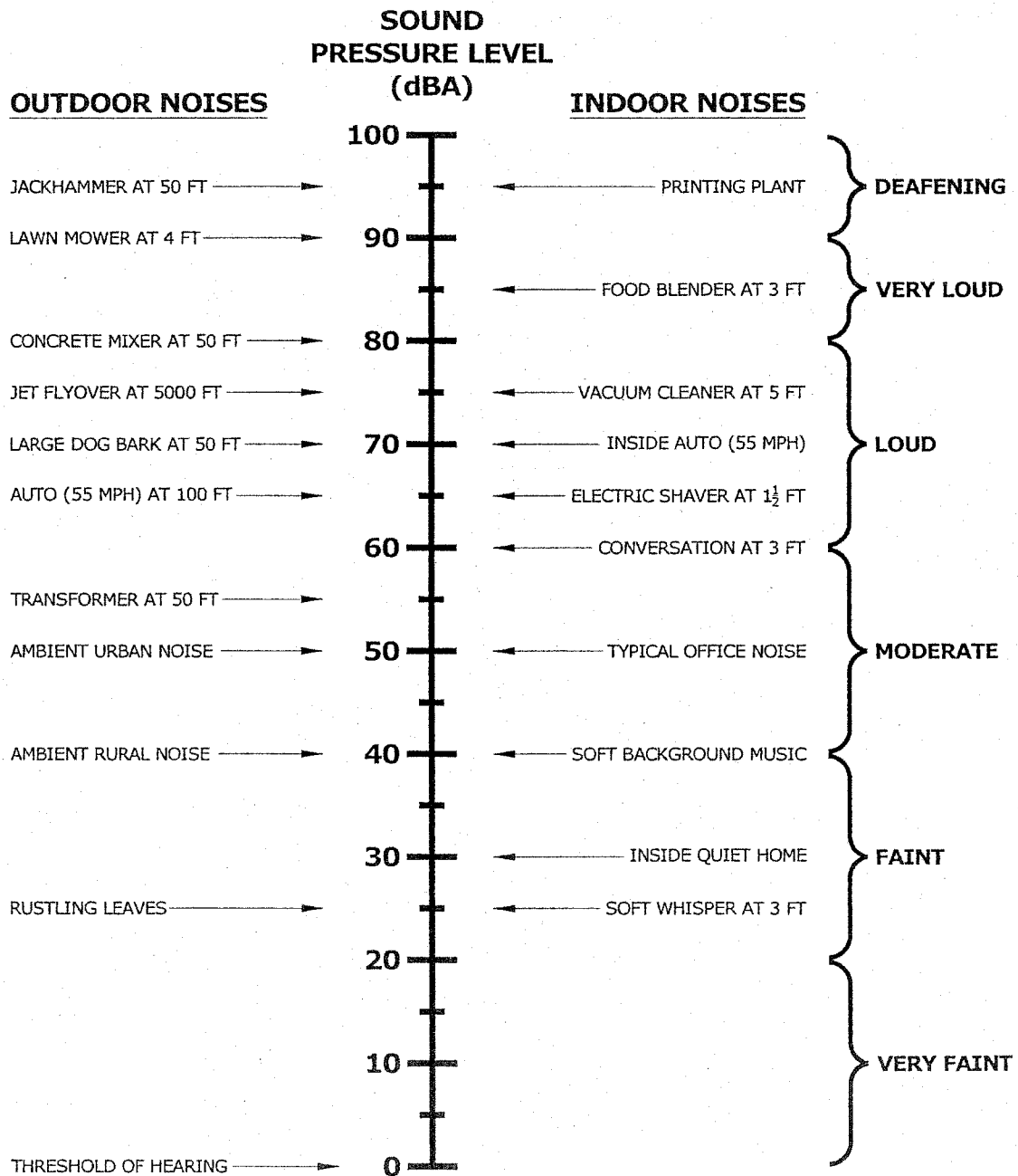


Figure A-1. Common Outdoor/Indoor Sound Levels

Equivalent Sound Level

The Equivalent Sound Level (L_{eq}) is a type of average which represents the steady level that, integrated over a time period, would produce the same energy as the actual signal. The actual *instantaneous* noise levels typically fluctuate above and below the measured L_{eq} during the measurement period. The A-weighted L_{eq} is a common index for measuring environmental noise. A graphical description of the equivalent sound level is shown in Figure A-2.

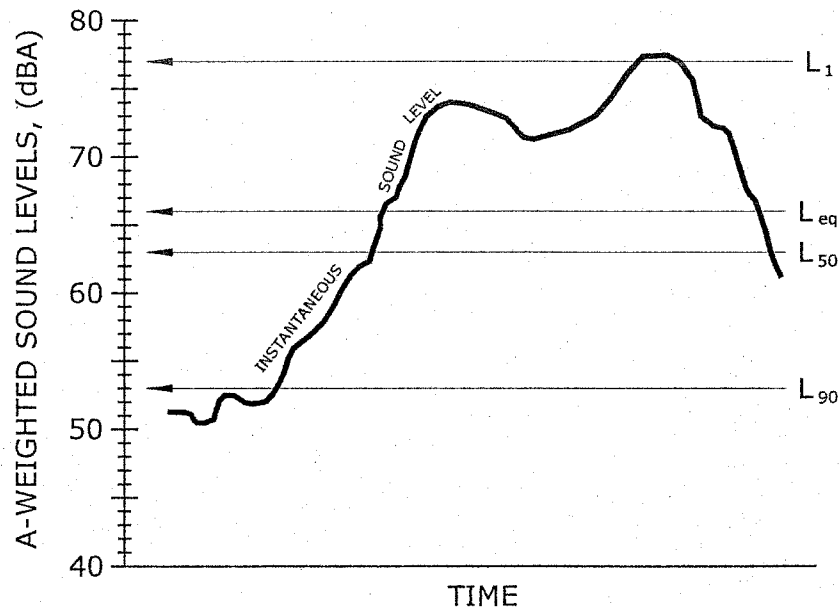


Figure A-2. Example Graph of Equivalent and Statistical Sound Levels

Statistical Sound Level

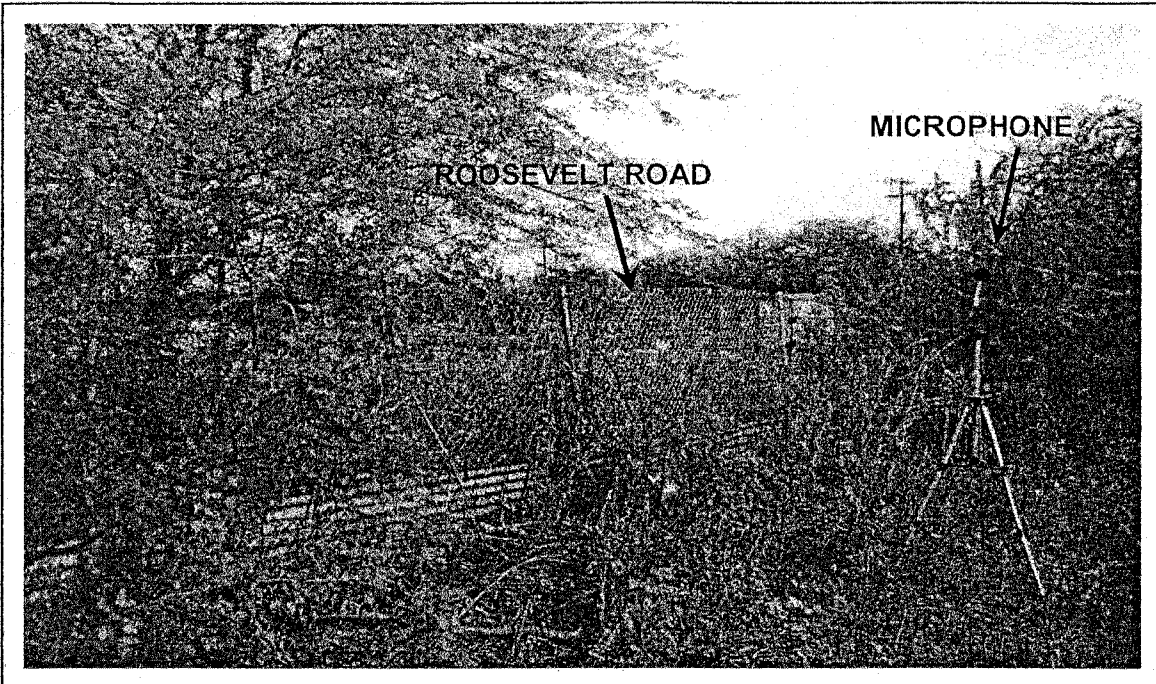
The sound levels of long-term noise producing activities such as traffic movement, aircraft operations, etc., can vary considerably with time. In order to obtain a single number rating of such a noise source, a statistically-based method of expressing sound or noise levels has been developed. It is known as the Exceedence Level, L_n . The L_n represents the sound level that is exceeded for $n\%$ of the measurement time period. For example, $L_{10} = 60$ dBA indicates that for the duration of the measurement period, the sound level exceeded 60 dBA 10% of the time. Typically, in noise regulations and standards, the specified time period is one hour. Commonly used Exceedence Levels include L_{01} , L_{10} , L_{50} , and L_{90} , which are widely used to assess community and environmental noise. A graphical description of the equivalent sound level is shown in Figure A-2.

Day-Night Equivalent Sound Level

The Day-Night Equivalent Sound Level, L_{dn} , is the Equivalent Sound Level, L_{eq} , measured over a 24-hour period. However, a 10 dB penalty is added to the noise levels recorded between 10 p.m. and 7 a.m. to account for people's higher sensitivity to noise at night when the background noise level is typically lower. The L_{dn} is a commonly used noise descriptor in assessing land use compatibility, and is widely used by federal and local agencies and standards organizations.

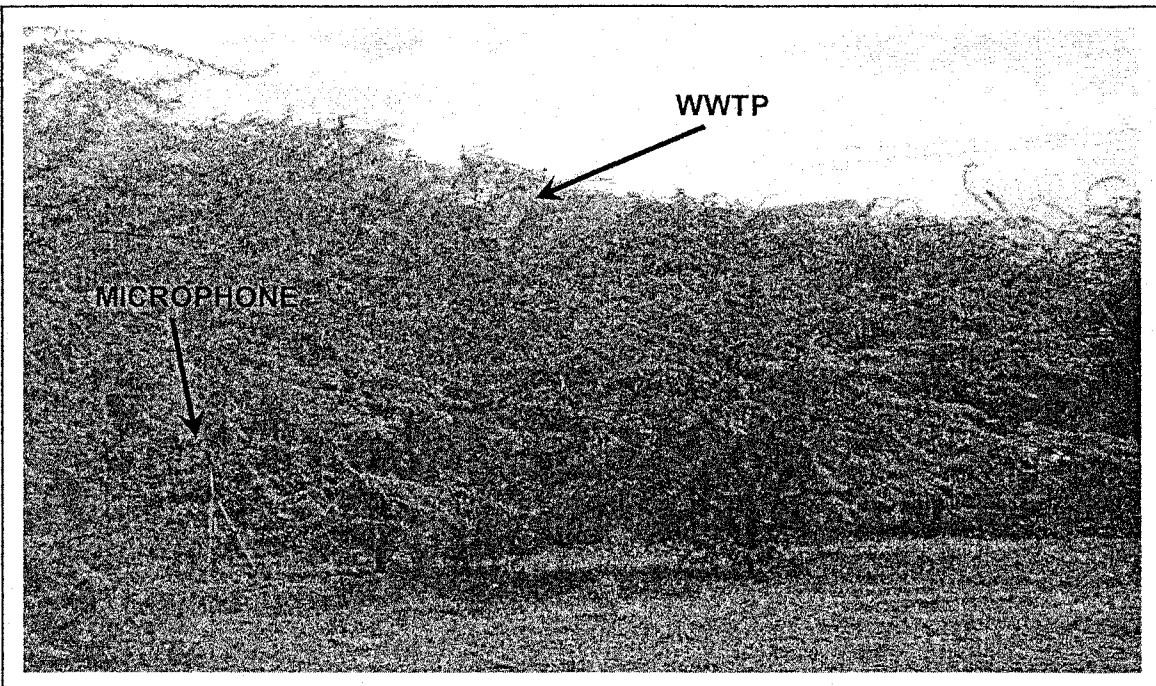
APPENDIX B

Photographs at Project Site



Location L1:

Approximately 120 feet north of Roosevelt Road in the northwest portion of the Ewa Industrial Park project site.



Location L2:

Approximately 200 feet north of the Honouliuli Wastewater Treatment Plant (WWTP) fence near the middle of the Ewa Industrial Park property.

APPENDIX VII

CULTURAL IMPACT ASSESSMENT REPORT

**Cultural Impact Assessment Report for the
'Ewa Industrial Park Project,
Honouliuli Ahupua'a, 'Ewa District, O'ahu Island
TMK: (1) 9-1-069:003**

**Prepared for
Mr. Valentine Peroff, Jr.**

**Prepared by
Kēhaulani E. Souza, B.A.,
David W. Shideler, M.A.,
and
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai'i, Inc.
Kailua, Hawai'i
(Job Code: HONOU 5)**

January 2007

O'ahu Office
P.O. Box 1114
Kailua, Hawai'i 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

www.culturalsurveys.com

Maui Office
16 S. Market Street, Suite 2N
Wailuku, Hawai'i 96793
Ph: (808) 242-9882
Fax: (808) 244-1994

Management Summary

Reference	Cultural Impact Assessment of the 'Ewa Industrial Park Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island
Date	January 2007
Project Number (s)	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: HONOU 5
Project Location	The project area is a 48.18-acre fenced lot, bound on the north by the existing right-of-way along the track of the Oahu Railway and Land Co., which runs parallel to the <i>makai</i> (inland) side of Renton Road near the 'Ewa Villages. The parcel is bound on all other sides by existing properties; a southern dog-leg section extends south to Geiger Road. The project area is the entire TMK parcel 9-1-069:003.
Land Jurisdiction	Private, Mr. Valentine Peroff
Project Description	The landowner plans to develop the project area into an industrial park.
Project Acreage	48.18 acres
Document Purpose	<p>The cultural impact assessment provides information pertinent to the assessment of the proposed project's cultural impacts [per Hawai'i Revised Statutes (HRS) Act 50, Chapter 343 and the Office of Environmental Quality's <i>Guidelines for Assessing Cultural Impacts</i>]. This document was prepared to support the project's environmental review under HRS Chapter 343.</p> <p>The process for evaluating cultural impacts is constantly evolving. There continues to be gray areas and unresolved matters pertaining to traditional access, gathering rights, and other cultural issues. Act 50 is an attempt to balance between traditional lifestyles, development, and economic growth.</p>
Consultation Effort	CSH consulted with various Hawaiian organizations, agencies and community members were contacted in order to identify potentially knowledgeable individuals with cultural expertise and/or knowledge of the Project Area and the surrounding area. CSH consulted with the State Historic Preservation Division, the Office of Hawaiian Affairs, the O'ahu Island Burial Council, former Ewa Plantation employees and the 'Ewa Neighborhood Board. Information gathering sessions with community members with ties to Honouliuli and neighboring <i>ahupua'a</i> who live or had lived in the region or who, in the past, used the area for traditional and cultural purposes including, Arline Eaton, Kenneth Soma, and Charles Nakamatsu along with many others in the community. Based on recommendations from organizations and the community, individuals were contacted for information gathering sessions (See Community Contact Table 2).

<p>Cultural Impact Recommendations</p>	<p>Based on the evidence gathered for this evaluation, no contemporary or continuing cultural practices were discovered within the project area. However, two study participants mentioned that the 'Ewa plains is a well-known place for sinkhole burials.</p> <p>It should be noted that subsurface properties associated with former traditional Hawaiian activities in the project area, such as artifacts, cultural layers, and burials may be present despite the decades of modern activities. As a precautionary measure, CSH recommends that personnel involved in the 'Ewa Industrial Park development project be informed of the possibility of inadvertent cultural finds, and should be made aware of the appropriate notification measures to follow. In the unlikely event that previously unidentified subsurface historic properties are encountered by project construction, the project proponents should immediately stop work and contact SHPD's O'ahu Office [Tel. (808) 692-8015].</p>
--	---

Table of Contents

Management Summary	ii
Section 1 Introduction	1
1.1 PROJECT BACKGROUND	1
1.2 SCOPE OF WORK	1
1.3 ENVIRONMENTAL SETTING.....	5
1.3.1 Natural Environment.....	5
1.3.2 Built Environment	5
Section 2 Methods	7
2.1 METHODS.....	7
2.2 DOCUMENT REVIEW	7
Section 3 Background Research	9
3.1 MYTHOLOGICAL AND TRADITIONAL ACCOUNTS	9
3.1.1 The Naming of 'Ewa and Honouliuli	9
3.1.2 Pu'uokapolei and the Plains of Kaupe'a.....	11
3.2 HISTORIC BACKGROUND	16
3.2.1 Pre-Contact and Early Post-Contact Periods	16
3.2.2 Observations of Early Explorers and Foreign Residents	20
3.3 MID-NINETEENTH CENTURY AND THE MAHELE	21
3.3.1 Early Ranching in on the 'Ewa Plain.....	22
3.3.2 Other Enterprises in Campbell Lands.....	24
3.4 MID-NINETEENTH CENTURY TO PRESENT.....	25
3.4.1 History of the Oahu Railway and Land Company (OR&L).....	25
3.5 HISTORY OF THE EWA PLANTATION COMPANY	27
3.5.1 Sugar Cane Cultivation.....	27
3.5.2 Workers Housing and the 'Ewa Villages.....	29
Section 4 Previous Archaeological Research	31
4.1 EARLY ARCHAEOLOGICAL SURVEYS	31
4.2 PREVIOUS ARCHAEOLOGICAL WORK NEAR HONOULIULI TOWN	32
4.2.1 West Loch Estates.....	32
4.2.2 NAVMAG – West Loch.....	35
4.2.3 'Ewa Villages.....	36
4.2.4 'Ewa Gentry Project	36
4.3 MAIN AREAS OF SETTLEMENT.....	37
4.3.1 Honouliuli Settlement Patterns	37
4.3.2 The Coastal Zone - Kalaeloa (Barbers Point), Ko'olina (West Beach).....	38
4.3.3 Honouliuli Taro Lands.....	39
4.3.4 Pu'uku'ua: Inland Settlement	40
Section 5 Community Consultation.....	41
5.1 INTRODUCTION	41
Section 6 TRADITIONAL CULTURAL PRACTICES.....	44

6.1 GATHERING FOR PLANT RESOURCES.....	44
6.2 BURIALS.....	45
6.3 HISTORIC PROPERTIES	45
6.4 TRAILS	46
6.5 <i>WAHI PANA</i> (STORIED PLACES).....	46
Section 7 Summary	51
Section 8 References Cited	53

List of Figures

Figure 1. US Geological Survey topographic map, Ewa Quad (2003), showing project area location (hatched area).....	3
Figure 2. Tax Map Key 1-9-1-069, showing project area (Lot 3)	4
Figure 3. Aerial photograph of the project area.....	4
Figure 4. NRCS (2006) map, showing soils in the project area	6
Figure 5. Western, open section of the project area.....	8
Figure 6. Eastern, vegetated and bulldozed section of the project area	8
Figure 7. Place Names of Honouliuli (map adapted from Sterling and Summers 1978); dark circles mark <i>heiau</i> ; numbered sites (133-139,146) from McAllister (1933).....	10
Figure 8. Portion of 1825 Map of the South Coast of Woahoo (O'ahu) and Honolulu by Lieut. C.R. Malden from the British ship the <i>Blonde</i>	18
Figure 9. Map by Tuggle and Tomonari-Tuggle (1997:32), compiled from historic maps, showing features of the 'Ewa Plain from 1825 to World War II.....	19
Figure 10. Portion of 1881 Hawaiian Government Survey map by C.J. Lyons, showing project area location within LCA 11218; also note location of Honouliuli Taro Lands adjacent to the West Loch of Pearl Harbor, and trail through 'Ewa passing by Pu'uokapolei.....	23
Figure 11. 1902 map showing relationship of Ewa Plantation and the Oahu Sugar Co. plantation; also note location of sisal growing area.....	26
Figure 12. 1939 map of Ewa Plantation Co. lands, showing project area southwest of "Villages" and northeast of "Sisal" growing area	28
Figure 13. 1930 US Geological Survey map, showing no structures in the project area; note OR&L railroad tracks on the northern boundary of the project area.....	30
Figure 14. U.S. Geological Survey topographic map, showing previous archaeological survey areas near the current project area	33

List of Tables

Table 1. Summary of previous archaeological work near the project area.....	34
Table 2 Community Consultation.....	42
Table 3: Native Plants in Honouliuli	44

Section 1 Introduction

1.1 Project Background

At the request of Mr. Valentine Peroff, Jr. (99-880 Iwaena Street, Aiea, Hawai'i 96701), Cultural Surveys Hawai'i, Inc. (CSH) has completed this Cultural Impact Assessment report for the 'Ewa Industrial Park Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island (TMK: [1] 9-1-069:003) (Figure 1 to Figure 3). The landowner, Mr. Peroff, plans to develop this area into an industrial park.

The project area is a 48.18-acre fenced lot, bound on the north by the right-of-way along the existing track of the Oahu Railway and Land Co., which runs parallel to the *makai* (inland) side of Renton Road. The parcel is bound on all other sides by existing properties; a southern dog-leg section extends south to Geiger Road.

The cultural impact assessment provides information pertinent to the assessment of the proposed project's cultural impacts [per Hawai'i Revised Statutes (HRS) Act 50, Chapter 343 and the Office of Environmental Quality's Guidelines for Assessing Cultural Impacts]. This document was prepared to support the proposed project's environmental review under HRS Chapter 343.

The process for evaluating cultural impacts is constantly evolving. There continue to be gray areas and unresolved matters pertaining to traditional access, gathering rights, and other cultural issues. Act 50 is an attempt to balance between traditional lifestyles, development, and economic growth.

1.2 Scope of Work

This study is meant to satisfy requirements related to Cultural Impact Assessments (CIAs) under Act 50, Chapter 343, Hawai'i Revised Statutes, 2000.

The scope of work includes:

1. Examination of historical documents, Land Commission Awards, historic maps, with the specific purpose of identifying traditional Hawaiian activities including gathering of plant, animal and other resources or agricultural pursuits as may be indicated in the historic record.
2. A review of the existing archaeological information pertaining to the properties and vicinity as they may allow us to reconstruct traditional land use activities and identify and describe the cultural resources, practices and beliefs associated with the parcels and identify present uses, if appropriate.
3. Conduct consultations and oral interviews with persons knowledgeable about the historic and traditional practices in the project area and region. We anticipate utilizing our previous contact list to facilitate the interview process.

Preparation of one report on items 1-3 summarizing the information gathered related to traditional practices and land use. The report will assess the impact of the proposed actions on the cultural practices and features identified within the project area.

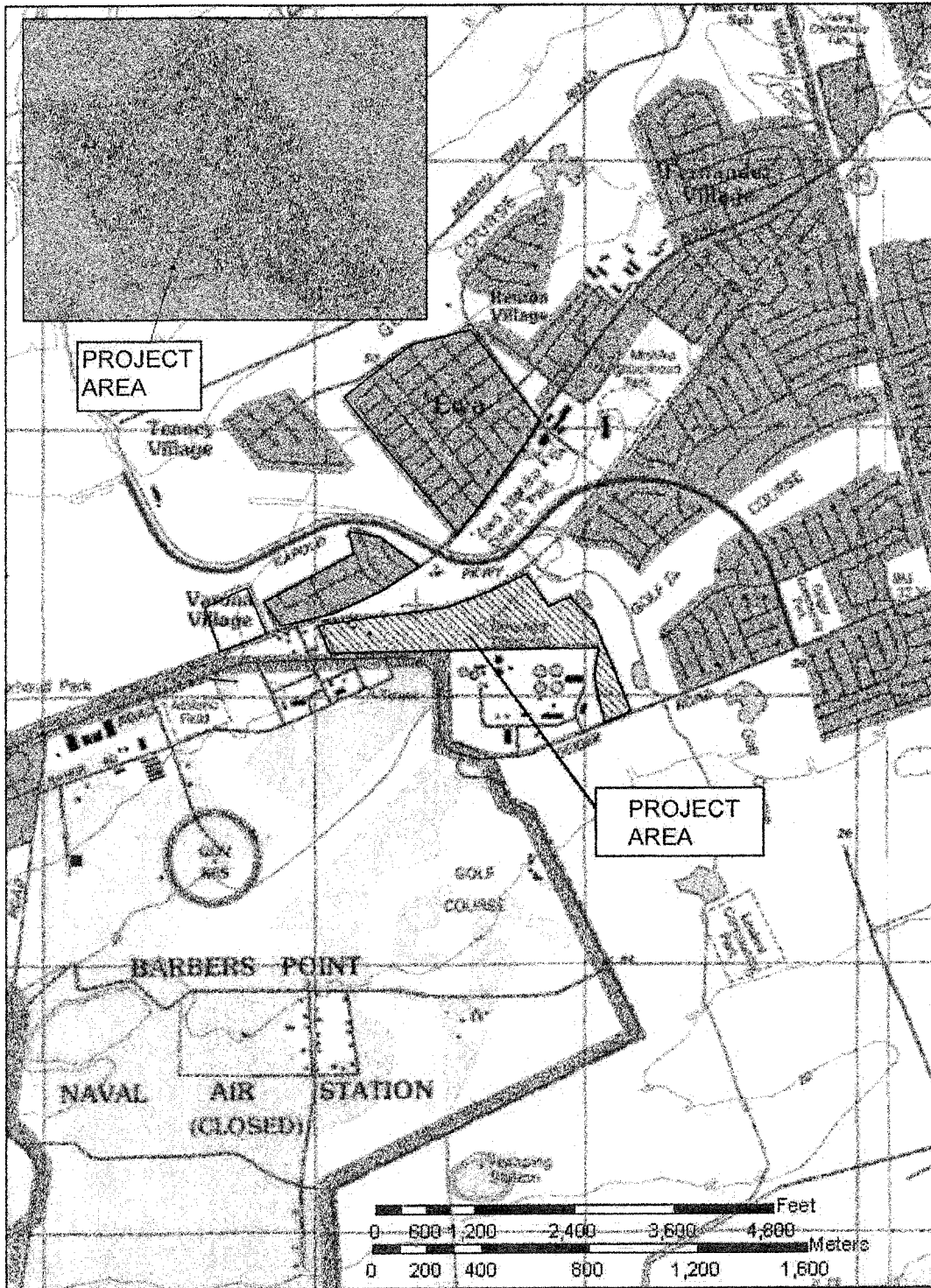


Figure 1. US Geological Survey topographic map, Ewa Quad (2003), showing project area location (hatched area)

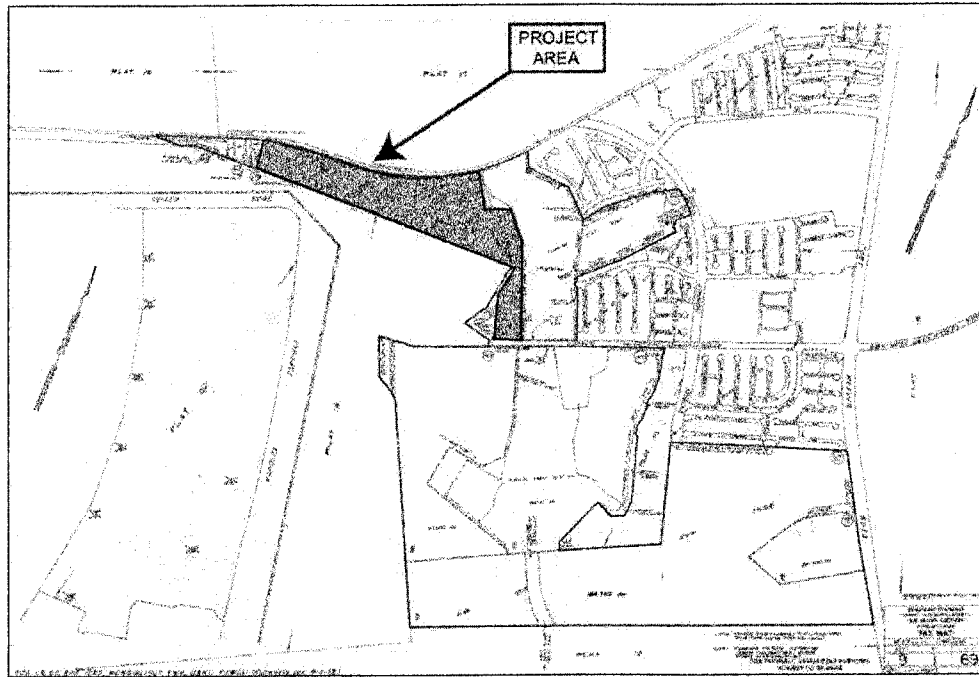


Figure 2. Tax Map Key 1-9-1-069, showing project area (Lot 3)

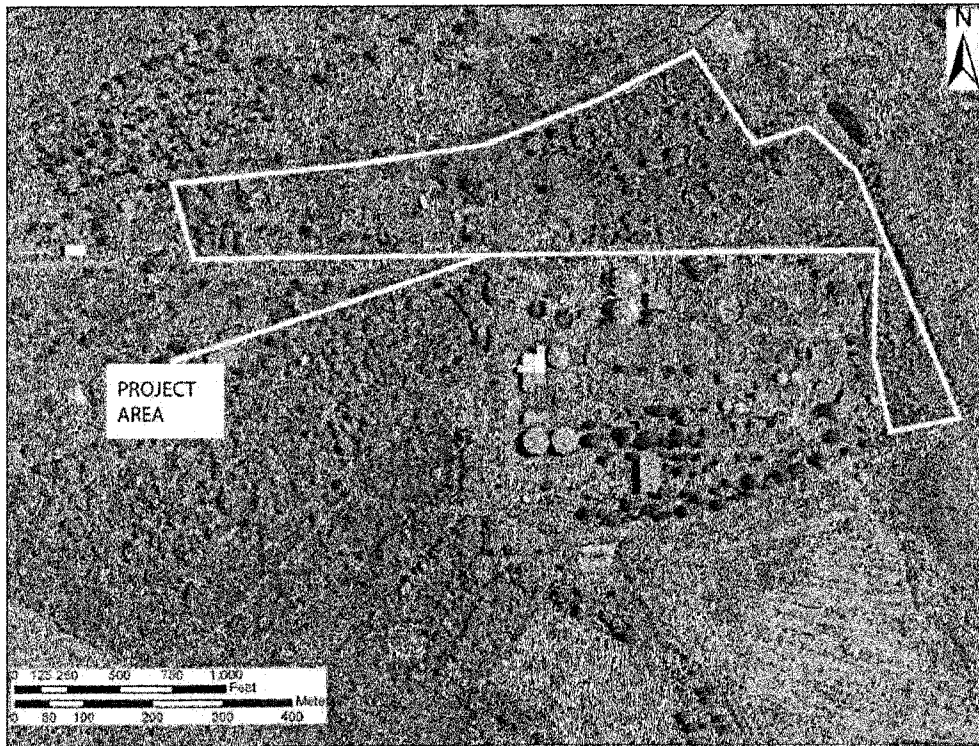


Figure 3. Aerial photograph of the project area

1.3 Environmental Setting

1.3.1 Natural Environment

Honouliuli Ahupua'a is the largest traditional land unit on O'ahu, extending from the West Loch of Pearl Harbor in the east, to the border of Nānākuli Ahupua'a at Pili o Kahe in the west. Honouliuli Ahupua'a includes approximately 19 kilometers, or 12 miles, of open coastline from One'ula westward to Pili o Kahe. The *ahupua'a* extends *mauka* (inland) from West Loch nearly to Schofield Barracks in Wahiawā. The western boundary is the Wai'anae Mountain crest running north as far as Pu'u Hāpapa (or to the top of Ka'ala Mountain, according to some).

Lying in the lee of the Wai'anae mountain range, the project area is one of the driest areas of O'ahu with most of the area averaging about 18 inches of rainfall annually (Juvik and Juvik 1998:56). Temperatures range between 60° to 90°F through the year; the highest temperatures are in August and September (Armstrong 1973). Elevation in the project area ranges from 30-50 ft (feet), or 10 to 15 m (meters) AMSL (above mean sea level). The project area is located on the 'Ewa Plain, which is a Pleistocene (>38,000 years old) reef platform overlain by alluvium from the southern end of the Wai'anae Mountain Range. This alluvium supported commercial sugar cane cultivation for over a century.

In pre-contact Hawai'i, the project area would have been mostly lowland dry shrub and grassland, dominated by species such as *wiliwili* (*Erythrina sandwicensis*), *lama* (*Diospyros ferrea*), sandalwood (*Santalum* sp.), 'a'ali'i (*Dodonea eriocarpa*), scrub 'ōhi'a (*Metrosideros collina*) and *pili* grass (*Heteropogon contortus*). In contrast, the non-cleared portions of the project area are currently dominated by introduced species such as *kiawe* and the prickly Lions-Ear (*Leonotis nepaetaefolia*).

At least 75% of the project area (Figure 4) is covered with soils of the Mamala series, Mamala stony silty clay loam (MnC). This series consists of shallow, well-drained soils, which formed in alluvium deposited over coral limestone and consolidated calcareous sand. The southeastern dogleg of the project area is covered with a mosaic of soils consisting of Ewa silty clay loam (EmA), Honouliuli Clay (HxA), and Waialua silty clay (WkA). The Ewa Series consists of well-drained soils in basins and on alluvial fans. These soils developed in alluvium derived from basic igneous rock. The Honouliuli Series consists of well-drained soils on coastal plains, which developed in alluvium derived from basic igneous material. The Waialua series consists of moderately well-drained soils on alluvial fans. These soils developed in alluvium weathered from basic igneous rock. All four soils in the project area are used for sugarcane, truck crops, orchards, and pasture. (Foote et al. 1972, online at <http://www.ctahr.hawaii.edu/soilsurvey/soils.htm>).

1.3.2 Built Environment

The project area is currently covered with two tenants' houses, a few farm buildings, fenced cow, pig, and goat/sheep pastures, and rooster coops. A central open portion of the project area is leased for private parties, including the annual Bon Dance Festival of the Hongwanji Mission, this year held on June 17.

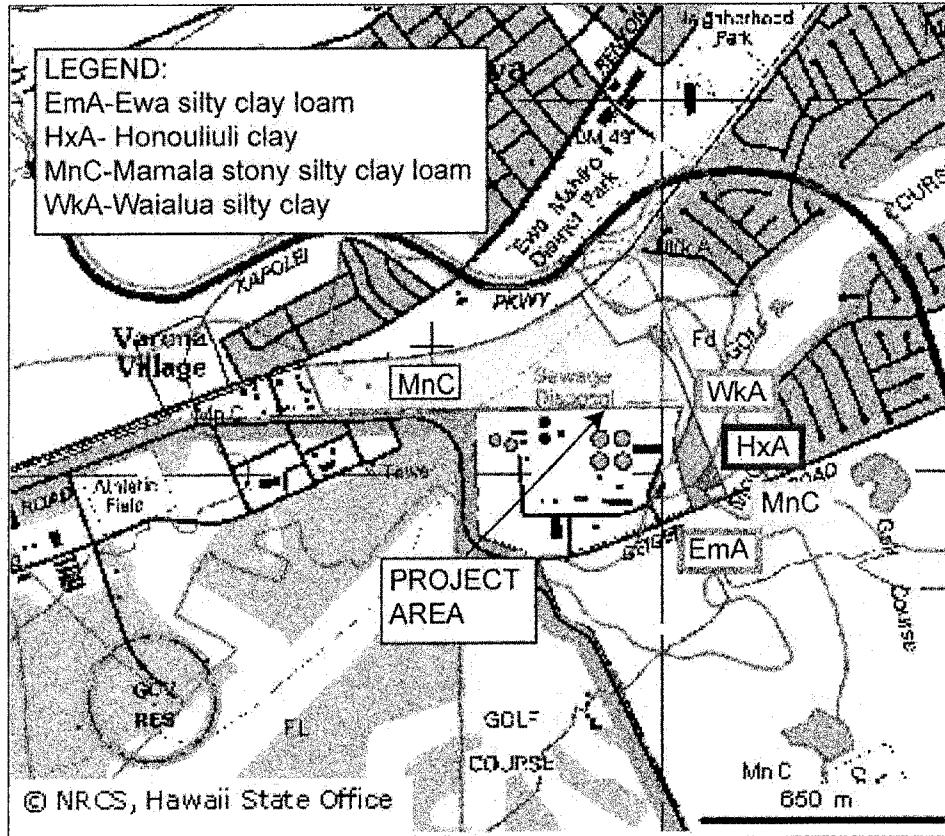


Figure 4. NRCS (2006) map, showing soils in the project area

Section 2 Methods

2.1 Methods

Historical documents, maps and existing archaeological information were researched at the State Historic Preservation Division library, Cultural Surveys Hawai'i library, and the University of Hawai'i's Hamilton library. The Office of Hawaiian Affairs, O'ahu Island Burial Council, Hui Mālama O Nā Kūpuna, and members of other community organizations were contacted in order to identify potentially knowledgeable individuals with cultural expertise and or knowledge of the study area and the vicinity.

2.2 Document Review

Background research included a review of previous archaeological studies on file at the State Historic Preservation Division, and a review of geology and cultural history documents at Hamilton Library at the University of Hawai'i, the Hawai'i Public Library, and the Archives of the Bishop Museum. Further research included a study of historic maps at the Survey Division of the Department of Accounting and General Services. Information on LCAs was accessed through Waihona 'Āina Corporation's Māhele Data Base (<http://www.waihona.com/>).

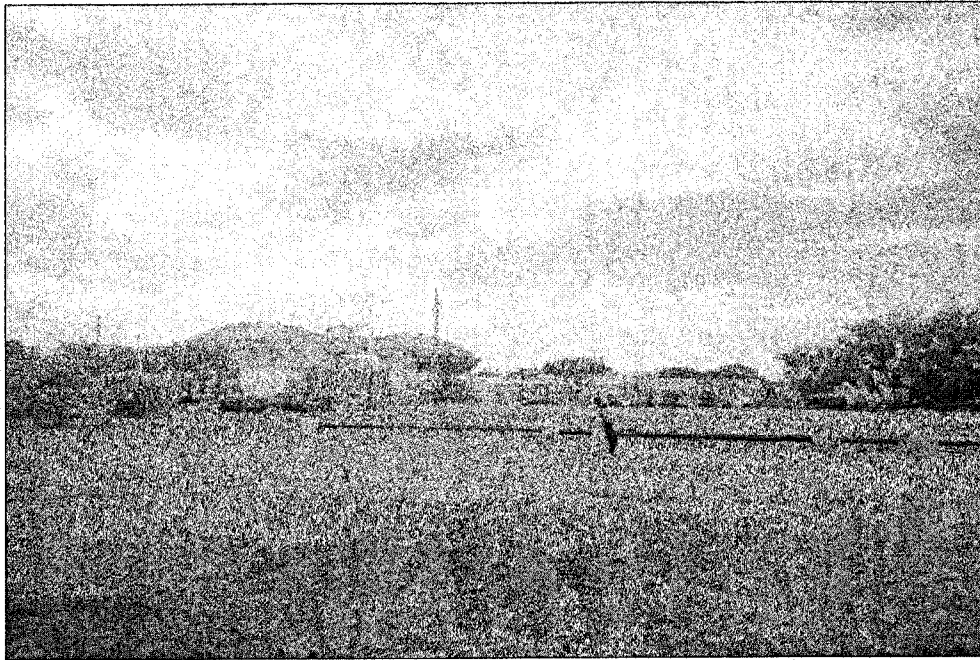


Figure 5. Western, open section of the project area



Figure 6. Eastern, vegetated and bulldozed section of the project area

Section 3 Background Research

As noted, the project area is located within the dry, arid 'Ewa Plain. Kalo'i Gulch, the only source for water in the pre-contact period is located approximately 75 m (250 ft) to the east of the project area. Puku'i et al. (1974:77) translates the name Kalo'i to mean, "the taro patch," and Sterling and Summers (1978:35) relate a number of vignettes regarding the "Waihuna" or "Punahuna" hidden spring. Ida E.K. von Holt (in Sterling and Summers 1978:35) related the account of "two old Hawaiians" that the hidden spring "had been one of the principle sources of water for all that country, which was quite heavily populated before the smallpox epidemic of 1840. This spring was probably located *mauka* (inland) of the project area. Possibly the naming of 'Ewa, which means "crooked" relates to the meandering nature of Kalo'i Stream, which makes a sharp 60° turn to the east just north of the current project area.

3.1 Mythological and Traditional Accounts

The traditions of Honouliuli Ahupua'a have been compiled by several authors, in studies by Sterling and Summers (1978), Hammatt and Folk (1981), Kelly (1991), Charvet-Pond and Davis (1992), Maly (1992), and Tuggle and Tomonari-Tuggle (1997). Some of the traditional themes associated with this area include connections with Kahiki, the traditional homeland of Hawaiians in central Polynesia. There are several versions of the chief Kaha'i leaving from Kalaeloa for a trip to Kahiki; on his return to the Hawaiian Islands he brought back the first breadfruit (Kamakau 1991b:110) and planted it at Pu'uloa, near Pearl Harbor in 'Ewa (Beckwith 1940:97). Several stories associate places in Honouliuli to the gods Kāne and Kanaloa, with the Hawaiian pig god Kamapua'a and the Hina family, and with the sisters of Pele, the Hawaiian volcano goddess, all of whom have strong connections with Kahiki (Kamakau 1991b:111; Puku'i et al. 1974:200). The locations of traditional places names for Honouliuli are illustrated in Figure 7.

3.1.1 The Naming of 'Ewa and Honouliuli

Honouliuli is the largest *ahupua'a* in the *moku* (district) of 'Ewa. One translation of the name for this district is given as "unequal" (*Saturday Press* Aug. 11, 1883). Others translate the word as "strayed" and associate it with a legend of the gods, Kāne and Kanaloa.

When Kane and Kanaloa were surveying the islands they came to Oahu and when they reached Red Hill saw below them the broad plains of what is now Ewa. To mark boundaries of the land they would throw a stone and where the stone fell would be the boundary line. When they saw the beautiful land lying below them, it was their thought to include as much of the flat level land as possible. They hurled the stone as far as the Waianae range and it landed somewhere, in the Waimanalo section. When they went to find it, they could not locate the spot where it fell. So Ewa (strayed) became known by the name. The stone that strayed [Told to E.S. by Simeon Nawaa, March 22, 1954; cited in Sterling and Summers 1978:1].

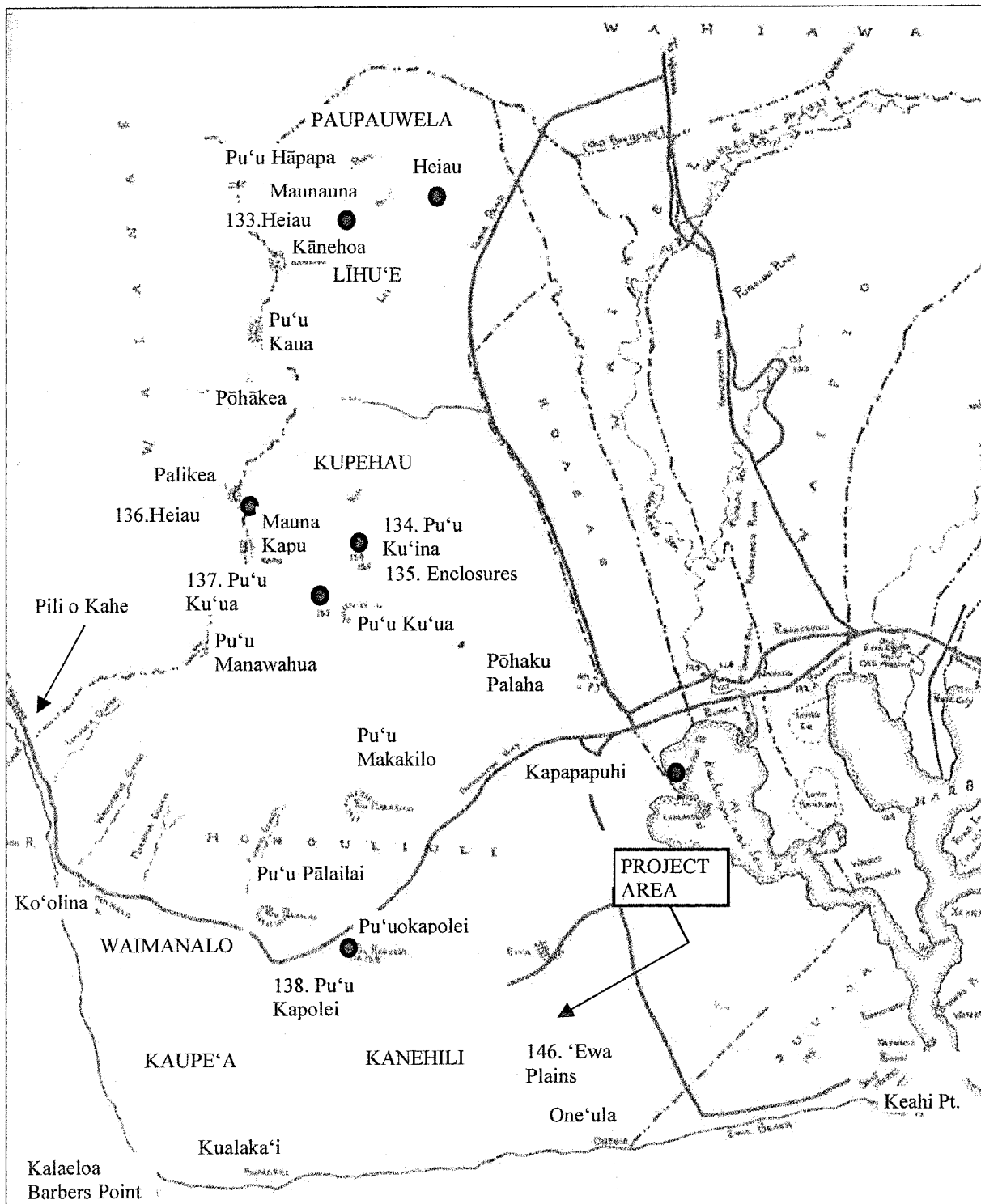


Figure 7. Place Names of Honouliuli (map adapted from Sterling and Summers 1978); dark circles mark *heiau*; numbered sites (133-139,146) from McAllister (1933)

It seems likely that the boundaries of the western-most *ahupua'a* of 'Ewa were often contested with Wai'anae people. The 'Ewa people could cite divine sanction that the dividing line was between two hills at Pili o Kahe:

Eventually the stone [cast by Kāne and Kanaloa] was found at Pili o Kahe. This is a spot where two small hills of the Wai'anae Range come down parallel on the boundary between Honouliuli and Nānākuli ('Ewa and Wai'anae). The ancient Hawaiians said the hill on the 'Ewa side was the male and the hill on the Wai'anae side was female. The stone was found on the Waianae side hill and the place is known as Pili o Kahe.

(Pili=cling to, Kahe=flow). The name refers, therefore, to the female or Waianae side hill. And that is where the boundary between the two districts runs [Told to E.S. by Simeon Nawaa, March 22, 1954; cited in Sterling and Summers 1978:1].

Honouliuli means "dark water," "dark bay," or "blue harbor" and was named for the waters of Pearl Harbor (Jarrett 1930:22), which marks the eastern boundary of the *ahupua'a*. The original name for Pearl Harbor, is Pu'uloa (*lit.* long hill). Another explanation for the name comes from the "Legend of Lepeamoa", the chicken-girl of Pālama. In this legend, Honouliuli is the name of the husband of the chiefess Kapālama and grandfather of Lepeamoa (Thrum 1923:164-184). "Her grandfather gave his name, Honouliuli to a land district west of Honolulu . . ." (Thrum 1923:170). Westervelt (1963:209) gives an almost identical account.

3.1.2 Pu'uokapolei and the Plains of Kaupe'a

Pu'uokapolei is a prominent hill at the *mauka* edge of the coastal 'Ewa Plains and was the primary landmark for travelers on the trail that ran from Pearl Harbor west to Wai'anae (T̄T̄ 1959:27, 29; M.K. Nakuina 1992:54; E.M. Nakuina 1904, in Sterling and Summers 1978:34).

3.1.2.1 Pu'uokapolei, Astronomical Marker and Heiau

Pu'u means hill and *Kapolei* means "beloved Kapo," a reference to the sister of the Hawaiian volcano goddess, Pele. Samuel Kamakau says that ancient Hawaiians used Pu'uokapolei as an astronomical marker to designate the seasons:

. . . the O'ahu people who reckoned the time (*O'ahu po'e helu*) called the season Kau [summer] for the setting of the sun from Pu'uokapolei, a hill in Honouliuli, 'Ewa, to the opening of Mahinaona (*i ke kawaha o Mahinaona*). When the sun moved south from Pu'uokapolei—and during the season of the sun in the south—for the coming of coolness and for the sprouting of new buds on growing things—the season was called Ho'oilo [winter, rainy, season] [Kamakau 1976:14].

A *heiau* was once on Pu'uokapolei, but had been destroyed by the time of McAllister's (1933:108) survey of the island in the early 1930s. The hill was used as a point of solar reference or as a place for such observations (Fornander 1919b, Vol. VI, Part 2:292). Pu'uokapolei may have been regarded as the gate of the setting sun, just as the eastern gate of Kumukahi in Puna is regarded as the rising sun; both places are associated with the Hawaiian goddess Kapo (Emerson 1915:41). This somewhat contradicts some Hawaiian cosmologies, in which Kū was the god of

the rising sun, and Hina, the mother of Kamapua'a, was associated with the setting sun. Fornander (Fornander 1919b, Vol. VI, Part 2:292) states that Pu'uokapolei may have been a jumping off place (also connected with the setting sun) and associated with the wandering souls who roamed the plains of Kaupe'a and Kāne-hili, *makai* of the hill.

3.1.2.2 Pu'uokapolei and the Plains of Kaupe'a and Kāne-hili

Hi'iaka sang this bitter chant addressed to Lohiau and Wahine-oma'o which uses the association of the Plains of Kaupe'a as a place for the wandering of lost souls:

*Ku'u aikana i ke awa lau o Pu'uloa,
 Mai ke kula o Pe'e-kaua, ke noho oe,
 E noho kaua e kui, e lei i ka pua o ke kauno 'a,
 I ka pua o ke akuli-kuli, o ka wili-wili;
 O ka iho 'na o Kau-pe'e i Kane-hili,
 Ua hili au; akahi no ka hili o ka la pomaika'i;
 E Lohiau ipo, e Wahine-oma'o,
 Hoe 'a mai ka wa'a i a'e aku au.*

We meet at Ewa's leaf-shaped lagoon, friends;
 Let us sit, if you will on this lea
 And bedeck us with wreaths of *Kauno 'a*,
 Of *akuli-kuli* and *wili-wili*,
 My soul went astray in this solitude;
 It lost the track for once, in spite of luck,
 As I came down the road to Kau-pe'a.
 No nightmare dream was that which tricked my soul.
 This way, dear friends; turn the canoe this way;
 Paddle hither and let me embark
 [Emerson 1915:167-168].

Several other Honouliuli places are mentioned in this chant, including Pe'e-kaua, which may be a variation of Kau-pe'e or Kaupe'a, and the plains of Kānehili, the last of which again refers to wandering, as the word *hili* means "to go astray" (Emerson 1915:162). In the chant, Hi'iaka is moving downhill from Kaupe'a, probably the plains adjacent to Pu'uokapolei, toward the coast, the plain of Kānehili.

3.1.2.3 The plains of Kaupe'a and Pu'uokapolei and the Realm of Homeless Souls

There are several places on the 'Ewa coastal plain that are associated with *ao kuewa*, the realm of the homeless souls. Samuel Kamakau (1991b:47-49) explains the Hawaiian beliefs in the afterlife:

. . . There were three realms (*ao*) for the spirits of the dead. . . There were, first, the realm of the homeless souls, the *ao kuewa*; second, the realm of the ancestral spirits, the *ao 'aumakua*; and third, the realm of Milu, *ke ao o Milu* . . .

The *ao kuewa*, the realm of homeless souls, was also called the *ao 'auwana*, the realm of wandering souls. When a man who had no rightful place in the 'aumakua realm (*kanaka kuleana 'ole*) died, his soul would wander about and stray amongst the underbrush on the plain of Kama'oma'o on Maui, or in the *wiliwili* grove of Kaupe'a on Oahu. If his soul came to Leilono [in Halawa, 'Ewa near Red Hill], there he would find the breadfruit tree of Leiwalo, *ka 'ulu o Leiwalo*. If it was not found by an 'aumakua soul who knew it (*i ma'a mau iaia*), or one who would help it, the soul would leap upon the decayed branch of the breadfruit tree and fall down into endless night, *the pō pau 'olo o Milu*. Or, a soul that had no rightful place in the 'aumakua realm, or who had no relative or friend (*makamaka*) there who would watch out for it and welcome it, would slip over the flat lands like a wind, until it came to a leaping place of souls, a *leina a ka 'uhane*. . . . [Kamakau 1991a:47].

On the plain of Kaupe'a beside Pu'uloa [Pearl Harbor], wandering souls could go to catch moths (*pulelehua*) and spiders (*nanana*). However, wandering souls could not go far in the places mentioned earlier before they would be found catching spiders by 'aumakua souls, and be helped to escape. . . . [Kamakau 1991a:49].

The breadfruit tree Leilono was said to have been located on the 'Ewa-Kona border, above Āliamanu. In another section of his account of the dead, Kamakau calls the plain of wandering souls the "plain at Pu'uokapolei."

There are many who have died and have returned to say that they had no claim to an 'aumakua [realm] (*kuleana 'ole*). These are the souls, it is said, who only wander upon the plain of Kama'oma'o on Maui or on the plain at Pu'uokapolei on Oahu. Spiders and moths are their food [Kamakau 1991b:29].

This association of Pu'uokapolei and Kānehili with wandering souls is also illustrated in a lament on the death of Kahahana, the paramount chief of O'ahu, who was killed by his father, Kahekili, after Kahahana became treacherous and killed the high priest Kaopulupulu.

Go carefully lest you fall dead in the sun,	<i>E newa ai o hea make i ka la,</i>
The god that dwells on Kapolei hill.	<i>Akua noho la i Puuokapolei.</i>
The sun is wailing on account of the	<i>E hanehane mai ana ka la i na</i>
women of Kamao,	<i>wahine o Kamao,</i>
A hiding god, blossoming 'ōhai	<i>Akua pe'e, pua 'ōhai o ke kaha,</i>
of the banks,	
Contented among the stones-	<i>I walea wale i ke a-</i>
Among the breadfruit planted by Kahai.	<i>I ka ulu kanu a Kahai.</i>
Thou wast spoken of by the 'ō'ō-	<i>Haina 'oe e ka 'ō'ō-</i>
By the bird of Kanehili.	<i>E ka manu o Kanehili.</i>

[Fornander 1919a, Vol. VI, Part 2:297]

Fornander provides some notes on this lament. The god dwelling at Kapolei is the god Kahahana, stating that this is where his soul has gone. Kamao is one of the names of the door to

the underworld. This lament draws an association with wandering souls and the place where the first breadfruit tree was planted by Kahai at Pu'uloa (Fornander 1919b, Vol. VI, Part 2:304).

Mary Kawena Pukui offers this Hawaiian saying, which places the wandering souls in a *wiliwili* grove at Kaupe'a.

The *wiliwili* grove of Kaupe'a

Ka wiliwili of Kaupe'a.

In 'Ewa, O'ahu. Said to be where homeless ghosts wander among the trees
[Pukui 1983:#1666].

Beckwith (1940:154) has stressed that "the worst fate that could befall a soul was to be abandoned by its 'aumakua and left to stray, a wandering spirit (*kuewa*) in some barren and desolate place." These wandering spirits were often malicious, so the places where they wandered were avoided.

3.1.2.4 The Plain of Pukaua

The Hawaiian language newspaper *Ka Loea Kālai'āina*, (January 13, 1900) relates that near Pu'uokapolei, on the plain of Pukaua, on the *mauka* side of the road, there was a large rock. This legend suggests that the plain around Pu'uokapolei was called Pukaua. The legend is as follows:

If a traveler should go by the government road to Waianae, after leaving the village of gold, Honouliuli, he will first come to the plain of Puu-ainako and when that is passed, Ke-one-ae. Then there is a straight climb up to Puu-o-Kapolei and there look seaward from the government road to a small hill, That is Puu-Kapolei. . . . You go down some small inclines, then to a plain. This plain is Pukaua and on the mauka side of the road, you will see a large rock standing on the plain. . . . There were two supernatural old women or rather peculiar women with strange powers and Puukaua belonged to them. While they were down fishing at Kualaka'i [near Barbers Point] in the evening, they caught these things, 'a'ama crabs, *pipipi* shellfish, and whatever they could get with their hands. As they were returning to the plain from the shore and thinking of getting home while it was yet dark, they failed for they met a one-eyed person [bad omen]. It became light as they came near to the plain, so that passing people were distinguishable. They were still below the road and became frightened lest they be seen by men. They began to run - running, leaping, falling, sprawling, rising up and running on, without a thought of the 'a'ama crabs and seaweeds that dropped on the way, so long as they would reach the upper side of the road. They did not go far for by then it was broad daylight. One woman said to the other, "Let us hide lest people see us," and so they hid. Their bodies turned into stone and that is one of the famous things on this plain to this day, the stone body. This is the end of these strange women. When one visits the plain, it will do no harm to glance on the upper side of the road and see them standing on the plain [*Ka Loea Kālai'āina*, January 13, 1900, translation in Sterling and Summers 1978:39].

In another version of this story, the two women met Hi'iaka as she journeyed toward the 'Ewa coast. The women were *mo'o* (supernatural beings) and were afraid that Hi'iaka would kill them,

so they changed into their lizard form. One of the lizards hid in a little space on a stone beside the coastal trail, and the other hid nearby (*Ka Hōkū o Hawai'i*, February 15, 1927, translated in Maly 1997:19). From that time on the stone was known as *pe'e-kāua*, meaning "we two hidden." Hi'iaka greeted the two women but did not harm them, and passed on.

When she reached Pu'uokapolei, she also greeted two old women who lived at an 'ohai grove on the hill. These women were named Pu'uokapolei and Nāwahineokama'oma'o (*Ka Hōkū o Hawai'i*, February 22, 1927, translated in Maly 1997:19). As she continued her travels, she looked to the ocean and saw the canoe carrying Lohi'au.

My man on the many harbored sea of Pu'uloa	<i>Ku'u kāne i ke awa lau o Pu'uloa</i>
As seen from the plain of Pe'ekāua	<i>Mai ke kula o Pe'ekāua ke noho</i>
Let us dwell upon the 'ōhai covered shore	<i>E noho kāua i ke kaha o ka 'ōhai</i>
Where the noni blossoms are twisted together	<i>I ka wiliwili i ka pua o ka lau noni</i>
Descending along Kānehili	<i>O ka ihona i Kānehili la</i>
I am winding along	<i>Ua hili ho'i au-e</i>

[*Ka Hōkū o Hawai'i*, February 22, 1927, translated in Maly 1997:20].

3.1.2.5 Pu'uokapolei and Kamapua'a

Pu'uokapolei was the home of Kamapua'a's grandmother, Kamaunuanoho, who was one of the three migrants from Kahiki that were ancestors to the people of O'ahu (Fornander 1919a, Vol. V, Part 2:318; Kahiolo 1998:81, 107). Kamapua'a, the Hawaiian pig god, once lived in Kaluanui on the windward side, but escaped to 'Ewa when he was pursued by the chief Olopana.

Kamapua'a subsequently conquered most of the island of O'ahu, and, installing his grandmother [Kamaunuanoho] as queen, took her to Pu'uokapolei, the lesser of the two hillocks forming the southeastern spur of the Wai'anae Mountain Range, and made her establish her court there. This was to compel the people who were to pay tribute to bring all the necessities of life from a distance, to show his absolute power over all [Nakuina 1904:50-51].

Emma Nakuina goes on to note: "A very short time ago [prior to 1904] the foundations of Kamaunuanoho's house could still be seen at Pu'uokapolei." Another account (*Ka Loea Kālai'āina* January 13, 1900, translated in Sterling and Summers 1978:34) speaks of Kekeleaiku, the older brother of Kamapua'a, who also lived on Pu'uokapolei.

3.1.2.6 The Strife at Honouliuli; Kūali'i unites Hawai'i nei (*Mo'olelo o Kūali'i*)

The celebrated chief, Kūali'i, is said to have led an army of twelve thousand (*'ekolu mano*) against the chiefs of Ko'olauloa with an army of twelve hundred (*'ekolu lau*) upon the plains of Keahumoa (Fornander 1917, Vol. IV, Part 2:364-401). Perhaps because the odds were so skewed, the battle was called off and the *ali'i* of Ko'olau ceded (*ha'awi a'e*) the districts of Ko'olauloa, Ko'olaupoko, Waialua and Wai'anae to Kūali'i. When the *ali'i* of Kaua'i heard of this victory at Honouliuli they gave Kaua'i to Kūali'i as well, and thus he became possessed of all the islands (*a lilo a'e la nā moku a pau ia Kūali'i mai Hawai'i a Ni'ihau*). The strife at Honouliuli was the occasion of the recitation of a song for Kūali'i by a certain Kapa'ahulani (*Ka*

Pule Ana a Kapa'ahulani). This *mele* compares the king to certain places and objects in the islands, in this instance to the first breadfruit planted by Kahai at Pu'uloa, and a pig and a woman on Pu'u Kapolei, possibly a reference to Kamapua'a and his grandmother.

Not like these art thou, Kū.	<i>'A'ole I like Kū.</i>
Not like the pig	<i>'A'ole I like i ka puaa,</i>
Discerning the progeny of the god;	<i>I ka weke lao a ke akua,</i>
[Or] The breadfruit planted by Kahai.	<i>Ka ulu kanu a Kahai;</i>
Truly, have you not known	<i>Oi ole ka oe i ike,</i>
The woman with the dyed garment,	<i>Ka wahine pau mao</i>
On the top of Pu'uokapolei?	<i>I ka luna o Pu'uokapolei-la?</i>

[Fornander 1917, Vol. IV, Part 2:392-393].

A later section of this *mele* also refers to Pu'uokapolei and makes mention of the famous blue *poi* of Honouliuli.

O Kawelo! Say, Kawelo!	<i>O Kawelo-e, e Kawelo-e,</i>
Kawelokiki, the sharp-pointed hill,	<i>O Kaweloiki puu oioi,</i>
Hill of Kapolei.	<i>Pu'u of Kapolei-e-</i>
Blue is the poi which appeases	<i>Uliuli ka poi e piha nei-o Honouliuli;</i>
[the hunger] of Honouliuli.	

[Fornander 1917, Vol. IV, Part 2:400-401].

3.2 Historic Background

3.2.1 Pre-Contact and Early Post-Contact Periods

By ca. A.D. 1320, 'Ewa, along with Kona and Ko'olaupoko, were the dominant polities, ruled by the sons of a chief named Māweke (Cordy 2002:21). 'Ewa at this time included the traditional districts of 'Ewa, Wai'anae, and Waialua (Fornander 1880:48). Around A.D. 1400, the entire island was ruled by King La'akona; chiefs within his line, the Māweke-Kumuhonua line, reigned until about A.D. 1520-1540, with their major royal center in Līhu'e, in 'Ewa. (Cordy 2002:24). Haka was the last chief of the Māweke-Kumuhonua line; he was slain by his men at the fortress of Waewae near Līhu'e (Kamakau 1991a:54-54; Fornander 1880:88). Power shifted between the chiefs of different districts from the 1500s until the early 1700s, when Kūali'i achieved control of all of O'ahu by defeating the Kona chiefs, then the 'Ewa chiefs, and then expanding his control on windward Kaua'i. Peleiholani, the heir of Kūali'i, gained control of O'ahu ca. 1740, and later conquered parts of Moloka'i. He was ruler of O'ahu until his death in ca. 1778 when Kahahana, of the 'Ewa line of chiefs was selected as the ruler of O'ahu (Cordy 2002:24-41).

After Kamehameha's O'ahu victory and his consolidation of rule over all the Hawaiian Islands, he gave the *ahupua'a* of Honouliuli to Kalanimōkū as part of the *panalā'au*, or conquered lands, with the right to pass the land on to his heirs rather than having it revert to Kamehameha (Kame'eleihiwa 1992:58, 112). Kalanimōkū subsequently gave the *ahupua'a* to his sister, Wahinepi'o.

Various Hawaiian legends and early historical accounts indicate that the *ahupua'a* (land division) of Honouliuli was once widely inhabited by pre-Contact populations, including the

Hawaiian *ali'i* (chiefly class). This would be attributable for the most part to the plentiful marine and estuarine resources available at the coast, along which several sites interpreted as permanent habitations and fishing shrines have been located. Other attractive subsistence-related features of the *ahupua'a* included irrigated lowlands suitable for wetland taro cultivation, as well as the lower forest area of the mountain slopes for the procurement of forest resources. Handy and Handy (1972:429) report:

The lowlands, bisected by ample streams, were ideal terrain for the cultivation of irrigated taro. The hinterland consisted of deep valleys running far back into the Ko'olau range. Between the valleys were ridges, with steep sides, but a very gradual increase of altitude. The lower part of the valley sides were excellent for the cultivation of yams and bananas. Farther inland grew the 'awa for which the area was famous.

In addition, breadfruit, coconuts, *wauke* (paper mulberry, *Broussonetia papyrifera*, used to make *kapa* for clothing), bananas, and *olonā* (*Touchardia latifoli*, used to make cordage) and other plants were grown in the interior. 'Ewa was known as one of the best areas to grow gourds and was famous for its *māmaki* (*Pipterus* spp.; used to make *kapa* for clothing). It was also famous for a rare taro called the *kāi o 'Ewa*, which was grown in mounds in marshy locations (Handy and Handy 1972:471). The cultivation of this prized and delicious taro led to the saying:

Ua 'ai i ke kāi-koi o 'Ewa. He has eaten the Kāi-koi taro of 'Ewa.
Kāi is O'ahu's best eating taro; one who has eaten it will always like it. Said of a youth of a maiden of 'Ewa, who, like the Kāi taro, is not easily forgotten [Pukui 1983:#2770].

The lochs of Pearl Harbor were ideal for the construction fishponds and fishtraps. Forest resources along the slopes of the Wai'anae Range probably acted as a viable subsistence alternative during times of famine and/or low rainfall (Handy 1940:211; Handy and Handy 1972:469-470). The upper valley slopes may have also been a resource for sporadic quarrying of basalt used in the manufacturing of stone tools. At least one probable quarrying site (SIHP site 50-80-12-4322) is present in Makaīwa Gulch at 152 m (500 ft) above mean sea level (Hammatt et al. 1990a).

John Papa 'Ī'ī described a network of Leeward O'ahu trails, which in historic times encircled and crossed the Wai'anae Range, allowing passage from Lualualei to Honouliuli by three different trails ('Ī'ī 1959:96-98). The coastal trail skirted Pearl Harbor, passing by Pu'uokapolei; this would have been the nearest of three cross-*ahupua'a* Honouliuli trails to the current project area. Following 'Ī'ī's description, a portion of the coastal trail would have passed close to the existing Farrington Highway, north of the project area, as seen in an 1825 map (Figure 8) of the south coast of O'ahu by Charles Malden of the British ship the *Blonde*.

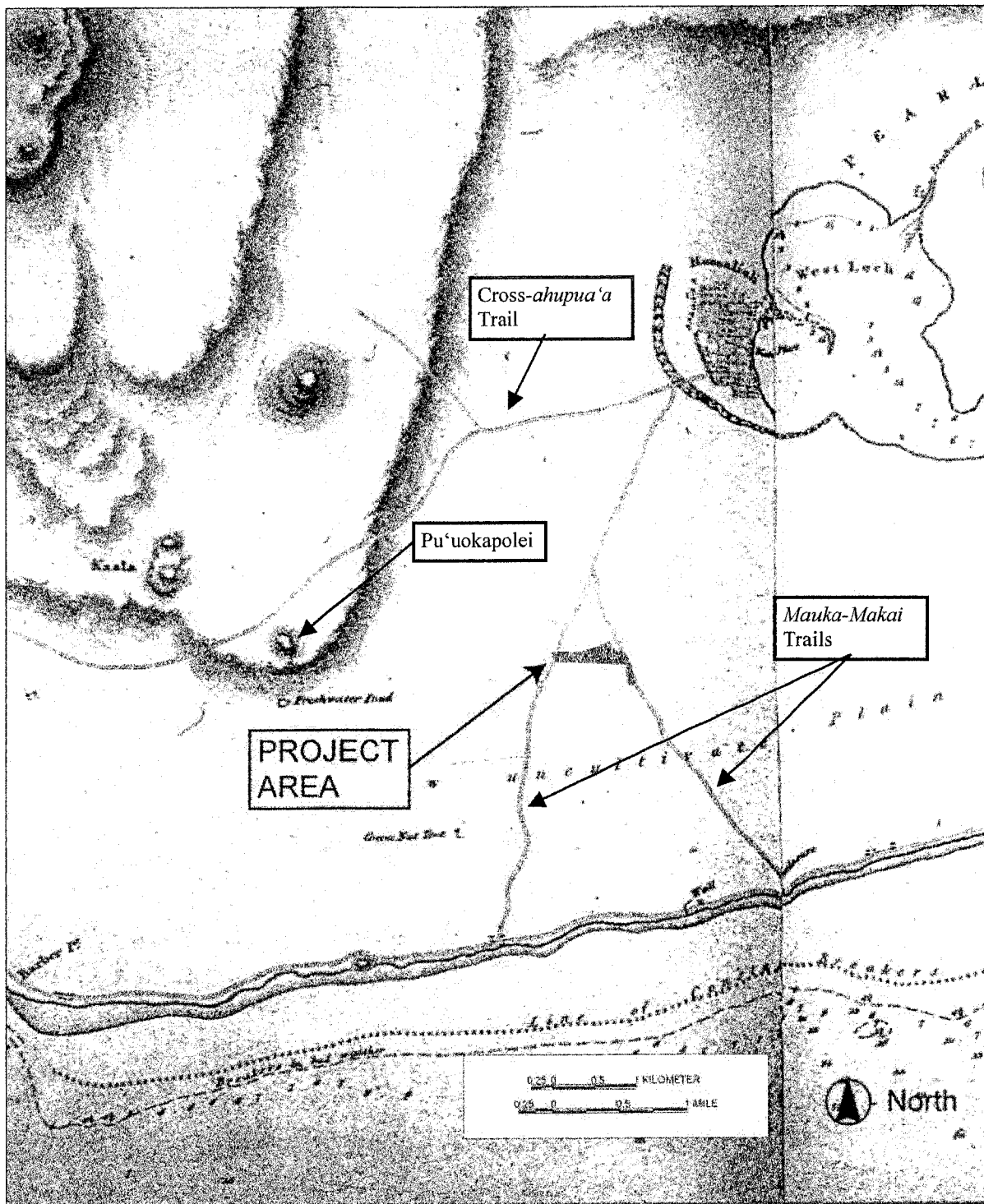


Figure 8. Portion of 1825 Map of the South Coast of Woahoo (O'ahu) and Honolulu by Lieut. C.R. Malden from the British ship the *Blonde*

The trail is described by 'Ī'i as:

The trail went down to the stream and up again, then went above the taro patches of Waiiau, up to a *makai* field, to Waimano, to Manana, and to Waiawa; then to the stream of Kukehi and up to two other *maika* fields, Pueohulunui and Haupuu. At Pueohulunui was the place where a trail branched off to go to Waialua and down to Honouliuli and on to Waianae. As mentioned before, there were three trails to Waianae, one by way of Pu'u o Kapolei, another by way of Pohakea, and the third by way of Kolekole ['Ī'i 1959:97].

Malden's 1825 map (see Figure 8) also shows two spurs of the trail, extending from the cross *ahupua'a* (east-west) trail to the coast to form two *mauka-makai* (north-south) trails. It is difficult to place the project area on this old map exactly, due to the more primitive methods of survey in the nineteenth century, but if our placement is correct, it seems as if these two *mauka-makai* trails ran on each side of the present project area. Tuggle and Tomonari-Tuggle (1997) compiled information on several old maps to produce a map of all-important features on the 'Ewa Plain from 1825 to World War II (Figure 9). On this map, the two trails extend to the coast, one ending at the village of One'ula and the other ending halfway between the villages of One'ula and Kualaka'i on the coast.

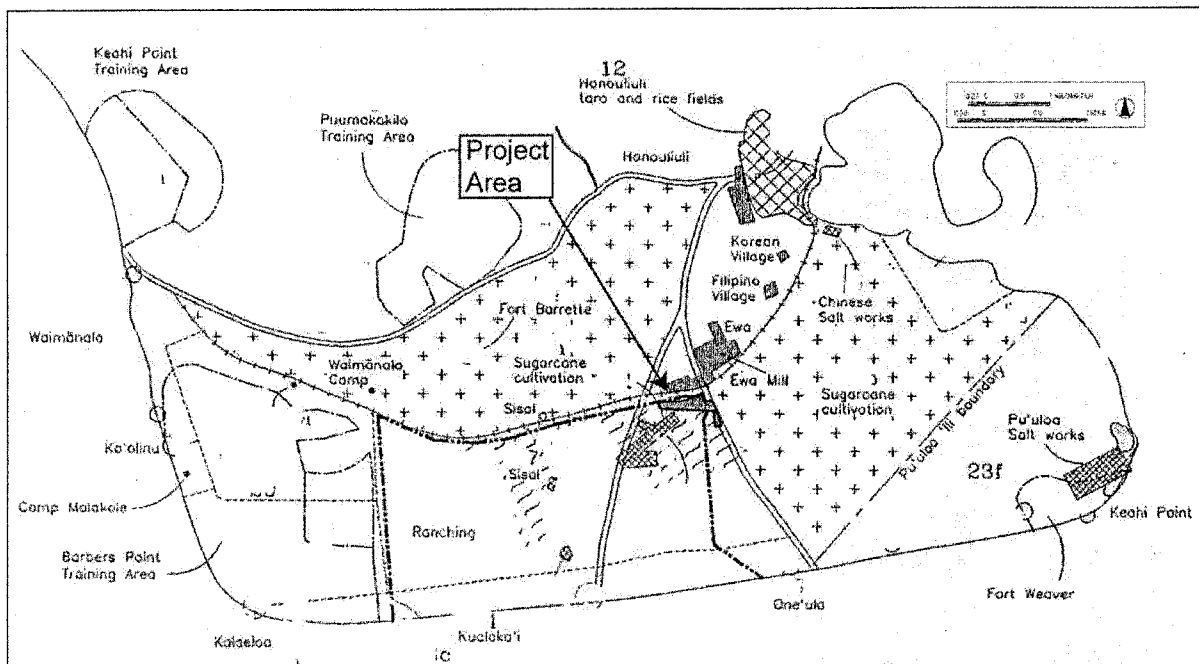


Figure 9. Map by Tuggle and Tomonari-Tuggle (1997:32), compiled from historic maps, showing features of the 'Ewa Plain from 1825 to World War II

Early historical accounts of the general region typically refer to the more populated areas of the 'Ewa district, where missions and schools were established and subsistence resources were perceived to be greater. However, the presence of archaeological sites along the barren coral

plains and coast of southwest Honouliuli Ahupua'a, indicates that prehistoric and early historic populations also adapted to less inviting areas, despite the environmental hardships.

The earliest detailed map of the area shows no habitation closer to the project area than the western edge of West Loch in the vicinity of Kapapahu Point (Hō'ae'ae Point on modern maps). The 1881 C.J. Lyons map (Figure 10) documents substantial settlement at the "Honouliuli Taro Lands" west of Kapapahu Point and it seems clear that in early historic times, this was the population center for Honouliuli Ahupua'a (Dicks et al. 1987). The amenities of that area, such as fishponds, taro *lo'i* (irrigated patches), shellfish collecting, and salt drying would have focused population there in precontact times, and thus the name Honouliuli was also applied to the entire *ahupua'a*.

3.2.2 Observations of Early Explorers and Foreign Residents

Captain Vancouver sailed by Kalaeloa (Barbers Point) in 1792, and recorded his impression of the small coastal village of Kualaka'i and the arid Honouliuli coast.

The point is low flat land, with a reef round it . . . Not far from the S.W. point is a small grove of shabby cocoa-nut trees, and along these shores are a few struggling fishermen's huts [Vancouver 1798, Vol. I:167].

. . . from the commencement of the high land to the westward of Opooroah [Pu'uloa], was composed of one very barren rocky waste, nearly destitute of verdure, cultivation or inhabitants, with little variation all the way to the west point of the island . . . [Vancouver 1798, Vol. II:217].

. . . This tract of land was of some extent but did not seem to be populous, nor to possess any great degree of fertility; although we were told that at a little distance from the sea, the soil is rich, and all necessaries of life are abundantly produced . . . [Vancouver 1798, Vol. III:361-363].

Archibald Campbell, an English seaman who was given some land in Waimano Ahupua'a by King Kamehameha in 1809, described his land around Pearl Harbor:

In the month of November the king was pleased to grant me about sixty acres of land, situated upon the Wymumme [traditional Hawaiian name for Pearl River], or Pearl-water, an inlet of the sea about twelve miles to the west of Hanaroora [Honolulu]. . . . We passed by footpaths, winding through an extensive and fertile plain, the whole of which is in the highest state of cultivation. Every stream was carefully embanked, to supply water for the taro beds. Where there was not water, the land was under crops of yams and sweet potatoes [Campbell 1967:103-104].

Pearl and mother of-pearl shells are found here in considerable quantity. Since the king has learned of their value, he has kept the fishing to himself, and employs divers for the purpose [Campbell 1967:114-115].

Subsequent to western contact in the area, the landscape of the 'Ewa plains and Wai'anae slopes was adversely affected by the removal of the sandalwood forest, and the introduction of

domesticated animals and new vegetation species. Domesticated animals, including goats, sheep and cattle, were brought to the Hawaiian Islands by Vancouver in the early 1790s, and allowed to graze freely about the land for some time after. It is unclear when the domesticated animals were brought to O'ahu; however, L.A. Henke reports the existence of a longhorn cattle ranch in Wai'anae by at least 1840 (Frierson 1972:10). During this same time, perhaps as early as 1790, exotic vegetation species were introduced to the area. These typically included vegetation best suited to a terrain disturbed by the logging of sandalwood forest and eroded by animal grazing. Within the current project area, the majority of the (non-cultivated) vegetation is comprised of introduced species, mainly grasses.

At contact, the most populous *ahupua'a* on the island was Honouliuli, with the majority of the population centered on Pearl Harbor. In 1832, a missionary census of Honouliuli recorded the population as 1,026. Within four years, the population was down to 870 (Schmitt 1973:19, 22). In 1835, there were eight to ten deaths for every birth (Kelly 1991:157-158). Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages. In 1853, the population of 'Ewa and Wai'anae combined was 2,451 people. In 1872, it was 1,671 (Schmitt 1968:71). The inland area of 'Ewa was probably abandoned by the mid-nineteenth century, due to population decline and consolidation of the remaining people in the town of Honouliuli (at Kapapahu Point, northeast of the project area). A detailed discussion of the historic population counts in the 'Ewa District has been presented by Charvet-Pond and Davis (1992).

The first mission station in 'Ewa was established in 1834 at Kalua'aha near Pearl Harbor. Charles Wilkes, of the U.S. Exploring Expedition visited the missionary enclave at Honouliuli town in 1840.

At Ewa, Mr. Bishop has a large congregation. The village comprises about fifty houses, and the country around is dotted with them. . . . The natives have made some advance in the arts of civilized life; there is a sugar-mill which, in the season, makes two hundred pounds of sugar a day. . . . In 1840, the church contained nine hundred members, seven hundred and sixty of whom belonged to Ewa, the remainder to Waianae; but the Catholics have now established themselves at both these places, and it is understood are drawing off many from their attendance on Mr. Bishop's church [Wilkes 1970:80-81].

3.3 Mid-Nineteenth Century and the Māhele

The Organic Acts of 1845 and 1846 initiated the process of the *māhele* - the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the crown and the *ali'i* (chiefly class) received their land titles. The common people received their *kuleana* (individual parcels) in 1850.

During the *Māhele* of 1848, 72 individual land claims in the *ahupua'a* of Honouliuli were registered and awarded by King Kamehameha III (Tuggle and Tomonari-Tuggle 1997:34). The 72 *kuleana* awards, awards given to commoners, were almost all made adjacent to Honouliuli Gulch, most within the "Honouliuli Taro Lands," which contained fishponds and irrigated taro fields.

In 1855 the Land Commission awarded all of the unclaimed lands in Honouliuli, 43,250 acres, to Miriam Ke'ahikuni Kekau'ōnohi, Royal Patent #6971 in 1877; Parcel #1069 in the Land Court office, Land Commission Award (LCA) 11218 (Figure 10), a granddaughter of Kamehameha I, and the heir of Kalanimōkū, who had been given the land by Kamehameha after the conquest of O'ahu (Indices of Awards 1929; Kame'eleihiwa 1992). Kekau'ōnohi was one of Liholiho's (Kamehameha II's) wives, and after his death, she lived with her half-brother, Luanu'u Kahalai'a, who was governor of Kaua'i (Kelly 1985:21). Subsequently, Kekau'ōnohi ran away with Queen Ka'ahumanu's stepson, Keli'iahonui, and then became the wife of Chief Levi Ha'alelea. Upon her death on June 2, 1851, all her property was passed on to her husband and his heirs. In 1863, the owners of the *kuleana* lands deeded their lands back to Ha'alelea to pay off debts owed to him (Frierson 1972:12). In 1864, Ha'alelea died, and his second wife, Anadelia Amoe, transferred ownership of the land to her sister's husband John Coney (Yoklavich et al 1995:16).

3.3.1 Early Ranching in on the 'Ewa Plain

John Coney rented the land to James Dowsett and John Meek in 1871, who used the land for cattle grazing. In 1877, the land, except for the 'ili of Pu'uloa, was sold to James Campbell. He drove off 32,237 head of stock belonging to Dowsett and Meek and to James Robinson and constructed a fence around the outer boundary of his property (Bordner and Silva 1983:C-12). He let the land rest for one year and then began to restock the ranch, so that he had 5,500 head of cattle after a few years (Dillingham 1885, cited in Frierson 1972:14).

In 1880-81, the Honouliuli ranch was described as:

. . . Acreage, 43,250, all in pasture, but possessing fertile soils suitable for agriculture; affords grazing for such valuable stock. The length of this estate is no less than 18 miles. It extends to within less than a mile of the sea coast, to the westward of the Pearl River inlet. . . . There are valuable fisheries attached to this estate [Bowser 1880:489].

From Mr. Campbell's veranda, looking eastward, you have one of the most splendid sights imaginable. Below the house there are two lochs, or lagoons, covered with water fowl, and celebrated for their plentiful supply of fish, chiefly mullet. . . . Besides Mr. Campbell's residence, which is pleasantly situated and surrounded with ornamental and shade trees, there are at Honouliuli two churches and a school house, with a little village of native huts [Bowser 1880:495].

Most of Campbell's lands in Honouliuli were used exclusively for cattle ranching. At that time, one planter remarked "the country was so dry and full of bottomless cracks and fissures that water would all be lost and irrigation impracticable" (Ewa Plantation Co. 1923:6-7). In 1879, Campbell brought in a well-driller from California to search the 'Ewa plains for water, and the well, drilled to a depth of 240 feet near Campbell's home in 'Ewa, resulted in ". . . a sheet of pure water flowing like a dome of glass from all sides of the well casing" (The Legacy of James Campbell n.d., cited in Pagliaro 1987:3). Following this discovery, plantation developers and ranchers drilled numerous wells in search of the valuable resource.

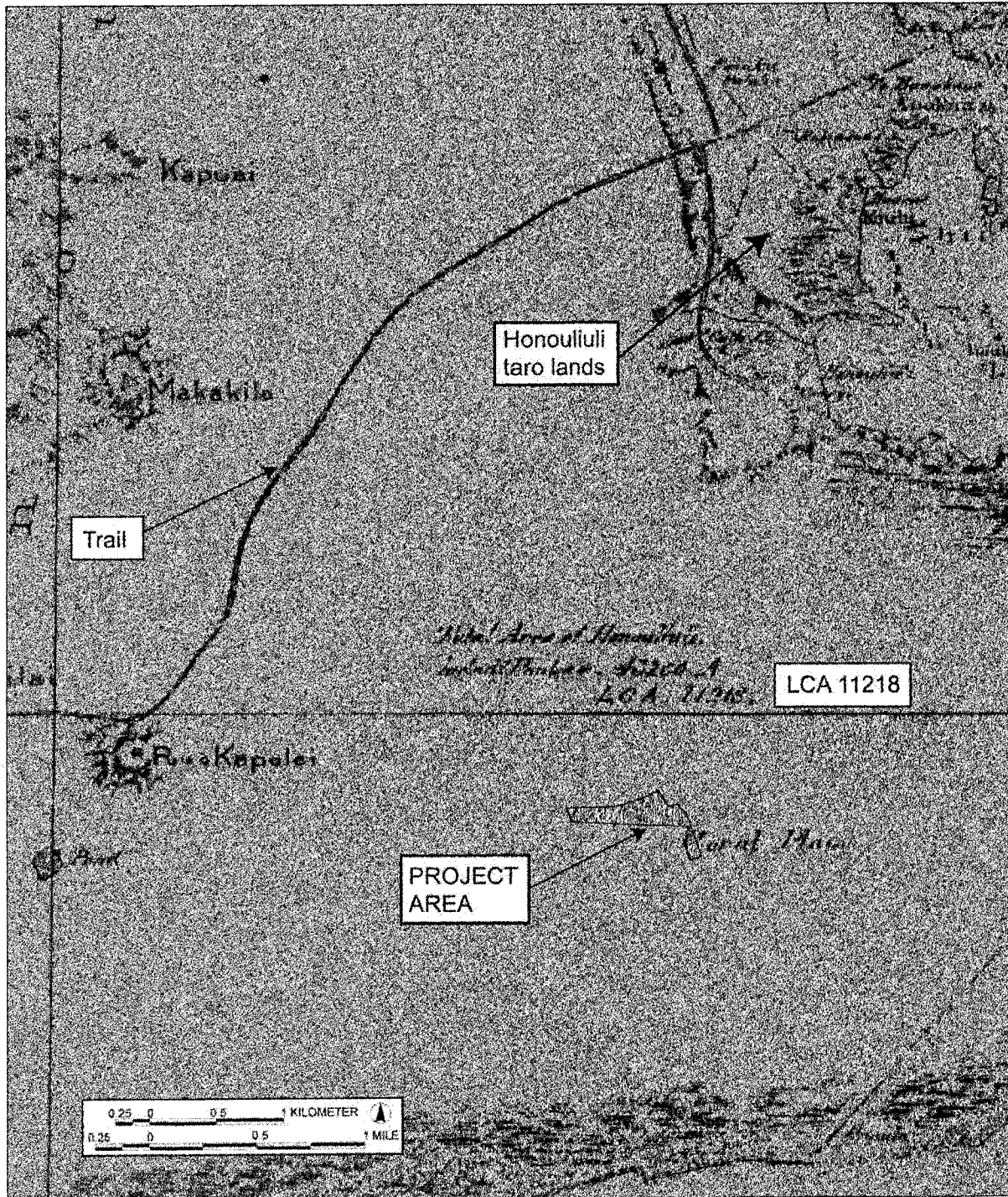


Figure 10. Portion of 1881 Hawaiian Government Survey map by C.J. Lyons, showing project area location within LCA 11218; also note location of Honouliuli Taro Lands adjacent to the West Loch of Pearl Harbor, and trail through 'Ewa passing by Pu'uokapolei

3.3.2 Other Enterprises in Campbell Lands

As noted above, part of Mr. Campbell's lands were also used to grow rice. By 1885, 200 acres in Honouliuli were used for rice and 50 acres were used to grow bananas (article in *Pacific Commercial Advertiser*, August 15, 1885, summarized in Silva 1987:A-12). These rice fields were planted in former taro fields or in undeveloped swamps, such as those near the project area in the former Honouliuli Taro lands. The rice fields in 1882 were described by Frank Damon during a tour of the area.

. . . Towards evening we reached Honouliuli, where the whole valley is leased to rice planters . . . This was one of the largest rice plantations we visited. Sometimes two or three men only, have a few fields which they cultivate for themselves, and we often too came upon houses where there were eight or ten men working their own land. But the larger plantations are owned by merchants in Honolulu, who have a manager acting for them. . . . [Damon 1882:37].

In 1890, Dillingham leased all land below 200 ft to William Castle, who used most of the land for sugar cane, but also leased some lands for rice cultivation, pasture, wood lots, bee-keeping, garden crops, and quarries. Some land above 650 ft was also leased for the cultivation of canaigre, which may be a word used for pineapple (Frierson 1972:15-16).

An additional agricultural trial was conducted in the Honouliuli area for the cultivation of sisal, a plant used to make fibers for rope and other material. Some sisal was planted before 1898 and production continued until the 1920s (Frierson 1972:16). This was grown mainly on the coastal plain of Honouliuli in Kānehili, just *mauka* of Kualaka'i Beach (now Nimitz Beach). An article in the *Paradise of the Pacific* in 1902 described this venture in glowing terms.

. . . The venture was made and a tract of land containing a large percentage of disintegrated coral, in the neighborhood of Ewa Plantation, where nothing else would grow, was chosen for the planting. . . . The Hawaiian Fiber Co., which Mr. Turner organized, and of which he is now manager, has 755 acres under fence, two and a half miles of which is stone wall with good gates at convenient places. . . . In a large field containing 130 acres, mauka of the Oahu Railway & Land Co. track, the first harvest is to be gathered in a few months. . . . Out of this section of 130 acres the company has figured on securing 50 tons of clean fiber, for which it is offered eight cents per pound in Honolulu or nine cents per pound in San Francisco [*Paradise of the Pacific* March 1902:17].

Into the early twentieth century, some Hawaiian families continued to live in Honouliuli and preserve the traditional lifestyle, including at the fishing village of Kualaka'i (see Figure 7 for location of village). One resident, Mrs. Eli Williamson, recalled:

In the Honouliuli area the train stopped among the *kiawe* (algaraboa) trees and *malina* (sisal) thickets. We disembarked with the assorted food bundles and water containers. Some of the Kualaka'i 'ohana (family) met us to help carry the 'ukana (bundles) along a sandstone pathway through the *kiawe* and *malina*. The distance to the frame house near the shore seemed long. When we departed our 'ukana

contained fresh lobsters, *limu* (algae), fish and *i'a malo'o* (dried fish) . . . [Williamson, in Kelly 1985:160].

3.4 Mid-Nineteenth Century to Present

3.4.1 History of the Oahu Railway and Land Company (OR&L)

In 1886, Campbell and B. F. Dillingham put together the "Great Land Colonization Scheme," which was an attempt to sell Honouliuli land to homesteaders (Thrum 1886:74). This homestead idea failed; two factors for the failure were the lack of water and the other was the distance from 'Ewa to Honolulu. The water problem was solved by the drilling of artesian wells, and Dillingham decided that the area could be used instead for large-scale cultivation (Pagliaro 1987:4). The transportation problem was to be solved by the construction of a railroad, which B. Franklin Dillingham soon began to finance under the company name of the Oahu Railway and Land Company (OR&L).

During the last decade of the nineteenth century, the railroad would reach from Honolulu to Pearl City in 1890, to Wai'anae in 1895, to Wai'alua Plantation in 1898, and to Kahuku in 1899 (Kuykendall 1967:III, 100). This railroad line eventually ran across the center of the 'Ewa Plain at the lower boundary of the sugar fields. To attract business to his new railroad system, Dillingham subleased all land below 200 ft to William Castle, who in turn sublet the area to the newly-formed Ewa Plantation Company (Frierson 1972:15). Dillingham's Honouliuli lands above 200 ft that were suitable for sugar cane cultivation were sublet to the Oahu Sugar Company) (Figure 11). Throughout this time, and continuing into modern times, cattle ranching continued in the area, and Honouliuli Ranch - established by Dillingham was - the "fattening" area for the other ranches (Frierson 1972:15).

Operations at the OR&L began to slow down in the 1920s, when electric streetcars were built for public transportation within the city of Honolulu and automobiles began to be used by families for transportation outside the city (Chiddix and Simpson (2004:185). The build-up to World War II turned this decline around, as the U.S. military utilized the OR&L lines to transport materials to build defense projects around the island. Historians have noted that one of the most serious mistakes made by the Japanese in their 1941 attack on Pearl Harbor was their decision not to bomb the railway infrastructure. Soon after the attack, the OR&L operated 24 hours a day, transporting war materials and troops from Honolulu to the new and expanded army, naval, and air bases. The huge navy base at Pearl Harbor had its own rail lines that connected to the OR&L rail lines.

In August of 1945, the war ended, and so did OR&L's heyday as a military transport line.

She had served her country well and proudly during the war, but operating round-the-clock on what little maintenance could be squeezed in, had taken a prodigious hit on the locomotives and track. Traffic stayed steady for a short time, but soon dropped precipitously as soldiers and sailors went home, military posts were shrunk or razed, and civilians could again get tires, gasoline and new cars [Chiddix and Simpson 2004:257].

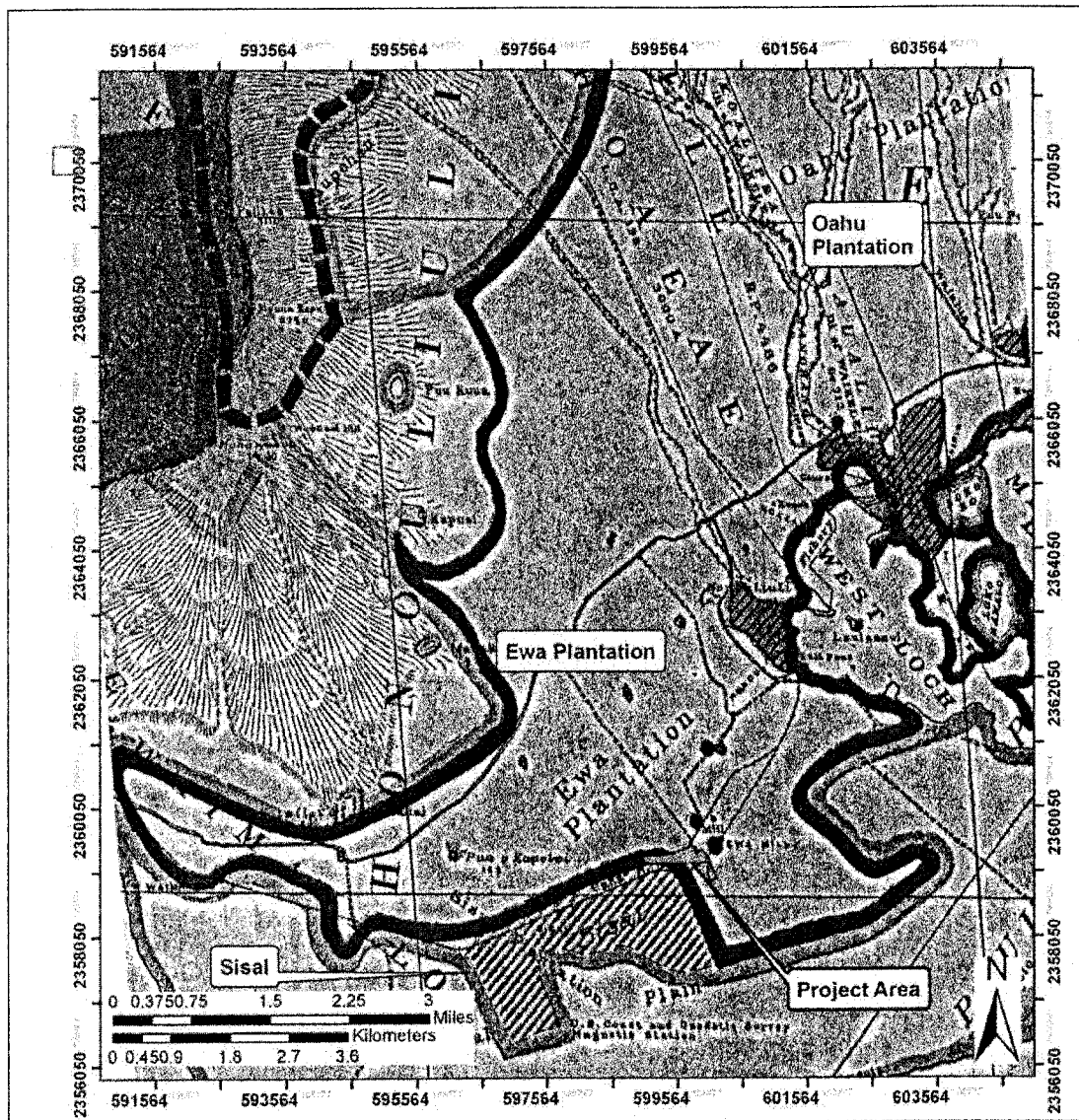


Figure 11. 1902 map showing relationship of Ewa Plantation and the Oahu Sugar Co. plantation; also note location of sisal growing area

There was no choice but to abandon the OR&L main line, and in 1946 Water F. Dillingham, son of B.F. Dillingham, wrote:

The sudden termination of the war with Japan changed not only the character of our transportation, but cut the freight tonnage to a third and the passenger business to a little above the pre-war level. With the increased cost of labor and material and the shrinkage in freight tonnage and passenger travel, it was definite that the road could not be operated as a common carrier. With no prospect of

increased tonnage, and the impossibility of increasing rates against truck competition, your management has applied to the Interstate Commerce for authority to abandon its mainline [Walter Dillingham, cited in Chiddix and Simpson 2004:257].

After the war, most of the 150+ miles of OR&L track were pried up, locomotives were sold to businesses on the US mainland, and railway cars were scrapped. In 1947, the U.S. Navy took over a section of the OR&L track for their own use, to transport bombs, ammunition, and torpedoes from the ammunition magazines at Lualualei, West Loch in Pearl Harbor, and Waikele on OR&L's Wahiawā Branch to Pearl Harbor Naval Base (Treiber 2005:25-26). The track to Waipahu was abandoned in the 1950s, but the line from the magazines in Lualualei to the wharves in West Loch at Pearl Harbor remained open until 1968.

In 1970, the Hawaiian Railway Society was formed to save and restore the remaining Hawaiian railway tracks and stock. The federal government donated the tracks and right-of-way to the State of Hawaii in 1974, and the Society was able to place the Navy's Lualualei-Pearl Harbor track on the National Register of Historic Places on December 1, 1975. The Highway Railway Society has currently restored about 6.5 miles of this track, on which they run weekly tourist train rides from Ewa Station to Nānākuli, pulled by restored OR&L locomotives (Chiddix and Simpson 2004:273). The northern section of the project area is bounded by the right-of-way along a portion of this track; (Chiddix and Simpson 2004:279); however, this portion is not used in the weekly excursions.

3.5 History of the Ewa Plantation Company

3.5.1 Sugar Cane Cultivation

The Ewa Plantation Company (Figure 12) was incorporated in 1890 for sugar cane cultivation. The first crop, 2,849 tons of sugar, was harvested in 1892 at the Ewa Plantation. Ewa was the first all-artesian plantation, and it gave an impressive demonstration of the part artesian wells were to play in the later history of the Hawaiian sugar industry (Kuykendall 1967:III, 69). As a means to generate soil deposition on the coral plain and increase arable land in the lowlands, the Ewa Plantation Company installed ditches running from the lower slopes of the mountain range to the lowlands. When the rainy season began, they plowed ground perpendicular to the slope so that soil would be carried down the drainage ditches into the lower coral plain. After a few years, about 373 acres of coral wasteland were reclaimed in this manner (Immisch 1964). By the 1920s, Ewa Plantation was generating large profits and was the "richest sugar plantation in the world" (*Paradise of the Pacific*, Dec. 1902:19-22, cited in Kelly 1985:171).

Just north of Ewa Plantation was the equally sprawling O'ahu Sugar Company which "covered some 20 square miles . . . ranging in elevation from 10 feet at the Waipio Peninsula . . . the Oahu Sugar Company were described as being "of near desert proportion until water was supplied from drilled artesian wells and the Waihole Water project" (Condé and Best 1973:313). The Oahu Sugar Company took control of the Ewa Plantation lands in 1970 and continued operations until 1995, when they decided to shut down sugar cane production in the combined plantation area (Dorrance and Morgan 2000:45, 50).

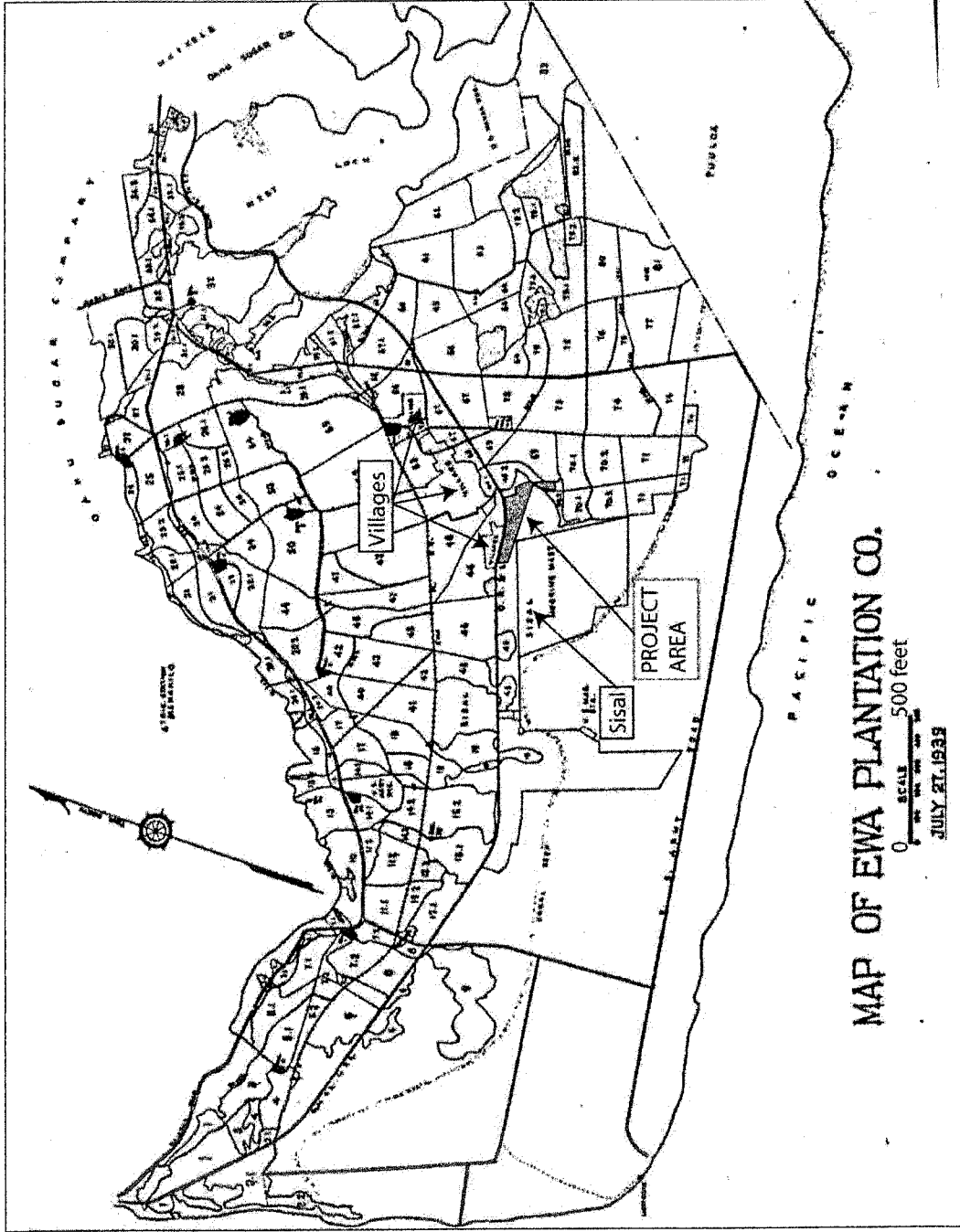


Figure 12. 1939 map of Ewa Plantation Co. lands, showing project area southwest of "Villages" and northeast of "Sisal" growing area

3.5.2 Workers Housing and the 'Ewa Villages

In 1890, construction began on housing for over 500 plantation workers. The project area is located just south (and *makai*) of eight main worker villages surrounding Ewa Mill (from northeast to southwest): Lower Village, Middle Village (also called Korean Village), Fernandez Village, Renton Village, Tenney Village, Mill Village, Varona Village, and "C" Village. Varona Village and "C" Village are adjacent (on the opposite side of the OR&L right-of-way and north of the project area (see Figure 1). On a 1930 USGS map (Figure 13), these "villages" are also shown. Only two are labeled, one as the "Filipino Camp" (now called "Fernandez Village") and a Korean camp (Middle Village) north of Fernandez Village. This map also shows no structures in the project area. A local informant has said that the project area in this time belonged to the railroad, and some structures for the railroad workers were built in the northeast corner of the parcel; however, the parcel does not ever seem to have been used by the Ewa Plantation Company for housing or any other plantation activity.

In 1928, probably the year with the greatest number of workers, the census bureau counted 4,967 people living and associated with the Ewa Plantation. These workers were Japanese, Chinese, Okinawan, Korean, Portuguese, Spanish, Hawaiian, Filipino, and European, who usually lived in separate camps or housing areas. The houses were described by George F. Renton, the plantation manager from 1899 to 1920:

Each of these dwellings is enclosed by a fence and supplied with water. It is pleasant to note the eagerness with which these homes have been taken up, and how much the premises have been improved. This is especially noticeable among the Japanese. . . . At present writing there are 451 dwellings on this estate. These are actual houses exclusive of restaurants, bath houses, cook houses, work shops, schools or churches [cited in Pagliaro 1987:17].

Most of the structures in the Tenney, Renton, and Varona villages were built between 1907 and 1957. The 'Ewa Hongwanji Mission, a Buddhist temple located near Varona and "C" villages and north of the project area, was originally built in 1902. This first building was destroyed by fire in 1943, and a new building was constructed in 1962 (R.M. Towill 1990:4-20). Varona Village was originally built mainly for Filipino workers, while "C" village seems to have been mainly inhabited by Japanese workers (Hammatt et al. 1990b:24).

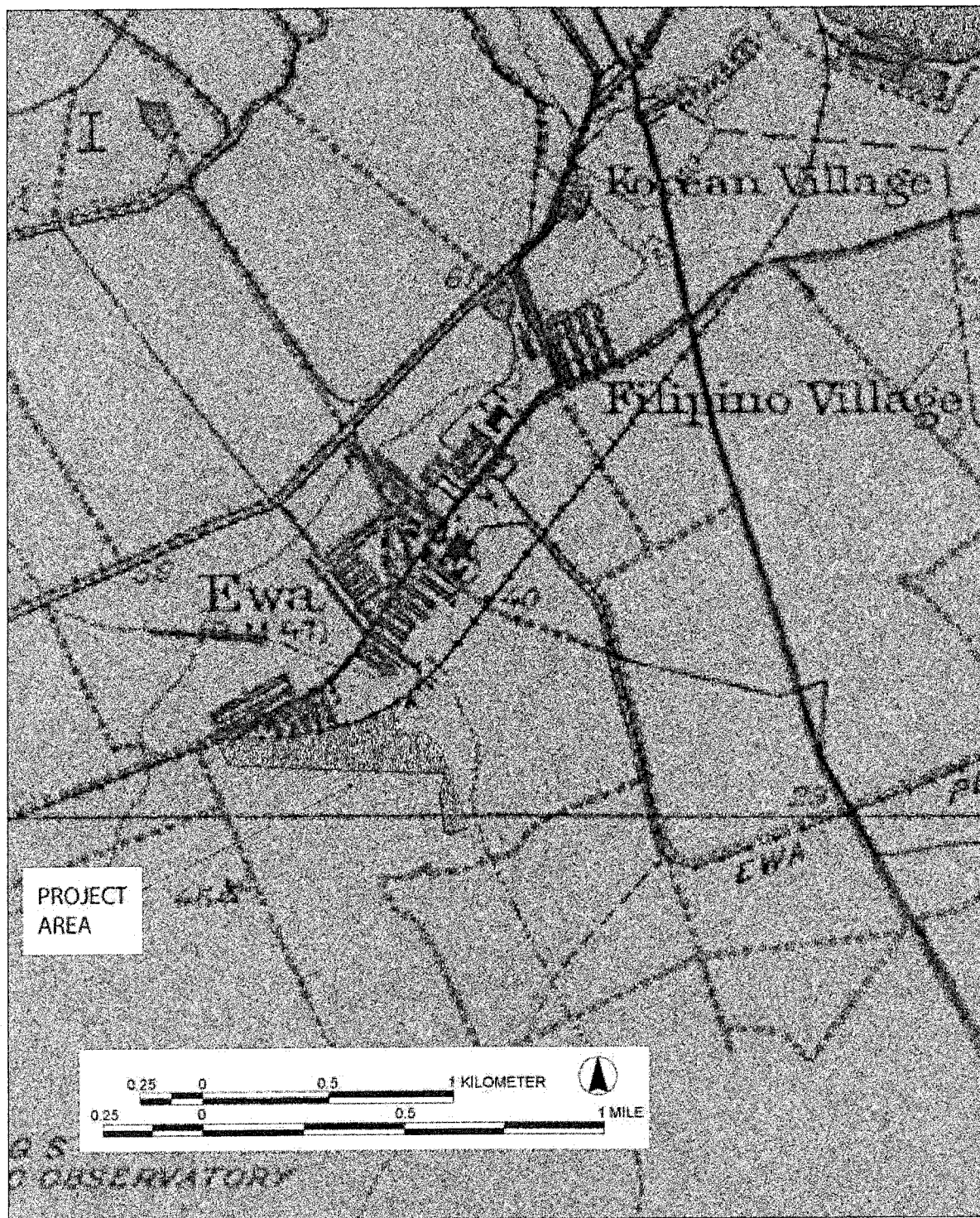


Figure 13. 1930 US Geological Survey map, showing no structures in the project area; note OR&L railroad tracks on the northern boundary of the project area

Section 4 Previous Archaeological Research

4.1 Early Archaeological Surveys

All archaeological projects previously conducted in Honouliuli and Pu'uloa are listed in Table 3. Two archaeological features, a boundary *pōhaku* or rock and a *hōlua*, or sledding site, are recorded only in the Boundary Commission Reports establishing the division lines between the *ahupua'a* of Honouliuli and Hō'ae'ae (to the east). The surveyor wrote of the southern point of this boundary:

In regard to Hoaeae . . . the point of commencement is Pōhaku Palahalaha, a well known rock, now marked by an arrow and the name "Honouliuli" on one side and "Hoaeae" on the other, which I have made the initial point of the survey . . . [Commission on Boundaries, Vol. 1:243].

This rock is placed on the Sterling and Summer map (see Figure 7) as Pōhaku Palaha. In another boundary survey, the *pōhaku* is called a "large, flat rock" (Commission on Boundaries Vol. 1:249), which may indicate the origin of the name from the Hawaiian word *pālaha*, which means "flattened, wide" (Pukui and Elbert 1986:307). As the surveyor continued to walk the Honouliuli/Hō'ae'ae boundary, he marked the northern point of the division as:

The Kamaaaina took me to the corner of Pauhala (?)-Hoaeae and Honouliuli – there is an ancient holua or sledding [*sic*] place near this – which is agreed for the ancient corner. . . [Commission on Boundaries Vol. 1:243].

The earliest attempt to record archaeological remains in Honouliuli Ahupua'a was made by Thrum (1906:46). He reported the existence of a *heiau* located on Pu'uokapolei, west of the present project area. In a second monograph on *heiau*, Thrum (1917) called this *heiau* Palole'i (Kapolei). Emory mapped and photographed these structures in 1933 (field notes), but they were dismantled and destroyed sometime before McAllister's survey of the islands in the 1930s. According to legend, Pu'uokapolei was the location on which Kamapua'a, the pig-god, resided with his grandmother, Kamaunuahihio (McAllister 1933:108).

In his surface survey of the 1930s, archaeologist J. Gilbert McAllister recorded the specific locations of important sites, and the general locations of less important sites (at least at Honouliuli). McAllister recorded 14 specific sites at Honouliuli, numbered Sites 133-146 (McAllister 1933:107-108) (see Figure 7).

Site 146, which McAllister used to denote the entire 'Ewa coral plains, is the only one of these sites in the project area. This "site," is more of a general area, covering all the coastal flatlands of 'Ewa. McAllister described the site as:

Site 146. 'Ewa coral plains, throughout which are the remains of many sites. The great extent of old stone walls, particularly near the Pu'uloa Salt Works, belongs to the ranching period of about 75 years ago [circa 1858]. It is probable that the holes and pits in the coral were formerly used by the Hawaiians. Frequently the soil on the floor of larger pits was used for cultivation, and even today one comes

upon banana and Hawaiian sugar cane still growing in them. They afford shelter and protection, but I doubt if previous to the time of Cook [1778] there was ever a large population here [McAllister 1933:109].

4.2 Previous Archaeological Work near Honouliuli town

Beginning in the late 1970s, archaeological research has been conducted in Honouliuli in the general vicinity of the project area (Figure 14, Table 1). Work has focused on the West Loch Estates (northeast of the current project area), Pearl Harbor Naval Magazine (NAVMAG) – West Loch (east of the current project area), the ‘Ewa Gentry project and ‘Ewa Gentry Makai (south of the current project area), and the ‘Ewa Villages (north of the project area).

4.2.1 West Loch Estates

An archaeological reconnaissance survey (Rosendahl 1987) was conducted in association with the development of the 232-acre “West Loch Estates” Residential Increments I and II (including golf course and parks) project, which lies to the east of the present project area, in the section of the Honouliuli Taro lands adjacent to Pearl Harbor. This project covered portions of the old town of Honouliuli, the focus of population in the early historic period (and possibly earlier). This study identified a modern cemetery (Site 3319) with a remnant pre-Contact deposit; two historic sites of minimal integrity with some possible pre-Contact deposits (Site 3318 and 3320) at Kapapahu Point; a significant pre-Contact deposit with trash pits, fire pits and at least one human burial (Site 3321); a buried fishpond (Site 3322); an historic fishpond (Site 3323) built in the 1890s during the construction of the OR&L railroad; and a buried pond field system (Site 3324) (Rosendahl 1987:7, 9). It was noted that some artifacts “indicate the possibility of pre-1900 occupation” (Rosendahl 1987:8). As noted in the final reconnaissance survey report (Dicks et al. 1987:28) for the surface and subsurface reconnaissance survey, an effort was also made to relocate McAllister’s Site 139, Kalanamaihihi Ko‘a (fishing shrine). The archaeologists found a small boathouse and dock in the area and concluded that the shrine had been destroyed since McAllister’s survey in the 1930s.

A total of 21 radiocarbon dates were determined. At Site 3321, the cultural deposit, the age of a lower cultural deposit was dated to A.D. 540-880, while an upper deposit was dated to A.D. 1327-1640. For the buried fishpond (Site 3322), ages ranged from A.D. 70-610 in the lowest layer to A.D. 1160-1410 in the upper layer. For the buried pond field systems (Site 3324), ages ranged from B.C. 400-A.D. 240 (interpreted as the original surface of the upper valley) in the lowest layers to A.D. 1430-1952 in the upper layers of upper valley area and A.D. 1020-1280 in lower valley area. In summary, the authors (Dicks et al. 1987:78-79) concluded that agricultural use of the Honouliuli Stream floodplain for pondfield cultivation of taro may have begun in the lower valley segment as early as A.D. 1000, while cultivation of the upper valley pondfields may have begun as early as the thirteenth and fourteenth centuries. Site 3321 in the upper valley may have been a habitation locus established as early as the mid-sixth to mid-ninth century (Wolforth and Wulzen 1997).

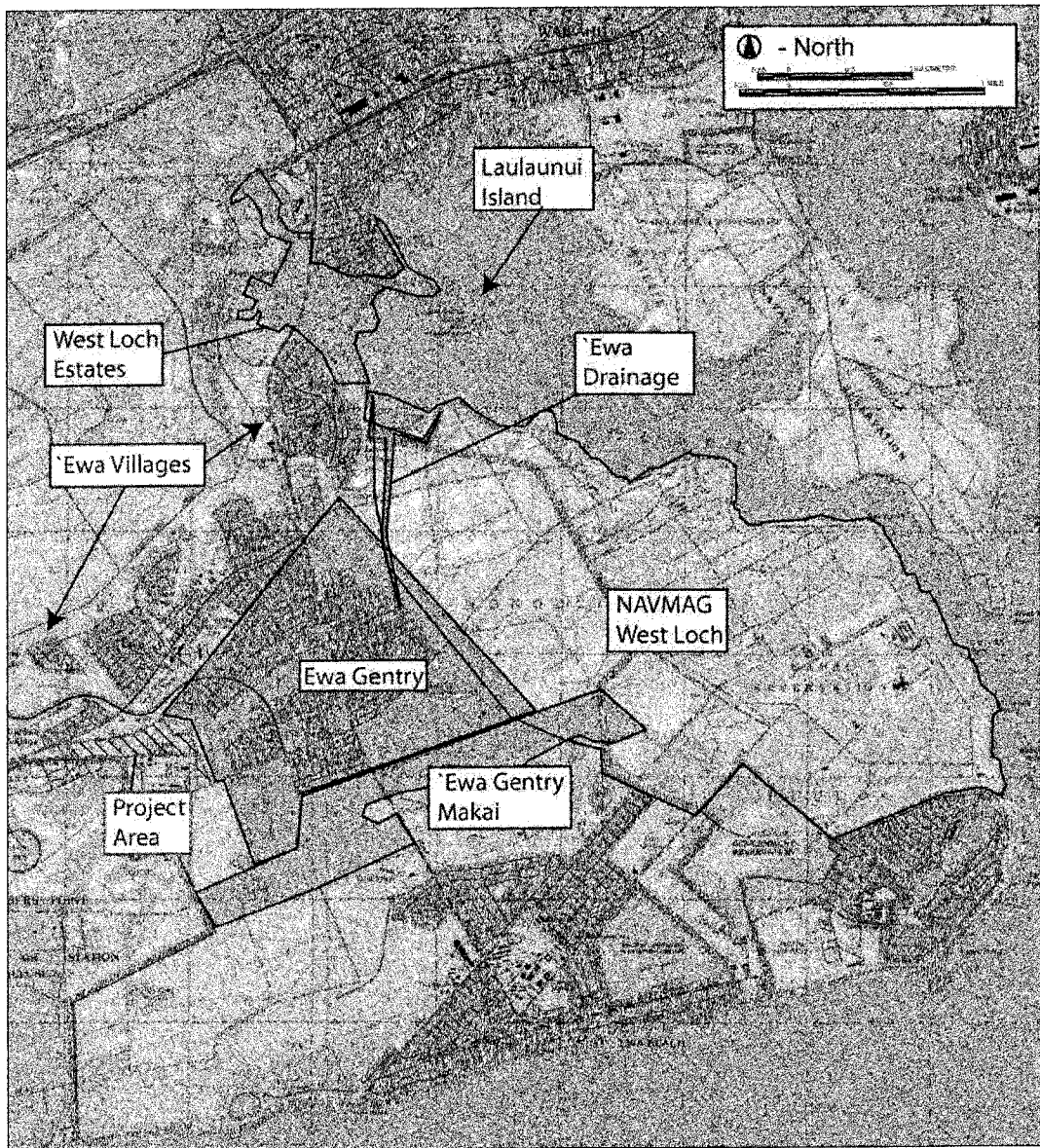


Figure 14. U.S. Geological Survey topographic map, showing previous archaeological survey areas near the current project area

Table 1. Summary of previous archaeological work near the project area

Reference	Nature of Study	Location	Findings
McAllister 1933	Archaeological Survey	Island-wide	Site 146. 'Ewa coral plains; sinkholes and ranching walls
Rosendahl 1987; Dicks et al. 1987	Reconnaissance Survey with subsurface testing	West Loch Estates	A modern cemetery (Site 3319) with a pre-Contact deposit, two historic sites with pre-Contact deposits (Site 3318, 3320), a pre-Contact deposit with a burial (Site 3321), a buried fishpond (Site 3322), an 1890s fishpond (Site 3323), and a buried pond field system (Site 3324)
Bath 1989	Burial Find	West Loch	One inadvertent burial found at Ho'ae'ae Point (Site 4816)
Sinoto 1978	Reconnaissance Survey	NAVMAG-West Loch	Ten burials, at least some historic, were found in a sinkhole used as a crypt
Davis & Burtchard 1991	Inventory Survey	NAVMAG-West Loch	No sites found, probably due to extensive ground disturbance.
Kennedy et al. 1992	Inventory Survey with subsurface testing	NAVMAG-West Loch	Recorded 25 sites associated with ranching, military training, and modern quarrying
Landrum et al. 1997	Overview Study	NAVMAG-West Loch	Overview of previous archaeological work at West Loch
Jensen & Head 1997	Reconnaissance Survey	NAVMAG-West Loch	Seven military features and one cave with a blocked entrance were found in the Outleased Area
Corbin et al. 1996	Reconnaissance Survey	Laulaunui Island	Noted Laulaunui Fishpond (McAllister's Site 140) and four concrete structures, probably military
Hammatt et al. 1990b	Reconnaissance Survey	'Ewa Villages	No pre-contact surface features were noted.
Spear 1996	Reconnaissance Survey	West of Tenney & Varona Villages	No pre-contact surface features were noted.
Kennedy 1988	Reconnaissance Survey	'Ewa Gentry Project	No-pre-contact surface features found. The OR&L railroad bed (Site 9714) formed the mauka boundary of the project area.
Davis 1988	Subsurface Excavation	'Ewa Gentry Project	No pre-contact subsurface features were noted.
Pantaleo & Sinoto 1993	Inventory Survey	'Ewa Gentry Off-Site Drainage System	A portion of the OR&L railroad bed (Site 9714) was found.
McIntosh & Cleghorn 2003	Archaeological Survey	'Ewa Gentry Makai	No pre-contact surface features were noted.
O'Hare and Shidleer 2006	Archaeological Assessment	'Ewa Industrial Park (Current Project)	No sites found, probably due to extensive ground disturbance.

In 1989, a burial was found on Hō'ae'ae Point (formerly called Kapapahu Point), when someone was digging under a mango tree on a residential property. There is no follow-up report (Bath 1989) to whether the bones were left in place or disinterred. The burial was given the site designation 50-80-13-4816.

4.2.2 NAVMAG – West Loch

In 1978, Sinoto conducted an archaeological reconnaissance survey on a 32-acre portion of NAVMAG-West Loch. A sinkhole 200 m inland and northwest of 'Oki'okiolepe Fishpond was found, containing ten human burials (Site 50-80-13-2310). The historic artifacts found in the pit, indicated that the pit was probably used by the Chinese in the historic period as a family crypt (Sinoto 1978).

Davis and Burtchard (1991) conducted an archaeological inventory survey of a 36-acre lot for a proposed housing area in the Pu'uloa portion of NAVMAG-West Loch in 1991. No archaeological sites were found. They concluded that extensive alteration to the landscape due to military land disturbance had erased all surface traces of pre-Contact habitation.

In 1992, a crew from Archaeological Consultants of Hawai'i, Inc. (ARCH) conducted an archaeological inventory survey with subsurface testing, and later data recovery at the proposed Pu'uloa Golf Course (Kennedy et al. 1992). A total of 72 sites were identified, 47 from the pre-Contact/early historic period and 25 sites associated with ranching, military training, and modern quarrying. Radiocarbon dates of these habitation, agricultural, and ceremonial sites indicate that traditional Hawaiian use extended from A.D. 1090 to 1695.

An overview survey of the NAVMAG Lualualei was completed by Ogden Environmental and Energy Services in 1997 (Landrum et al. 1997). A total of ten sites had been previously recorded during the West Loch project area, three in the Honouliuli section, one within Pearl Harbor (Site 140, Lualaunui Island), five on Waipi'o peninsula, one in both (salt works), and one encompassing all lands (Pearl Harbor Navy Base). In Honouliuli, the sites were: Site 141, Kaihuopala'ai (West Loch); Site 142, Loko Pamoku or Kapamuku; Site 143, 'Oki'okiolepe Fishpond; and salt works at Honouliuli (no site designation). NAVMAG-West Loch is considered part of the Pearl Harbor Navy Base (Site 50-80-13-9992) due to its importance during World War II. The site was listed as a National Historic Landmark in 1966, on the National Register of Historic Places (NRHP) in 1966, on the State Inventory of Historic Places (SIHP) in 1971, and on the State Register of Historic Places in 1971 (Landrum et al. 1997:160).

In 1996, a crew from Paul H. Rosendahl, Ph.D., Inc. (PHRI) completed a Phase I archaeological reconnaissance survey of the 1,483 acres of land at the U.S. Naval Magazine – West Loch Branch (Jensen and Head 1997). This survey covered the southern section of Waipi'o peninsula on the east side of West Loch, Lualaunui Island, the Naval Reservation on the west side of West Loch, and the West Loch Outleased Cultivated Lands, which included the National Wildlife Refuge. Only 25% of the outleased lands were actually surveyed. The PHRI crew found that most of the outleased area had been bulldozed for sugarcane cultivation. Only a small strip adjacent to West Loch was unmodified. In the West Loch Outleased Lands, eight features were recorded; all but one was associated with military use of the area. The seven military sites consisted of six concrete slabs (Sites 50-80-13-5040, 5080, 5081, 5133, 5134), a metal container (5080), and a pressure tank (5133). The one non-military site (4971) was a cave with a partially

blocked (blocked with roof fall) entrance that the crew members believed should be investigated in the future to see if it at one time was used as a pre-Contact or historic burial site (Jensen and Head 1997:85).

In 1996, a field reconnaissance of Laulaunui Island and fishpond was conducted by the State Historic Preservation Division (Corbin et al. 1996) to determine if restoration of the fishpond was possible and if the site would be a good candidate to be used as an educational tool. The crew simply walked to the island from the West Loch Waterfront Park. Water depth varied from one to four feet. Five concrete structures, probably built by the military, were observed. The fishpond was surrounded by mangroves and was silted in; portions of a coral wall (about 500 ft long) around the pond were still intact, and a concrete gate allowed water to circulate into the pond.

4.2.3 'Ewa Villages

In 1990, CSH (Hammatt et al. 1990b) conducted an archaeological reconnaissance survey of the 616-acre 'Ewa Villages project area, which is adjacent to the northern border of the current project area. The project area included three extant plantation villages (Renton Village, Tenney Village, and Varona Village), the sites of three former plantation villages (C Village, Mill Village, and Middle Village), and several other sites associated with the 'Ewa Plantation infrastructure, (the Plantation Cemetery, the 'Ewa Japanese School, 'Ewa Depot, the site of a previous Buddhist temple burned down in WWII, and a former reservoir site), and fields then under sugar cane cultivation. The surface survey of the land found no evidence of any prehistoric features within the project area and concluded that no further archaeological research in association with concerns for Hawaiian prehistory was necessary. However, because of the historic preservation concern 'Ewa Villages has merited, further documentation of some of the ruined historic sites was recommended.

In 1996, Scientific Consultant Services (Spear 1996) conducted an archaeological survey in an area west of the Tenney and Varona plantation villages and north of the Honouliuli Treatment Plant. No archaeological sites were identified.

The northeast boundary of the project area (outside the fenced area) is the alignment of the O'ahu Railroad and Land Company (O.R.&L) right-of-Way. This railroad bed, from the intersection with Fort Weaver Road to the intersection of Farrington Highway and Lualualei Road in Nānākuli is currently listed on the National Register of Historic Places (Site 50-80-12-9714).

4.2.4 'Ewa Gentry Project

In the initial reconnaissance (Kennedy 1988) of the 1,016 acre 'Ewa Gentry survey area, no surface evidence of potentially significant pre-Contact remains was found. The old OR&L railroad bed/right of way (Site 50-80-12-9714) did form a portion of the *mauka* boundary. According to historic maps, a Filipino Camp for sugarcane workers once existed near the intersection of the OR&L bed and a cane road near Ft. Weaver Road, but the archaeologists did not find any surface remains for this camp.

A subsequent subsurface exploration was undertaken. Eighteen backhoe trenches were excavated; however, "no evidence of past in situ cultural activity was found anywhere in the Ewa Gentry project area" (Davis 1988).

An inventory survey was conducted in 1993 by Aki Sinoto Consulting (ASC) (Pantaleo and Sinoto 1993) for the 'Ewa Gentry Off-Site Drainage System. This proposed drainage project area is a narrow strip that extends along the western boundary of NAVMAG West Loch. An 1897 map of Pearl Harbor indicated that the OR&L railroad, saltpans, and a fishpond were within this project area. Only the railroad bed was found during the ASC survey. Iron flumes and concrete culverts (one with an inscribed date of July 1935) used for sugarcane irrigation were found bulldozed to the edge of the sugar cane fields near the drop-off to the shoreline of Pearl Harbor. These were not considered historically significant due to the absence of structural and locational integrity. No further archaeological work was recommended for this project prior to commencement of construction of the drainage system.

In 2003, Pacific Legacy (McIntosh and Cleghorn 2003) conducted an archaeological survey of the proposed 'Ewa Gentry Makai Development project area, which is adjacent to the southern (*makai*) boundary of the 'Ewa Gentry project area for the 1988 surface and subsurface inventory surveys (Kennedy 1988; Davis 1988). No surface pre-contact features were noted.

4.3 Main Areas of Settlement

Within this natural setting archaeological and traditional sources show a general pattern of three main areas of settlement within the *ahupua'a*: a coastal zone, inland settlement at Pu'u Ku'ua and the Honouliuli taro lands.

4.3.1 Honouliuli Settlement Patterns

The *ahupua'a* of Honouliuli is the largest traditional land unit on the island of O'ahu. Honouliuli includes all the land from the western boundary of Pearl Harbor (West Loch) westward to the 'Ewa/Wai'anae District Boundary with the exception of the west side of the harbor entrance, which is in the *ahupua'a* of Pu'uloa (the 'Ewa Beach/Iroquois Point area). This comprises approximately 12 miles of open coastline from One'ula westward to Pili O Kahe. The *ahupua'a* extends *mauka* (almost pie-shaped) from West Loch nearly to Schofield Barracks, and the western boundary is the Wai'anae Mountain crest running *makai* to the east ridge of Nānākuli Valley.

Not only is there a long coastline fronting the normally calm waters of leeward O'ahu, but also there are also four miles of waterfront along West Loch. The land immediately *mauka* of the Pacific coast consists of a flat karstic raised limestone reef forming a level nearly featureless "desert" plain marked in pre-Contact times (previous to alluviation caused by sugar cultivation) by a thin or non-existent soil mantle. The microtopography is notable in containing countless sinkholes in some areas caused by chemical weathering (dissolution) of the limestone shelf.

Along the eastern flank of the Wai'anae Mountains, numerous gulches have contributed to the alluvial deposits over the coastal limestone shelf. The largest of the gulches is Honouliuli Gulch, which drains into West Loch. The gulches are generally steep-sided in the uplands and generally of a high gradient until they emerge onto the flat 'Ewa plain. The alluvium they have carried has spread out in delta fashion over the *mauka* portions of the plain, which comprises a dramatic

depositional environment at the stream gradient change. These gulches are generally dry, but during seasonal Kona storms carry immense quantities of runoff onto the plain and into the ocean. As typical drainages in arid slopes, they are either raging uncontrollably, or are dry and, as such, do not form stable water sources for traditional agriculture in their upper reaches. The Honouliuli gulches generally do not have valleys suitable for extensive irrigated agriculture; however, this lack is more than compensated for by the rich watered lowlands near West Loch.

Honouliuli Ahupua'a, as a traditional land unit, had abundant and varied resources available for exploitation by early Hawaiians. The "karstic desert" and marginal characterization of the limestone plain, which is the most readily visible terrain, does not do justice to the *ahupua'a* as a whole. The richness of this land unit is marked by the following available resources:

- 1) 12 miles of coastline with continuous shallow fringing reef, which offered rich marine resources.
- 2) Four miles of frontage on the waters of West Loch, which offered extensive fisheries (mullet, *awa*, shellfish), as well as frontage suitable for development of fishponds.
- 3) The lower portion of Honouliuli Valley in the 'Ewa plain offered rich level alluvial soils with plentiful water for irrigation from the stream as well as abundant springs. This land would have stretched well up the valley.
- 4) A broad limestone plain, which because of innumerable limestone sinkholes, offered a nesting home for a large population of avifauna. This resource may have been one of the reasons for early human settlement.
- 5) An extensive upland forest zone extending as much as 12 miles inland from the edge to the coastal plain. As Handy and Handy (1972:469) have pointed out, the forest was much more distant from the lowlands here than it was on the windward side, but on the leeward side was more extensive. Much of the upper reaches of the *ahupua'a* would have had species-diverse forest with *kukui*, *'ohia*, sandalwood, *hau*, *ti*, banana, etc.

Within this natural setting, archaeological and traditional sources show a general pattern of three main areas of settlement within the *ahupua'a*: a coastal zone, the Honouliuli taro lands, and inland settlement at Pu'u Ku'ua.

4.3.2 The Coastal Zone - Kalaeloa (Barbers Point), Ko'olina (West Beach)

Kalaeloa (Barbers Point)

Archaeological research at Barbers Point has focused on the areas in and around the newly constructed Deep Draft Harbor (Barrera 1975; Davis and Griffin 1978; Hammatt and Folk 1981, McDermott et al. 2000). Series of small clustered shelters, enclosures and platforms show limited but recurrent use at the shoreline zone for marine-oriented exploitation. This settlement covers much of the shoreline with more concentrated features around small marshes and wet sinks. Immediately behind the shoreline, under a linear dune deposit, is a buried cultural layer believed to contain some of the earliest habitation evidence in the area.

Early Hawaiians would have been attracted to the area by the plentiful and easily exploited bird population. Particular evidence for taking of petrels occurs at Site -2763 (Hammatt and Folk 1981:213). Initial heavy exploitation of nesting seabirds and other species in conjunction with habitat destruction probably led to early extinction. There is some indication of limited agriculture in mulched sinkholes and limited soil areas. Considering rainfall, this activity would have been limited, but probably involved tree crops and roots (sweet potatoes). The archaeological content of the sites indicates a major focus on marine resources.

Davis and Griffin (1978) distinguish functional classes of sites, based on surface area size and argues that the Barbers Point settlement consists of functionally integrated multi-household residence groups. Density contours of midden (by weight) and artifacts (by numbers) plotted for residence sites by Hammatt and Folk (1981) generally indicate narrowly defined spatial foci of discard, possibly indicating continuous use, or at least with no refurbishing or additions to the structures through time (Hammatt and Folk 1981). The focus is small habitation sites, typically lacking the full range of features found in large permanent residence complexes such as high platforms, complex enclosures, and ceremonial sites.

Ko'olina(West Beach)

There are three available studies on the Ko'olina project area (Davis et al. 1986a; Davis et al. 1986b; and Davis and Haun 1987).

Davis documents around 180 component features at 48 sites and site complexes consisting of habitation sites, gardening areas, and human burials. Chronologically the occupation covers the entire span of Hawaiian settlement, in what Davis and Haun describe as "one of the longest local sequences in Hawaiian prehistory" (Davis and Haun 1987:37). The earliest part of the sequence relates to the discovery of an inland marsh, and early dates were obtained for the beachfront site and an inland rock shelter.

4.3.3 Honouliuli Taro Lands

Centered around the west side of Pearl Harbor at Honouliuli Stream and its broad outlet into the West Loch are the rich irrigated lands of the *'ili* of Honouliuli, which give the *ahupua'a* its name. The major archaeological reference to this area is Dicks et al. (1987) who documented remnants of a once-widespread wetland system (*lo'i* and fishponds) as well as dryland cultivation of the adjacent slopes. The current study area is adjacent (on the eastern project boundary) to this environmental zone.

The area bordering West Loch was clearly a major focus of population within the Hawaiian Islands, and this was a logical response to the abundance of fish and shellfish resources in close proximity to a wide expanse of well-irrigated bottomland suitable for wetland taro cultivation. The earliest detailed map (Malden 1825; see Figure 8) shows all the roads of southwest O'ahu converging and descending the *pali* (cliff) as they funnel into the locality (i.e. Honouliuli Village). Dicks et al. (1987:78-79) conclude, on the basis of 19 carbon isotope dates and 3 volcanic glass dates that "Agricultural use of the area spans over 1,000 years." Undoubtedly, Honouliuli was a locus of habitation for thousands of Hawaiians. Pre-Contact population estimates are a matter of some debate but it is worth pointing out that in the earliest mission census (Schmitt 1973:19) 1831-1832, the land (*'āina*) of Honouliuli contained 1026 men, women, and children. It is not clear whether this population relates to Honouliuli Village or the

entire *ahupua'a*, but the village probably contained the vast majority of the district's population. The nature of the reported population structure for Honouliuli (less than 20% children under 12 years of age) and the fact that the population decreased more than 15% in the next 4 years (Schmitt 1973:22) suggests that the prehistoric population of Honouliuli Village may well have been significantly greater than it was in 1831-1832. A conservative estimate would be that tens of thousands of Hawaiians lived and died at Honouliuli Village.

4.3.4 Pu'uku'ua: Inland Settlement

It is mentioned in Mo'olelo that the area of Pu'uku'ua, on the east side of the Wai'anae Ridge, north east of the current project area, seven miles inland of the coast, was a Hawaiian place of great importance.

In 1899, the Hawaiian language Newspaper "*Ka Loea Kālai'āina*" relates a story of Pu'uku'ua as "a place where chiefs lived in ancient times" and a "battle field," "thickly populated." This area was well known by all O'ahu chiefs and customary for them to visit. The term *Kauwā* was first used here because of a one armed chiefess who was ashamed and ran when other chiefs would visit. She was not a *Kauwā* she only behaved as one. The article:

The chiefs of old, who lived at that time, were of divine descent. The two gods [Kāne and Kanaloa] looked down on the hollow [vicinity of Pu'u Ku'ua] and saw how thickly populated it was. The mode of living here was so that chiefs and commoners mixed freely and they were so like the lowest of people (*Kauwā*). That is what these gods said and that was the time when the term *kauwā* was first used, and was used for many years afterwards. After the first generations of chiefs had passed away and their descendants succeeded them, a chiefess Oahu to visit this place to see the local chiefs. They did this always. When the time came in which a new chiefess ruled, an armless chiefess, she ran away to hide when other chiefs came to visit as usual because she was ashamed of her lack of an arm. Because she was always running away because of being ashamed the chiefs that visited her called her the low-born (*kauwā*). Thus the term remained in the thoughts down to this enlightened period. She was no truly a *kauwā* but was called that because she behaved like one. This was how they were made to be *kauwā*.... (*Ka Loea Kālai'āina*, July 8, 1899 in Sterling and Summers 1978:33).

McAllister recorded three sites in this area: two *heiau* (134, 137) (Pu'u Kuina and Pu'uku'ua, both destroyed) and a series of enclosures in Kukuilua which he called "kuleana sites" (McAllister 1933). On the opposite side of the Wai'anae range, along the trail to Pōhākea Pass, Cordy (2002:36) states "Kākuihewa was said to have built (or rebuilt) Nōi'ula, a *pō'okanaka heiau* (1,300 square meters) in Hālonā in upper Lualualei, along the trail to Pōhākea Pass leading into 'Ewa, ca. A.D. 1640-1660" (Cordy 2002:36). There is no direct archaeological evidence available to the authors' knowledge that intensive Hawaiian settlement occurred here, but it is considered as a place of high probability, based on the above indications. John Papa 'Ī'ī (1959) described a journey that Liholiho took which led him and an entourage through inland Honouliuli and over Pōhākea Pass. Geographically, the area receives sufficient quantities of water and would have had abundant locally available forest resources.

Section 5 Community Consultation

5.1 Introduction

Throughout the course of this study, an effort was made to contact and consult with Hawaiian cultural organizations, government agencies, and individuals who might have knowledge of and/or concerns about traditional cultural practices specifically related to the project area. CSH made this effort by letter, e-mail, telephone, and in personal contact. In the majority of cases, a letter along with a TMK map and a USGS topographical map of the project area were mailed with the text shown below. Parties contacted are listed in Table 2 on the following page.

At the request of Ewa Industrial Park, LLC, Cultural Surveys Hawai'i is conducting a Cultural Impact Assessment (CIA) for the Ewa Industrial Park Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu (TMK: 9-1-069:003) (Figures 1 and 2).

The purpose of the Cultural Impact Assessment is to assess potential impacts to traditional cultural practices as a result of future development of the proposed Ewa Industrial Park Project. The development will include commercial, wholesale and retail distribution and self-storage.

We are seeking your *kōkua* or help and guidance regarding the following aspects of our study:

General history and present and past land use of the project area.

Knowledge of cultural sites which may be impacted by future development of the project area - for example, historic sites, archaeological sites, and burials.

Knowledge of traditional gathering practices in the project area – both past and ongoing.

Cultural associations of the project area, such as legends and traditional uses.

Referrals of *kūpuna* or elders who might be willing to share their cultural knowledge of the project area and the surrounding *ahupua'a* lands.

Any other cultural concerns the community might have related to Hawaiian cultural practices within or in the vicinity of the project area.

Table 2 Community Consultation

NAME	AFFILIATION	COMMENTS
Barbieto, Lida	Raised in Ewa Plantation (Banana /Varona camp)	Mrs. Barbieto mentioned the pig farms that were in the project area and the train tracks that border the project area. Presently the area is leased to a man who runs a construction company, possibly Bruce Germain.
Barbieto, Pio	Raised in Ewa Plantation (Banana /Varona camp)	Mr. Barbieto remembers a lot of <i>kiawe</i> and the pig farm in the current project area.
Bautista, Gary	'Ewa Neighborhood Board	No response at this time.
Eaton, Arline	Kupuna at Iroquois Point Elementary School	See Section 6 on Traditional Cultural Practices below.
Fukushima, Ralph	Lived in the project area for the past 10 years	Mr. Fukushima mentioned that the project area was a housing area and a pig farm. He is not aware of anything culturally significant.
Germain, Bruce	Lives on part of the project area	Mr. Germain is not aware of anything culturally significant.
Kane, Shad	'Ahahui Siwila Hawaii O Kapolei Hawaiian Civic Club	Mr. Kane is unfamiliar with the area.
Malama, Tesha	'Ewa Villages Association	Ms. Malama suggested contacting Shad Kanē.
Maria, Sunny (Goggles)	Raised in Tenney Village; Chief power plant operator for Ewa Plantation (72 Years old)	Mr. Maria hunted for doves in the project area. He mentioned the project area was used as a pig farm and pasture for cows.
McKeeque, Kawika	O'ahu Island Burial Council Member, 'Ewa District	See Section 6 on Traditional Cultural Practices below.
Nakamura, Fumiko	Raised in Tenney Village (79 years old)	Mrs. Nakamura stated she did not go near the project area.
Nakamura, Kojiro (Freckles)	Raised in Tenney Village (81years old)	Mr. Nakamura stated that there were cows and a pig farm in the project area.
Nakamatsu, Charles	Raised in the Ewa Plantation in C Village.	Mr. Nakamatsu's family ran a pig farm in the project area in the 1930's. They leased agriculture land from the

		plantation for a \$1 a year. They would <i>kālua</i> (bake in the ground) the pigs and sell them. Eventually that was too much work so they used the Filipino style of <i>hulihuli</i> (to turn) the meat to prepare it. This was more profitable. There were 30 to 40 pigpens in the area.
Nāmu'o, Clyde	Administrator at Office of Hawaiian Affairs	Contacted by letter. No response at this time.
Paishon, Frank Jr.	Raised in Tenney Village	The project area was at one time a housing area for OR & L employees and a pig farm.
Quintal, Leti	Raised in Ewa Plantation, Secretary for the Immaculate Conception Church in 'Ewa	Made referral to Lida and Pio Barbieto.
Ramos, Rodolfo	Chair of 'Ewa Task Force	Contacted by letter. No response at this time.
Sato, Melvin	Raised in Ewa Plantation "C" Village	Mr. Sato's main recollection of the project area is of pig farms. He also recalls that as a child he would find bullet casings on the ground from prior use by the military.
Soma, Kenneth	Retired from Ewa Plantation and current resident	Mr. Soma recalls many military remnants in the project area. South of the project area, the military had anti-aircraft guns. The plantation had cattle and a dairy on the east end of the project area. Also on the east end of the project area there were eight houses that OR & L owned for their workers. The Japanese also raised bees for honey in the project area.
Soma, Millie	Raised in Ewa Plantation Tenney Village	Mrs. Soma remembers the pig farm in the project area.
Tiffany, Nettie	Kahu of Lanikūhonua and former O'ahu Island Burial Council Member, 'Ewa District	Mrs. Tiffany suggested consultation with people who worked at the Ewa Plantation.

Section 6 TRADITIONAL CULTURAL PRACTICES

Traditional cultural practices are based on knowledge passed down from generation to generation concerning harmony between humans and their natural resources. The Hawaiians of old depended on these cultural practices for survival. Based on their familiarity with specific places and through much trial and error, Hawaiian communities were able to devise systems that fostered sustainable use of resources. Many of these cultural practices are still practiced in some of Hawai'i's communities today.

Discussions of specific aspects of traditional Hawaiian culture during interviews and "talk story" sessions are incorporated throughout this section as they may relate to the Project Area. The interviewees are represented by first and last initials with CSH denoting the Cultural Surveys Hawai'i interviewer.

6.1 Gathering for Plant Resources

Given the environmental constraints within this portion of the *ahupua'a*, it is likely that the major traditional cultural practice associated with the present Project Area would have been the gathering of native plant resources. Barbara Frierson (1973) compiled a list of native plant species present in Honouliuli before 1790. Additionally, plant use data based on I. Abbott (1992) was added to Table 3, and lists Honouliuli lowland plants and uses with columns for common/Hawaiian name, scientific name and use.

Table 3: Native Plants in Honouliuli

Hawaiian/Common Name	Scientific Name	Use
<i>Hala</i> , pandanus	<i>Pandanus odoratissimus</i>	Weaving
<i>Hau</i> , hibiscus	<i>Hibiscus tiliaceus</i>	Cordage
<i>Milo</i>	<i>Thespesia paradisiaca</i>	Wood used for bowls
<i>Neneleau</i> , Sumac	<i>Rhus sandwicensis</i> <i>Rhus chinensis</i>	Unknown
<i>'Ilima</i>	<i>Sida cordifolia</i>	Leis, medicine
<i>Kou</i>	<i>Cordia subcordata</i>	Bowls
<i>Makaloa</i> , sedge	<i>Cyperus laevigatus</i>	Mats (Abbott)
<i>Pili</i> grass	<i>Heteropogon contortus</i>	Thatch
<i>Kakonakona</i> , grass	<i>Panicum torridum</i>	Unknown
<i>Honohonowai</i>	<i>Commelina nudiflora</i>	Unknown
<i>Ma'o</i> , cotton	<i>Gossypium tomentosum</i> <i>Abutilon incanum</i>	Flowers used as dye for kapa (Abbott)

Hawaiian/Common Name	Scientific Name	Use
'Ūlei	<i>Osteomeles anthyllidifolia</i>	Branches used for fishing nets (Abbott)
'Uhaloa	<i>Waltheria americana</i>	Medicine (Abbott)
Koali'ai	<i>Ipomoea cairica</i>	Cordage (Abbott)
Pā'ū o Hiiaka	<i>Jacquemontia sandwicensis</i>	Unknown
Ko'oko'olau	<i>Bidens</i> sp.	Used as tea (Abbott)
'Ulu, breadfruit	<i>Artocarpus incisus</i>	Food
Taro	<i>Colocasia esculenta</i>	Food
Niu, coconut	<i>Cocos nucifera</i>	Food, liquid

The accessibility of Honouliuli lands, including the present Project Area, to the Hawaiians for gathering or other cultural purposes would be radically curtailed during the second half of the nineteenth century. As noted above in this evaluation, by the 1870s, herds of cattle grazing across the 'Ewa Plain likely denuded the landscape of much of the native vegetation. Subsequently, during the last decade of the nineteenth century, the traditional Hawaiian landscape was further altered by the introduction and rapid development of commercial sugar cane cultivation.

6.2 Burials

East of the Project Area, a pre-contact Native Hawaiian burial was found at Hō'ae'ae Point (Papapūhi Point) in West Loch Estates, and an historic Chinese crypt was found in a cave in the NAVMAG-West Loch area, (see Figure 14). However, none of the interviewees knew of any burials in the Project Area. Nettie Tiffany and Arline Eaton both stressed that there is always a potential for burials in sinkholes in the Honouliuli area. Additionally, Auntie Arline Eaton did suggest that if people were living in the area, there is a possibility of burials:

My only thought is that for every person that lives in that area, that's where they bury their people . . . We never said anything. If people died, we'd go over there and they'd bury them right there where the house is. We'd never go four-hundred-million-miles away, its right there. All your 'ohana stay right in the same area. We never went afar, not in the rural areas.

6.3 Historic Properties

Cultural Surveys Hawaii previously performed an Archaeological Assessment of the Project Area in 2006 and did not identify any historic features (O'Hare et al 2006).

6.4 Trails

Trails served to connect the various settlements throughout the District of 'Ewa. Based on nineteenth and twentieth century maps, the primary transportation routes *mauka/makai* and cross-*ahupua'a* correlated closely to the existing major roadways. John Papa 'I'i describes a network of Leeward O'ahu trails that in later historic times encircled and crossed the Wai'anai Range, allowing passage from West Loch to the Honouliuli lowlands, past Pu'uokapolei and Waimānalo Gulch to the Wai'anai coast and onward, circumscribing the shoreline of O'ahu ('I'i 1959:96-98). It seems clear that a major east/west artery from 'Ewa and Kona O'ahu to Wai'anai was the pre-cursor trail that 'I'i was referring to, and what could possibly be the current Farrington Highway. Two other mauka/makai trails are depicted on an 1825 Malden map. However, today no remnants of the trail remain. (See Figure 8).

6.5 Wahi Pana (Storied Places)

The concept of *wahi pana* (a place with a story or legend attached to it) is very important in the Hawaiian culture because it is a connection to the past and, therefore, the ancestors. From the name of a place, one can know intimate details about the people who lived there, the environment, cultural practices, and historical events that took place. In Hawaiian culture, if a particular spot is given a name, it is because an event occurred there that has meaning for the people of that time. Because Hawaiian culture was based on oral traditions, place names and their stories were an important way of remembering these traditions and ensuring these stories would be passed on to future generations. In Hawaiian thinking, the fact that a place has a name attests to its importance. Often, spiritual power or *mana* is attached to a place, which increases its importance. On the subject of *wahi pana*, Edward Kanahale writes:

As a native Hawaiian, a place tells me who I am and who my extended family is. A place gives me my history, the history of my clan, and the history of my people. I am able to look at a place and tie in human events that affect me and my loved ones. A place gives me a feeling of stability and of belonging to my family, those living and dead. A place gives me a sense of well-being and of acceptance of all who have experienced that place [Kanahale, in James 1995:6].

Aunt Arline Eaton agrees that it is very important to use the old place names that were given by Hawaiian people because they give meaning to a specific area (see Figure 7):

CSH: *How come they don't have Kūpaka on the map? Here's Ke'ahi and Kūpaka,*

AE: [showing on map] right here, in this area, 'Ewa beach road. Kūpaka goes all the way up to where Parish Drive is. And it was named after Mr. Dowsett and the Parishes, 'cause they're related, they were the ones that came with Kamehameha. So he lived here, in Ke'ahi, and it was him who gave that name, Kūpaka, for that area. So that's why he named that area, and yet there was nothing [nothing there]. These people came and they gave all that land to the Dowsetts and the Parishes. [CSH: Liholiho] Yeah, he gave it to them.

CSH: *What did you call this beach?*

AE: Keone O Keahi and Keone O Kūpaka, all of this is Pu'uloa. All the way down till you come to Keone'ula. Actually, it's Keone'ula because that's where that 'alaea was. A lot of people don't know, but that's the reason why it was named that. It should not be One'ula, it should be Keone'ula. I keep saying that over and over they say, why you have to put that, Keone'ula?

CSH: *So, it's the beach-that-is-red, the red beach?*

AE: Yeah. But of course it doesn't show it now, but at that time, even when I was young, I remember seeing that big mound. Because all of this was fishponds. All in this area, this whole place all the way going down too!! I don't like to say, Pearl Harbor the name should be Pu'uloa, until even Manana, all of that had fishponds. This whole area was like that, and salt pans.

Kapapapūhi is a point just east of the Project Area and Aunty Arline Eaton shared a story about this special place that was told to her as a child:

Oh yeah, you talking about the outside area. Had *pūhi* [eel] all over, but mainly they used that point. There's a *mo'olelo* [story] that goes with that. There was this *pūhi* who is supposed to be, like, king of the area, and the *Tutukane* and the *Tutuwahine* came over there, and the *pūhi* looked and said ooh that *wahine*, I like that one. Well so the *pūhi* make sure plenty *i'a* [marine creatures] around, and one day the *Tutukane* never came, only her went over there, and she was picking *'opihi* [limpets]. Pretty soon she went underneath the water, and he saved her. . . . He loved her, he fell in love with her. And he didn't want to let her go. And she said, Oh please I want to go home, and he said, no you stay with me, don't go, I'll give you everything you want, and you don't have to worry. And she cried, and she cried. Then he found out that boy that came down was not her sweet heart or anything, that was her brother. But you know Hawaiian style! And together they would always go out and go fishing because the father had gone out fishing and got lost, and only had the mama. And the mama wasn't feeling well. So these two [the brother and sister] would help out the grandmama and grandfather and go out. And the *pūhi* felt so sorry, so he said okay but anytime you need help I will always be here. And so every time I see this place and see this name I think of that. I could imagine him just standing over there and looking at her and thinking, oh how he loved her. Yeah that's one of the stories that they had about that. And that was told to me, I don't see it in a book. My papa told me that so I always remembered that. Then there was a song . . . that they would sing, it was so pretty.

Below Kawika McKeaque, shares his mana'o on the meaning of *wahi pana* and how Hawaiian culture is strongly rooted to their ancestors and the *'āina*:

1) Spiritual transcendence imbued into physical landscape- there is a fine line of existence and being within the worlds of the ethereal and "reality" within the entire Honouliuli Ahupua'a. This fine line between two worlds of knowing, perceiving, and attaining life essence creates a cultural/spiritual foundation for this area to provide the means for moments of revelation through various

sensories. These *ho'ike* reveal themselves through *'ike papalua*, secondary sight/knowledge, *hihi'o*, *akaku*, and *ho'ike na ka po*.

Even the name of *the ahupua'a* is suggestive of the deep well of knowledge and understanding that comes from the time of Po. Some of the supporting elements to this line of thought of extrasensory "enlightenment" to delve into different plains of being and existence include:

a) Kapo'ulakina'u- (Kapo of the red streaked with dark) the female *akua* that provides inspiration and insight only through one's dreams- her presence demarked by the *ula* rays of the setting sun, which also belongs to Hina/Papa/Haumea;

b) The area of Kaupē'a- the plains of the *ao auana*, where unsettled souls wander and dwell.

c) Hoakalei- area near White Plains Beach- where it is said that Hi'iaka receives vision of the death of Hopoe and the burning groves of *lehua* on Hawai'i island.

d) Pu'uomakakilo- any term with *kilo*- indicative of being able to read *ho'ailona*, second sighters, if you will

e) Mo'olelo of Kamapua'a- foretells or gives Kamaunaaniho the *ho'ailona* that will reveal his death at Pu'uokapolei- the smelling burning bristles.

2) Sensory exploits of the female persona- you look at the natural landscape and you begin to understand some of the place names are related to physical, emotional, and spiritual cycles that are a natural part of a wahine's passage through and during childbirth. There's multiple loaded *kaona* in these place names but there is commonality again in sensory experiences that sustain the cyclic nature between life and death, ignorance and enlightenment, po to ao-

a) Pu'umanawahua- discomfort of the stomach, nausea; to suffer great grief; also jealousy

b) Pu'ukapua'i- to cause to flow, to bubble, gurgle; to vomit; to appear, as a color; variation on the word *kapua'i* also means to tread

c) Pu'umo'opuna- grandchild; offspring; relative or descendant two generations later

d) Puuku'ua- to release; let go; discharge

e) Pu'upoulihale- again the reference to *uli*- any dark color, richness of vegetation, of seed banks; also female *akua* of certain sorcery; short for *'ouli*-study of omens; also the name for the developmental stage of a fetus, as the body begins to form. *Pouli* can mean darkness, sometimes ignorance (modern mental ascription to the

night but a more traditional line of thinking could be that of Po, of knowledge beyond the sensory experiences of ao, of being awake, in the light; the knowledge that stems from such a time of antiquity.

f) Akupu- to sprout; germinate; supernatural

g) Awanui Gulch- could reference the "large passage", indicative of birthing passage or "outburst" (alluding to Papahanaumoku/Haumea's birth of the island-geologically one of the main outvents of Wai'anae volcanic eruption);

h) Pohakea- where Pele receives the cloud omens; where Kauhi kills Kahalaopuna who is resuscitated by her *pueo* 'aumakua. I've been taught that name ascribed is Poha a Kea- the bursting forth (as thunder) of Kea (or Wakea)- presence of all the childbearing qualities and emotions; the ability of a woman to bring life into the world; of Papa to give birth to the islands, Wakea's presence must be the balance. However, some traditions cite that Papa and Lua mated to birth O'ahu in Papa's jealousy of Wakea and Ho'ohokukalani's relationship. In Pele and Hi'iaka epic, Hi'iaka undergoes a long period of visions *and mo'olelo/oli* are iterated (so much so Emerson's says there's too much going on that he purposefully does not include it in his account).

i) Palehua- I disagree with Pukui; I don't believe it's only meaning is the *lehua* enclosure; I see two other words prominent- pale and hua, the idea that this place is where the hua is protected or perhaps in another meaning one is protected by *hua*, by jealousy

j) Palikea- the cliff of Kea (Wakea)- he is detached from the processes of the childbearing activities that are evident with the form of these *pu'u*- this distinguished "setting aside" of place for Kea further support that the mountainscape down to Pu'uokapolei is female, is lifebearing, is transcending between this life and others yet to be or that have passed before.

k) Palailai- I disagree with Pukui; I don't believe it's the "young of the lai fish"- my *hale* is on the northeast corner of its *kahua*- I believe it's to "experience or be in a state of being calm and clear"- again sensory; having clear vision or thought as something is born in thought through experience

l) Mauna Kapu- I know some say this is regards to Kakuhihewa's *kapu*. Could be my *mana'o* is that this point clearly defines what is Wakea and what is Papa, my *mana'o* only...Papa giving birth- woman giving birth-probably the strongest period where Haumea thrives and is more "powerful" or omniscient than Wakea-*kapu* had to be established to protect both male/female sources of identity.

m) Makaiwa- I think it is a shortened version of-Maka a aiwa, as in the face (essence) of complete mystery, incomprehensible (as in caught in a wake between two worlds- again transitional, balancing between two worlds).

If a person is aware of the *wahi pana* or *mo'olelo* of a place it gives a better understanding, a deeper sense of connection to the *'āina*. It is also important because it shows the characteristic of the land as seen above in the naming of Keoneula, 'Ewa and Honouliuli. The concept of *wahi pana* is vital to Hawaiian culture and its perpetuation of customs and beliefs.

Section 7 Summary

Honouliuli is associated with a number of legendary accounts. Many of these concern the actions of gods or demi-gods such as Kāne, Kanaloa, Māui, Kamapua'a, the reptile deity (*mo'o*) Maunauna, the shark deity Ka'ahupāhau, and the demigod hero Palila.

The project area lies just back from the coast, on the extensive 'Ewa limestone plain. Based on Honouliuli settlement patterns and archaeological investigations of the *ahupua'a*, the 'Ewa plain was probably never permanently inhabited. It could have provided temporary habitation for gatherers and fisherman traveling to the coast. A relatively barren and waterless area, it nonetheless may have been occasionally traversed, as the project area is situated between the relatively well-watered uplands and the *makai* ocean resources. Based on ethnographic accounts and past archaeological investigations in the project area and its vicinity, limestone sink holes on the 'Ewa Plain were used for agriculture and burial interment, with the largest sink holes used for temporary shelter. With the spread of Western land use in the 19th century, the project area was used for ranching first, then housing and pig farming. In general, the project area lies in a region that would have been less than bountiful, and therefore sparsely utilized, even in pre-contact times.

Hawaiian organizations, government agencies, community members, and cultural and lineal descendants with ties to Honouliuli were contacted to: (1) identify potentially knowledgeable individuals with cultural expertise and knowledge of the project area and its surroundings, and (2) identify cultural concerns and potential impacts within the project area. An effort was made to locate community members with ties to Honouliuli and neighboring *ahupua'a* who live or had lived in the region or who, in the past, used the area for traditional and cultural purposes. The people contacted for this assessment were not aware of any on-going cultural practices, archaeological sites, or trails within the project area.

However, Nettie Tiffany and Arline Eaton mentioned that the 'Ewa plains is a well-known place for sinkhole burials. Most of the people contacted mentioned that pig farming, military and ranching activities, heavily altered the project area. Also on the east end of the project area there were approximately eight houses that OR & L owned and used to house their workers.

Although early historic maps show the project area was between two important *mauka-makai* trails, this use for transportation did not leave any surface or sub-surface remains. The post-contact use of the area for habitation or military activities has not left any surface trace. The extensive ground disturbance observed in the project area, including cleared areas for pastures and paddocks in the central and western portions of the project area, and trash/rock/concrete piles in the eastern area, indicates that if there were once any pre-contact or any historic (more than 50 years ago) surface features, these have probably been destroyed. Based on the evidence gathered for this evaluation, no contemporary or continuing cultural practices were discovered within the project area.

It should be noted that subsurface properties associated with former traditional Hawaiian activities in the project area, such as artifacts, cultural layers, and burials may be present despite the decades of modern activities. As a precautionary measure, CSH recommends that personnel involved in the 'Ewa Industrial Park development project be informed of the possibility of

inadvertent cultural finds, and should be made aware of the appropriate notification measures to follow. In the unlikely event that previously unidentified subsurface historic properties are encountered by project construction, the project proponents should immediately stop work and contact SHPD's O'ahu Office [Tel. (808) 692-8015].

Section 8 References Cited

Abbott, Isabella A.

1992 *Lā'au Hawai'i: Traditional Hawaiian Uses of Plants*. Bishop Museum Press, Honolulu, HI.

Armstrong, Warwick (ed.)

1973 *Atlas of Hawai'i*. University of Hawai'i Press, Honolulu.

Barrera, William M., Jr.

1975 *A Report on the Archaeological Reconnaissance Survey of the Proposed Barbers Point Harbor Area*. Bernice P. Bishop Museum, Department of Anthropology, Honolulu.

Bath, Joyce

1989 *Burial of Hō'ae'ae Point in West Loch Project Area, Honouliuli, 'Ewa, O'ahu*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.

Beckwith, Martha

1940 *Hawaiian Mythology*. University of Hawai'i Press, Honolulu.

Bordner, Richard M., and Carol Silva

1983 *Archaeological Reconnaissance and Historical Documentation for Waimanalo Gulch and Ohikilolo Valley*. TMK: 9-2-03: 2,40,13 (por). Environmental Impact Study Corporation, Honolulu.

Bowser, George

1880 *The Hawaiian Kingdom Statistical and Commercial Directory*. Geo. Bowser & Co., Honolulu and San Francisco.

Campbell, Archibald

1967 *A Voyage Round the World from 1806 to 1812*. University of Hawai'i Press, Honolulu.

Charvet-Pond, Ann, and Bertell D. Davis

1992 *West Beach Data Recovery Program Phase 4, Archaeology and Paleontological Excavations*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Chiddix, Jim, and MacKinnon Simpson

2004 *Next Stop Honolulu! The Story of the Oahu Railway and Land Company*. Sugar Cane Press, Honolulu.

Condé, Jesse C. and Gerald M. Best

1973 *Sugar Trains, Narrow Gauge Rails of Hawa'ii*. Glenwood Publishers, Felton, California.

Commission on Boundaries

1862-1935 *Commission on Boundaries, Hawai'i (Kingdom, Republic, Territory)*. Records stored at the Archives of Hawai'i, Honolulu.

Corbin, John, Tom Dye, and Muffett Jourdane

1996 *Field Reconnaissance: Laulaunui Island and Fishpond*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.

Cordy, Ross

2002 *The Rise and Fall of the O'ahu Kingdom*. Mutual Publishing, Honolulu.

Damon, Frank

1882 Tours Among the Chinese, No. 1. *The Friend*, April 1882.

Davis, Bertell

1988 *Final Report Archaeological Subsurface Survey of the Proposed 'Ewa Gentry Project Area, Honouliuli, 'Ewa, O'ahu*. Bernice P. Bishop Museum: Honolulu.

Davis, Bertell D., and Greg C. Burtchard

1991 *Archaeological Inventory Survey of the Proposed PPV Housing Area, West Loch Unit of the Lualualei Naval Ammunition Depot, Pu'uloa, 'Ewa, O'ahu, Hawai'i*. International Archaeological Research Institute, Inc., Honolulu.

Davis, Bertell D., and P. Bion Griffin (eds.)

1978 *Studies in Natural History and Human Settlement at Barbers Point, O'ahu*. Archaeological Research Center Hawai'i (ARCH), Lawa'i, Kaua'i.

Davis, Bertell D., and Alan E. Haun

1987 *Interim Report: Phase (2) Intensive Survey and Test Excavations West Beach Data Recovery Program, Honouliuli, 'Ewa, Island of O'ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Davis, Bertell D., Alan E. Haun, and Paul H. Rosendahl

1986a *Phase 1) Research Design for Intensive Survey and Test Excavations, West Beach Data Recovery Program, West Beach Resort, Honouliuli, 'Ewa, O'ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

1986b *Phase 3) Data Recovery Plan for Archaeological and Paleontological Excavations, West Beach Data Recovery Program, West Beach Resort, Honouliuli, 'Ewa, O'ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Dicks, A. Merrill, Alan E. Haun, and Paul H. Rosendahl

1987 *Archaeological Reconnaissance Survey for Environmental Impact Statement, West Loch Estates Golf Course and Parks, Honouliuli, 'Ewa, O'ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Dillingham, B. F.

1885 *Memos concerning Honouliuli, Kahuku, and Hawailoa Ranches*. B.F. Dillingham, Honolulu.

Dorrance, William H., and Francis S. Morgan

2000 *Sugar Islands: The 165-Year Story of Sugar in Hawai'i*. Mutual Publishing, Honolulu.

Emerson, Nathaniel B.

1915 *Pele and Hi'iaka*. Copyright 1993. 'Ai Pōhaku Press, Honolulu.

Emory, Kenneth

1933 *Field Notes from Honouliuli Archeological Survey*. Department of Anthropology, Bishop Museum, Honolulu.

Ewa Plantation Company

1923 *Ewa Plantation Company Annual Report for 1923*. Microfilm at University of Hawai'i at Mānoa, Hamilton Library, Honolulu.

Foote, Donald E., E.L. Hill, S. Nakamura and F. Stephens

1972 *Soil Survey of the Islands of Kaua'i, O'ahu, Maui, Molokai and Lanai, State of Hawai'i*. U.S. Dept. of Agriculture, U.S. Government Printing Office, Washington, D.C.

Fornander, Abraham

1880 *An Account of the Polynesian Race. Its Origin and Migrations and the Ancient History of the Hawaiian People to the Times of Kamehameha I*. Volume II. Trübner, London.

1917 *Fornander Collection of Hawaiian Antiquities and Folklore*. Vol. IV, Part 2. T.G. Thrum editor. Memoirs of the Bernice P. Bishop Museum, Bishop Museum Press, Honolulu.

1919a *Fornander Collection of Hawaiian Antiquities and Folklore*. Vol. V, Part 2. T.G. Thrum editor. Memoirs of the Bernice P. Bishop Museum, Bishop Museum Press, Honolulu.

1919b *Fornander Collection of Hawaiian Antiquities and Folklore*. Vol. VI, Part 2. T.G. Thrum editor. Memoirs of the Bernice P. Bishop Museum, Bishop Museum Press, Honolulu.

Frierson, Barbara

1972 *A Study of Land Use and Vegetation Change: Honouliuli, 1790-1925*. Manuscript prepared for Graduate Seminar in Geography (750), University of Hawai'i, Honolulu.

Hammatt, Hallett H., and William H. Folk

1981 *Archaeological and Paleontological Investigation at Kalaeloa (Barbers Point), Honouliuli, 'Ewa, O'ahu, Federal Study Areas 1a and 1b, and State of Hawai'i Optional Area 1*. Archaeological Research Center Hawai'i (ARCH), Lawa'i, Kaua'i.

Hammatt, Hallett H., and David W. Shideler

1999 *An Archaeological Inventory Survey for the Waimānalo Gulch Sanitary Landfill Project Site, Honouliuli, 'Ewa, O'ahu*, Cultural Surveys Hawai'i, Kailua, Hawai'i.

Hammatt, Hallett H., Jennifer Robins, Mark Stride, and Matthew McDermott

1990a *An Archaeological Inventory Survey for the Makaīwa Hills Project Site, Honouliuli, 'Ewa, O'ahu*. Cultural Surveys Hawai'i, Kailua, Hawai'i.

Hammatt, Hallett H., David Shideler, and William Folk

1990b *Archaeological Reconnaissance of the 'Ewa Villages Project Site, Honouliuli, 'Ewa, O'ahu*. Cultural Surveys Hawai'i, Kailua, Hawai'i.

Handy, E.S. Craighill

- 1940 *The Hawaiian Planter, Volume 1. His Plants, Methods and Areas of Cultivation.* Bernice P. Bishop Museum Bulletin 161, The Museum, Honolulu.

Handy, E.S. Craighill, and Elizabeth G. Handy

- 1972 *Native Planters in Old Hawai'i: Their Life, Lore, and Environment.* Bernice P. Bishop Museum Bulletin 233, Honolulu.

Ī'i, John Papa

- 1959 *Fragments of Hawaiian History.* Bernice P. Bishop Museum, Honolulu.

Immisch, George B.

- 1964 *Land Reclamation and the Role of the Hydroseparator at Ewa Plantation: A Case Study of Some of the Effects of Mechanized Harvesting in the Hawaiian Sugar Industry.* Master's thesis, University of Hawai'i at Mānoa, Honolulu.

Indices of Awards

- 1929 *Indices of Awards Made by the Board of Commissioners to Quiet Land Titles in the Hawaiian Islands.* Commissioner of Public Lands. Star Bulletin Press, Honolulu.

James, Van

- 1995 *Ancient Sites of Hawaii, Archaeological Places of Interest on the Hawaiian Islands* Mutual Publishing, Honolulu, HI.

Jarrett, L.

- 1930 *A Source Book in Hawaiian Geography.* M.A. Thesis, University of Hawai'i, Honolulu.

Jensen, Peter M., and James Head

- 1997 *Archaeological Reconnaissance Survey, Naval Magazine Lualualei, NAVMAG-West Loch, Lands of Pu'uloa, Honouliuli, Waikele, and Waipi'o, District of Ewa, Island of O'ahu.* Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Juvik, Sonia P., and James O. Juvik (ed.)

- 1998 *Rainfall Atlas of Hawai'i.* Third Edition. University of Hawai'i Press, Honolulu.

Ka Hōkū o Hawai'i

- 1927 He Mo'olelo Ka'ao no Hi'iaka- i-ka poli-o-Pele. *Ka Hōkū o Hawai'i*, February 15, 1927.

- 1927 He Mo'olelo Ka'ao no Hi'iaka- i-ka poli-o-Pele. *Ka Hōkū o Hawai'i*, February 22, 1927.

Ka Loea Kālai'āina

- 1899 Na Wahi Pana o Ewa. *Ka Loea Kālai'āina*, July 8, 1899.

- 1900 Na Wahi Pana o Ewa. *Ka Loea Kālai'āina*, Jan. 13, 1900.

Kahiolo, G. W.

- 1998 *He Mo'olelo no Kamapua'a.* Hale Kuamo'o, Ka Haka 'Ula O Ke'eliokōlani, Hilo, Hawai'i.

Kamakau, Samuel M.

- 1976 *The Works of the People of Old, Nā Hana a Ka Po'e Kahiko*. Bernice P. Museum Special Publication 61. Originally published 1869-1870. Bishop Museum Press, Honolulu.
- 1991a *Tales and Traditions of the People of Old; Nā Mo'olelo a Ka Po'e Kahiko*. Originally published 1865-1869. Bishop Museum Press, Honolulu.
- 1991b *Ka Pō'e Kahiko; The People of Old*. Originally published 1869-1870. Bishop Museum Press, Honolulu.

Kame'eleihiwa, Lilikala

- 1992 *Native Land and Foreign Desires. Pehea La E Pono Ai?* Bishop Museum Press, Honolulu.

Kelly, Marion

- 1985 Notes on the History of Honouliuli. Appendix A In, *An Archaeological Survey of the Naval Air Station, Barbers Point O'ahu, Hawai'i*, by Alan E. Haun. Department of Anthropology, Bernice P. Bishop Museum, Honolulu.
- 1991 Notes on the History of Honouliuli. In A.E. Haun, *Archaeological Survey of the Naval Air Station, Barbers Point O'ahu, Hawai'i, Appendix A*. Applied Research Group, Bernice P. Bishop Museum, Honolulu.

Kennedy, Joseph

- 1988 *Archaeological Reconnaissance Report Concerning the Proposed 'Ewa Gentry Project in Honouliuli, O'ahu*. Archaeological Consultants of Hawai'i, Haleiwa, Hawai'i.

Kennedy, Joseph, James Berlin, and Tim Denham

- 1992 *Archaeological Data Recovery Report for the Pu'uloa Golf Course Located at 'Ewa, Island of O'ahu, TMK 9-1-01:27 & 6, Revised*. Archaeological Consultants of Hawai'i, Inc., Hale'iwa, Hawai'i.

Kuykendall, Ralph S.

- 1967 *The Hawaiian Kingdom, Vol.III*. University of Hawai'i Press, Honolulu.

Landrum, James, Robert Drolet, and Katharine Bouthillier

- 1997 *Cultural Resources Overview Survey, Naval Magazine Lualualei, Island of O'ahu, Hawai'i*. Ogden Environmental and Energy Services Co., Inc. Honolulu, Hawai'i.

McAllister, J.G.

- 1933 *Archaeology of O'ahu*. Bernice P. Bishop Museum Bulletin 104, Honolulu.

McDermott, Matthew, David Shideler, John Winieski, and Hallett H. Hammatt

- 2000 *Archaeological Data Recovery Report for the Archaeological sites in the Proposed Barbers Point Harbor Expansion Area, Kalaeloa, Ahupua'a of Honouliuli, District of 'Ewa, Island of O'ahu (TMK 9-1-14:2)*. Cultural Surveys Hawai'i, Kailua, Hawai'i.

McIntosh, James, and Paul L. Cleghorn

- 2003 *Archaeological Survey for the Proposed 'Ewa Gentry Makai Development 'Ewa District, Ahupua'a of Honouliuli, Island of O'ahu (TMK 9-1-10:7 and 9-1-69-5).* Pacific Legacy, Inc., Kailua, Hawai'i.

Maly, Kepā

- 1992 Historical Documentary Research. In Berdena Burgett and Paul H. Rosendahl *Archaeological Inventory Survey, Contaminated Soil Stockpile/Remediation Facility, Appendix E.* Paul H. Rosendahl, Ph. D., Inc., Hilo, Hawai'i.
- 1997 Historical Documentary Research. In *Archaeological Reconnaissance Survey, Naval Magazine Lualualei, NAVMAG-West Loch, Lands of Pu'uloa, Honouliuli, Waikele, and Waipi'o, District of 'Ewa, Island of O'ahu,* By Peter M. Jensen, and James Head, pp. 7-59 Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Nakuina, Emma M.

- 1904 *Hawai'i - Its People and Their Legends.* Hawai'i Promotion Committee, Honolulu.

Nakuina, Moses K.

- 1992 *The Wind Gourd of La'amaomao, The Hawaiian Story of Pāka'a and Kūapāka'a, Personal Attendants of Keawemua'umi, Ruling Chief of Hawai'i and Descendants of La'amaomao.* Collected, edited, and expanded by Moses K. Nakuina, translated by Esther T. Mookini and Sarah Nākoa. Kalamakū Press, Honolulu.

NRCS

- 2006 Natural Resources Conservation Service, Hawai'i Soils. Text from, *Soil Survey of the Islands of Kaua'i, O'ahu, Maui, Molokai and Lanai, State of Hawai'i,* by . Donald E. Foote, E.L. Hill, S. Nakamura and F. Stephens, 1972. U.S. Dept. of Agriculture, U.S. Government Printing Office, Washington, D.C. Online text and maps at <http://www.ctahr.hawaii.edu/soilsurvey/soils.htm>, downloaded July 19, 2006.

O'Hare, Connie, David Shilder and Hallett H. Hammatt

- 2006 *Archaeological Assessment report for the 'Ewa Industrial Park Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island (TMK: [1] 9-1-069:003)* Cultural Surveys Hawai'i, Waimānalo

Pagliari, Penny

- 1987 *Ewa Plantation: An Historical Survey 1890 to 1940.* Manuscript, Historic Preservation Program, University of Hawai'i at Mānoa, Honolulu.

Pantaleo, Jeffrey, and Aki Sinoto

- 1993 *Archaeological Inventory Survey For the Proposed Off-Site Drainage System 'Ewa Gentry, East Honouliuli, 'Ewa, O'ahu Island.* Aki Sinoto Consulting, Honolulu.

Paradise of the Pacific

- 1902 *Paradise of the Pacific,* March 1902:17.
- 1902 *Paradise of the Pacific,* Dec. 1902:19-22.

Pukui, Mary Kawena

1983 *‘Ōlelo No‘eau: Hawaiian Proverbs and Poetical Sayings*. Bernice P. Bishop Museum Special Publication No.71, Bishop Museum Press, Honolulu.

Pukui, Mary Kawena, and Samuel H. Elbert

1986 *Hawaiian Dictionary*. 2nd Edition, University of Hawai'i Press, Honolulu.

Pukui, Mary K., Samuel H. Elbert, and Esther Mookini

1974 *Place Names of Hawai*. University of Hawai'i Press, Honolulu.

Rosendahl, Paul H.

1987 *Archaeological Reconnaissance Survey for Environmental Impact Statement, West Loch Estates - Residential Increments I and II, Land of Honouliuli, ‘Ewa District, Island of O‘ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

R.M. Towill

1990 *Ewa Villages Master Plan, Ewa, Oahu, Hawaii*. R. M. Towill Corporation, Honolulu.

Saturday Press

1883 *Dictionary of Hawaiian Localities*. *Saturday Press*, Aug. 11, 1883.

Schmitt, Robert C.

1968 *Demographic Statistics of Hawai'i: 1778-1965*. University of Hawai'i Press, Honolulu.

1973 *The Missionary Censuses of Hawai'i*. Bernice P. Bishop Museum: Honolulu.

Silva, Carol

1987 *Historical Documentary Research – West Loch Estates Project Area*. In *Archaeological Reconnaissance Survey for Environmental Impact Statement, West Loch Estates Golf Course and Parks, Honouliuli, ‘Ewa, O‘ahu*, by Merrill A. Dicks, Alan E. Haun, and Paul H. Rosendahl, Appendix A. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Sinoto, Akihiko

1978 *Archaeological Reconnaissance Survey and Salvage of Burial at NAVMAG Lualualei, West Loch Branch, O‘ahu, Hawai'i*. Bernice P. Bishop Museum, Department of Anthropology, Honolulu.

Souza, Kehaulani, Constance R. O‘Hare, and Hallett H. Hammatt

2006 *Cultural Impact Assessment for the ‘Ewa Industrial Park Project, Honouliuli Ahupua‘a, ‘Ewa District, O‘ahu Island*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.

Spear, Robert L.

1996 *Archaeological Reconnaissance and Assessment of the H.F.D.C-East Kapolei Development Project*. Scientific Consulting Services, Honolulu.

Sterling, Elspeth P., and Catherine C. Summers (comp.)

1978 *Sites of O‘ahu*. Bernice P. Bishop Museum, Department of Anthropology, Honolulu.

Thrum, Thomas G.

- 1886 Great Land Colonization Scheme. *Hawaiian Almanac and Annual* for 1887:73-80. Thos. G. Thrum, Honolulu.
- 1906 Heiaus and Heiau Sites Throughout the Hawaiian Islands. *Hawaiian Almanac and Annual* for 1907. T. G. Thrum, Honolulu.
- 1917 List of Heiaus and Sites. *Hawaiian Almanac and Annual* for 1918. Pacific Commercial Advertiser, Honolulu.
- 1923 *More Hawaiian Folk Tales*. A.C. McClurg & Co., Chicago.

Treiber, Gale

- 2005 Oahu's Railways since WWII. *TRP, The Railroad Press*, Issue #66:10-29. (Issue available at Hawai'i Railway Museum, Ewa Station, O'ahu, Hawai'i.)

Tuggle, H. David, and Myra J. Tomonari-Tuggle

- 1997 *Synthesis of Cultural Resource Studies of the 'Ewa Plain, Task 1a: Archaeological Research Services for the Proposed Cleanup, Disposal and Reuse of Naval Air Station Barbers Point, O'ahu, Hawai'i*. International Archaeological Research Institute, Inc., Honolulu.

Vancouver, George

- 1798 *A Voyage of Discovery to the North Pacific Ocean...performed in the years 1790, 1791, 1792, 1793, 1794, and 1795, in the Discovery . . . and . . . Chatham . .* Vols. I-III. Amsterdam, N. Israel, London.

Westervelt, William D.

- 1963 *Legends of Old Honolulu*. Collected and Translated from the Hawaiian by W. D. Westervelt. Press of George H. Ellis Co., Boston.

Wilkes, Charles

- 1970 *Narrative of the U.S. Exploring Expedition, Volume IV*. Republished by The Gregg Press, Upper Saddle River, New Jersey.

Wolforth, Thomas R., and Warren Wulzen

- 1997 *Archaeological Data Recovery at West Loch Estates, Residential Increment I, and Golf Course and Shoreline Park, Land of Honouliuli, 'Ewa District, Island of O'ahu*. Paul H. Rosendahl, Ph.D., Inc, Hilo, Hawai'i.

Yoklavich, Anne K., Robert Drolet, and Patricia Drolet

- 1995 *Preliminary Report Cultural Resources Management Overview Survey Naval Air Station, Barbers Point, O'ahu Hawai'i*. Ogden Environmental and Energy Services Co., Inc., Honolulu.

APPENDIX VIII
JOB CREATION ASSESSMENT



Beyond Information. Intelligence.

Consulting

Database Marketing

*Economic & Social Impact
Studies*

Research

Training

**MARKET DEMAND
FOR THE PROPOSED EWA INDUSTRIAL PARK –
INDUSTRIAL CONDOMINIUM PROJECT, 2007**

Prepared for: KCOM Corp.

SMS

1042 Fort Street Mall
Suite 200
Honolulu, HI 96813
Ph: (808) 537-3356
Toll Free (877) 535-5767
Fax: (808) 537-2686
E-mail: info@smshawaii.com
Website: www.smshawaii.com

SMS Affiliations and Associations:

Alan Barker Associates
Experian
International Survey Research
Warren Dastrup – Kauai Affiliate
3i Marketing & Communications

**Prepared
SMS Research & Marketing Services,
June 2007**



Beyond Information. Intelligence.

Consulting

Database Marketing

*Economic & Social Impact
Studies*

Research

SMS

1042 Fort Street Mall
Suite 200
Honolulu, HI 96813
Ph: (808) 537-3356
Toll Free (877) 535-5767
Fax: (808) 537-2686
E-mail: info@smshawaii.com
Website: www.smshawaii.com

June 15, 2007

Mr. Valentine Peroff, Jr.
KCOM Corp.
99-880 Iwaena Street
Aiea, Hawaii 96701

Dear Val:

It is with pleasure that we submit this updated version of the Market Demand and Job Creation Assessment for the proposed Ewa Industrial Park – Industrial Condominium Project. As you will note in the report, we believe that there is a strong opportunity for a successful development of an Industrial area at your site.

This plan clearly states that the price being proposed for the Ewa Industrial Park will be in line with current prices for industrial space.

Please do not hesitate to call for any additional information as the need arises.

Best regards,

Faith Sereno Rex
President, SMS Consulting

SMS Affiliations and Associations:

Alan Barker Associates
Experian
International Survey Research
Warren Dastrup – Kauai Affiliate
3i Marketing & Communications

CONTENTS

CONCLUSIONS	1
BACKGROUND	2
OBJECTIVE	2
METHODOLOGY	2
THE INDUSTRIAL MARKET ON OAHU	3
INDUSTRIAL MARKET VACANCY RATES	4
TENANT ANALYSIS	6
EWA BUSINESS - INDUSTRIAL PARK	10
EMPLOYMENT	12
APPENDIX	15
APPENDIX A: ADDITIONAL MATERIALS	16
APPENDIX B: EWA INDUSTRIAL PARK ADDITIONAL MAPS	19

CONCLUSIONS

Project: KCOM Corp. is proposing developing an industrial condominium project in Honouliuli on the Ewa Plain on Oahu. KCOM has plans to develop TMK: 9-1-69:03, lot 4378, in two phases, 21.2 acres in the first phase to be completed in 2009, and the remaining 27.3 acres to be developed at a later time. Approximately 230,000sf of Phase 1 will be available in the third quarter of 2008 with an additional 200,000sf to be available in 2009.

This project offers future clients the option of purchasing relatively smaller units, or a combination of smaller units, that is ready for occupancy requiring only the addition of an electric meter and water connection. This build out saves clients the time and expense of requesting permits and completing the unit themselves.

Market: In 2006 Oahu had approximately 36 million square feet of industrial space. In 2006 approximately 451,000 square feet of industrial space was absorbed resulting in Oahu's 2.28 percent industrial vacancy rate only a slight increase over the 1.71 percent vacancy rate in 2004, but well below the US vacancy rate of 8.4 percent. The first quarter 2007 vacancy rate dropped below 2% to 1.92%.

Analysts suggest that a 6 to 8 percent vacancy rate is a level where supply and demand is in balance.

The market for industrial space is forecast to continue to be strong due to the continuing strong economy.

Impact: Including the proposed 230,000sf an estimated total of 435,000sf of new industrial space would be available to the market based on currently available information. This represents a total increase of only 1.2% of industrial space on Oahu. In 2006 over 570,000sf of space was added to the market and still the vacancy rate remained very low at 2.8%.

The developer anticipates pricing units at approximately \$350 per sq. ft. This price is expected to be the market price in 2008 given that 2007 prices for similar size units are already at \$330 per sq. ft. and prices are expected to go higher as rental rates increase and the vacancy rates continue to be exceptionally low.

Based on the high absorption rate for industrial space over the past few years and the exceptionally low vacancy rate for industrial space, there appears to be more than sufficient demand for the Ewa Industrial Park Project.

By providing space for new businesses, the proposed project will also be adding 1,430 to 1,650 new employment opportunities to the Ewa area. This is a conservative estimate based on new tenants being a mix between very small businesses, such as those occupying a similar project on Maui, and larger businesses similar to tenants at other industrial parks in the area.

Background

OBJECTIVE

The two objectives of this project are:

- To develop a market assessment that quantifies potential demand for the Ewa Industrial Park Condominiums.
- To provide a reliable estimate of the number and types of jobs that would be generated by the proposed development.

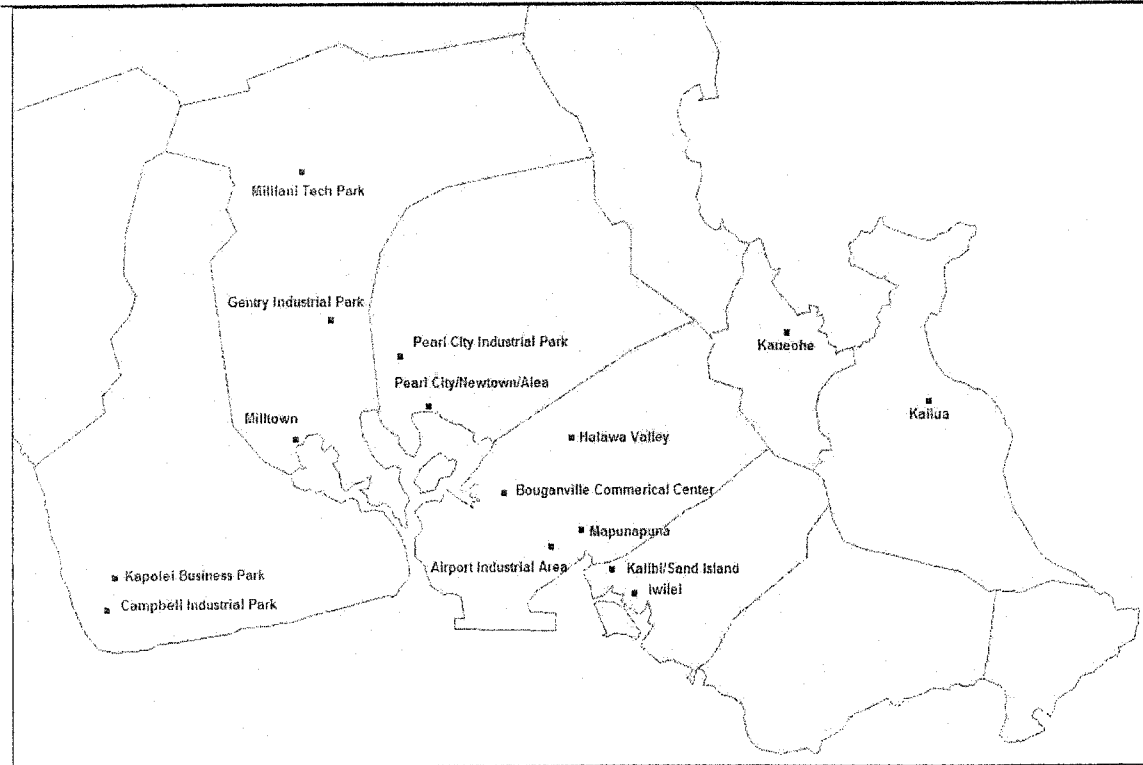
METHODOLOGY

SMS conducted secondary research and gathered information surrounding occupancy level, absorption trends, current rents/purchase prices, and new project coming online to accurately estimate market demand for industrial space on Oahu.

The Industrial Market on Oahu

Industrial parks distribution on the island of Oahu is concentrated on the leeward side of the island, as can be noted in the following map.

Figure 1: Industrial Map of Leeward, Oahu



The largest industrial park on Oahu is the Campbell Industrial Park with 1,367 acres. This park is located on the southwest tip of Oahu. It adjoins the 900-acre Kapolei Business Park. Gentry Business Park is spread over 122 acres in the center of the island.

Industrial Market Vacancy Rates

In third quarter 2006 Oahu had approximately 36 million square feet of industrial space. Recent indicators and articles suggest that the vacancy rate for industrial space on Oahu is and will continue to be at an exceptionally low level compared with the mainland. Even with the increased construction in 2006 the additional space was easily absorbed. This real estate demand can be directly attributed to continued growth in the state economy. This fact is also reflected in the low vacancy rate in industrial parks:

Table 1: Vacancy of Oahu Industrial Areas

Area	Vacancy
Kalihi/Sand Island	2.0%
Kapalama Military Reserve	0%
Iwilei	4.1%
Airport/Mapunapuna	0.32%
Bougainville/Halawa	4.25%
Pearl City	1.40%
Waipahu	3.55%
Gentry Business Park	0.22%
Campbell/Kapolei	4.55%
Kailua	0.0%
Kaneohe	1.10%
All	2.28%

Source: Colliers Monroe Friedlander, Commercial, Industrial, Investment, Consulting & Research Real Estate Services. January 2007.

Oahu's 2.28 percent industrial vacancy rate for 2006 is a slight increase over the 1.71 percent vacancy rate in 2004, but well below the US vacancy rate of 8.4 percent. Analysts suggest that a 6 to 8% vacancy rate is a level where supply and demand are in balance. Vacancy rate reports for the first quarter of 2007 show that the vacancy rate is now even lower falling below 2% to 1.92%.¹

According to reports by Colliers, in 2006 an estimated 571,000sf of new industrial space was constructed most of it in Kalihi/Sand Island and in Campbell/Kapolei areas. Over the course of the year the market absorbed 451,000sf (80%) keeping the overall vacancy rate at 2.28%.

Honolulu led the country in 2006 with rent for warehouse space averaging \$13.44 per square foot, and since the end of 2005, industrial space rent has increased \$0.11 per square foot. This brought the average asking base rent for industrial space on Oahu to \$1.10 per square foot.² The average rent during the first quarter of 2007 increased to \$13.68 per square foot.

¹ Colliers Monroe Friedlander, Industrial Market Briefing, Honolulu, First Quarter, 2007.

² Colliers International, North American Industrial Real Estate Highlights, 3rd Quarter, 2006

Table 2: Absorption and Asking Rent

Area	YTD Absorption	Weighted Avg. Net Asking Rent
Kalihi/Sand Island	182,585	\$1.16
Kapalama Military Reserve	0	\$0.00
Iwilei	(47,835)	\$1.15
Airport/Mapunapuna	25,370	\$1.01
Bougainville/Halawa	57,507	\$1.01
Pearl City	(17,602)	\$1.36
Waipahu	(60,287)	\$1.19
Gentry Business Park	2,214	\$1.67
Campbell/Kapolei	312,237	\$1.03
Kailua	0	\$1.18
Kaneohe	(2,148)	\$1.40
All	452,041	\$1.10

Source: Colliers Monroe Friedlander, Commercial, Industrial, Investment, Consulting & Research Real Estate Services. January 2007.

2007 Projects

Industrial projects announced for 2007 include Phase I of Kapolei Spectrum Business Park and the Kakaako Commerce Center. According to the Star Bulletin, given the low vacancy rate and the limited number of construction projects, due to rising costs for both land and construction, "there is definitely a tightening of the market, and it's going to continue to tighten...demand is going to remain strong."³

Kapolei Spectrum Business Park is a two-phase project within the Kapolei Business Park Phase 1 was completed in March 2007. This project is a 6-acre development, of ten buildings with over 100,501sf of space available for lease and purchase as industrial condominiums.

The project consists of industrial condominiums listed as being 1,295 – 10,495 sq. ft. As of June 2007, the property website showed asking prices ranging from \$280/sf to \$320/sf for smaller units. Developers are reporting that 60% of the units in Phase 1 have been sold.

Waipio Business Center broke ground in April 2007 for a 99-unit project on 10 acres within Waipio Business Park. These industrial condominium units range in size from 1,500 to 7,000 square feet. Prices range from about \$479,000 for a 1,443 square foot space to over \$2 million for a 7,253 square foot unit. Average price per square foot on available units based on this website in June 2007 ranged from \$300/sf to \$350/sf.

³ Star Bulletin, *Industrial Rents are Rising*, 12/22/06

The **Kakaako Commerce Center** has approximately 200,000sf of space in 200 units, currently being rented by approximately 80 businesses.⁴ The plan is to offer the space as industrial condominiums and prices have yet to be established for new buyers, however space will first be offered to current users at \$250sf⁵. The advantage of this development is its central location relative to major areas of commerce. The building is currently configured for five floors of warehouse space and one floor of office space. The purchase of the building by the developer was expected to close in May 2007.

Sales prices for these newer industrial condominium spaces are ranging over \$300 per square foot. Given the steady increase in rental rates, it is likely that there will be more demand for business owners to purchase their own space driving up these prices, given the low vacancy rates in the market.

Table 3: Example of Sales Prices for 2007 Industrial Condominium Units

Development	Size of Unit	Price/sf
Kapolei Business Spectrum	1476	\$318
Waipio Business Center	1443	\$332

As shown on Developer's website on 06/15/07.

Tenant Analysis

SMS staff conducted an analysis of tenant mix and of three primary industrial parks: Campbell Industrial Park, Gentry Industrial Park and Mililani Tech Park. These parks were selected to provide a broad perspective of the market.

SMS first conducted an audit of the business categories located at the three industrial parks. SMS utilized a variety of data sources to accumulate data. The sources included direct discussions with leasing agents, yellow pages, and Internet research. The final confirmation of tenants was undertaken by a physical visit to the sites.

⁴ Honolulu Advertiser, December 18, 2006.

⁵ Star Bulletin *Oahu Industrial Rents are Rising* 12/22/06

As noted, the distribution of businesses by area differs. Construction is a major tenant category, followed by such categories as wholesale trade, professional services and manufacturing.

Table 3: Number of Businesses by Location

Business Category	Campbell Industrial Park	Gentry Industrial Park	Mililani Tech Park	Total	%
Accommodation & foodservices	1	8	1	10	3%
Administrative & support & waste management & Remediation services	14	1		15	4%
Arts, entertainment, & recreation	5	4		9	2%
Construction	71	23	2	96	25%
Educational services	1	4		5	1%
Finance & insurance	1			1	0%
Health care & social assistance	3	3		6	2%
Information	3	8		11	3%
Management of companies & enterprises	1	1		2	1%
Manufacturing	28	4	3	35	9%
Mining	6			6	2%
Other services (except public administration)	11	16		27	7%
Professional, scientific, & technical services	38	10	1	49	12%
Real estate & rental & leasing	1			1	0%
Retail Trade	12	7	2	21	6%
Transportation & Warehousing	23	4		27	7%
Utilities	3	1		4	1%
Wholesale trade	27	9	4	40	11%
Unknown	2	11	1	14	4%
Total	251	114	14	379	100%

One possible downside to the steadily increasing demand for industrial space is the weakening in the real estate market that may impact the space needs for companies in the construction industry. However it is important to note that while these companies make up 25% of the tenants in these parks surveyed, it is anticipated that the remainder of the economy should continue to be strong. Plus, the military housing projects and anticipated new affordable housing projects being planned for the County may lessen the impact on the construction industry.

Although the construction industry is highly prominent within the three industrial parks studied, this is not the currently true for the Ewa Beach area specifically. The most common industry in the area is health care and social assistance, which was 24 percent of all small businesses in the area. Non-profit organizations traditionally grow in number when there is a downturn in the economy; likewise health organizations are expected to increase in number with the aging population. Therefore it is reasonable to expect that even though the construction industry is expected to remain steady, sufficient demand will be likely from other types of organizations in and outside of the area.

Table 4: Number of Industrial Park Businesses vs. Ewa Beach Small Businesses

Business Category	Campbell/ Gentry/ Milliani Total	%	Small Businesses 96706 Total	%
Accommodation & foodservices	10	3%	23	10%
Administrative & support & waste management & Remediation services	15	4%	19	8%
Arts, entertainment, & recreation	9	2%	4	2%
Construction	96	25%	24	11%
Educational services	5	1%	3	1%
Finance & insurance	1	0%	7	3%
Health care & social assistance	6	2%	54	24%
Information	11	3%	1	0%
Management of companies & enterprises	2	1%	0	0%
Manufacturing	35	9%	2	1%
Mining	6	2%		
Other services (except public administration)	27	7%	31	14%
Professional, scientific, & technical services	49	12%	13	6%
Real estate & rental & leasing	1	0%	9	4%
Retail Trade	21	6%	24	11%
Transportation & Warehousing	27	7%	5	2%
Utilities	4	1%	1	0%
Wholesale trade	40	11%	7	3%
Unknown	14	4%		
Total	379	100%	227	100%

New Establishments

During 2002 – 2003 there were a total of 2,453 “establishment births” in the state of Hawaii⁶. This positive trend in new business coupled with the limited industrial, retail, office and warehouse space results in greater demand for new space to come online. This increase is extremely positive for potential space available in the Kapolei / Ewa area, where both city and state officials are directing the majority of future growth.⁷

Tenant Mix at Similar Projects - Kihei Commercial Plaza

The Kihei Commercial Plaza on Maui is a project similar to the proposed Ewa Industrial Park and consists of industrial condominiums for retail, commercial, warehouse and industrial use. Based on the tenant list there appears to be significantly fewer construction companies and more small businesses.

Understanding what drove business owners to purchase similar space in Kihei is key in understanding the types of business owners that will be willing to purchase in the Ewa Industrial Park. Based on interviews with future tenants of Kihei Commercial Plaza, the most common selling point for the industrial condominiums was the attractive price relative to the size of the units and flexibility of the design. Many of the tenants in Kihei are smaller businesses looking for more space not too far from Kahului.

Currently on Oahu there is an island wide shortage, not only of industrial space, but also of retail, office and warehouse space. Affording tenants the option to have either the rollup door or unique glass storefront is an offering that will allow for a tenant mix beyond what is what offered in older industrial parks on Oahu.

⁶ US Census Bureau 'Business Dynamic Data' http://www.census.gov/csd/susb/stsect02_03.xls

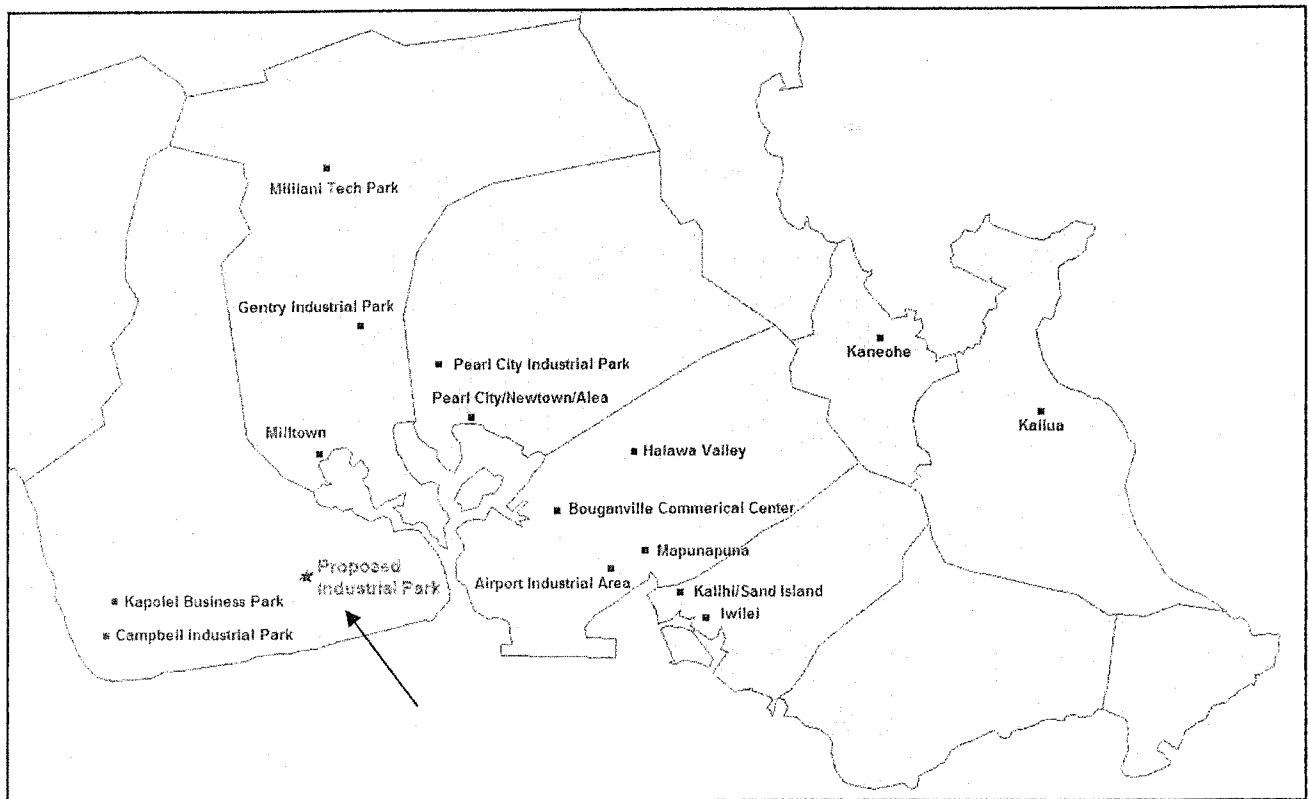
⁷ LoopNet Location Description

<http://www.loopnet.com/xNet/MainSite/Listing/Profile/Profile.aspx?LID=14746120>

Ewa Business - Industrial Park

Ewa Industrial Park will be a two-phase project. Phase 1 has an estimated completion time of third quarter of 2008. Phase two will be developed at a later time. The property is located on Geiger Road at TMK 9-1-69:03, and phase 1 will be built along the Coral Creek Golf Course side of the property. It is currently zoned AG-1 restricted. The location of the park is indicated in red in the map below.

Figure 2: Site Map



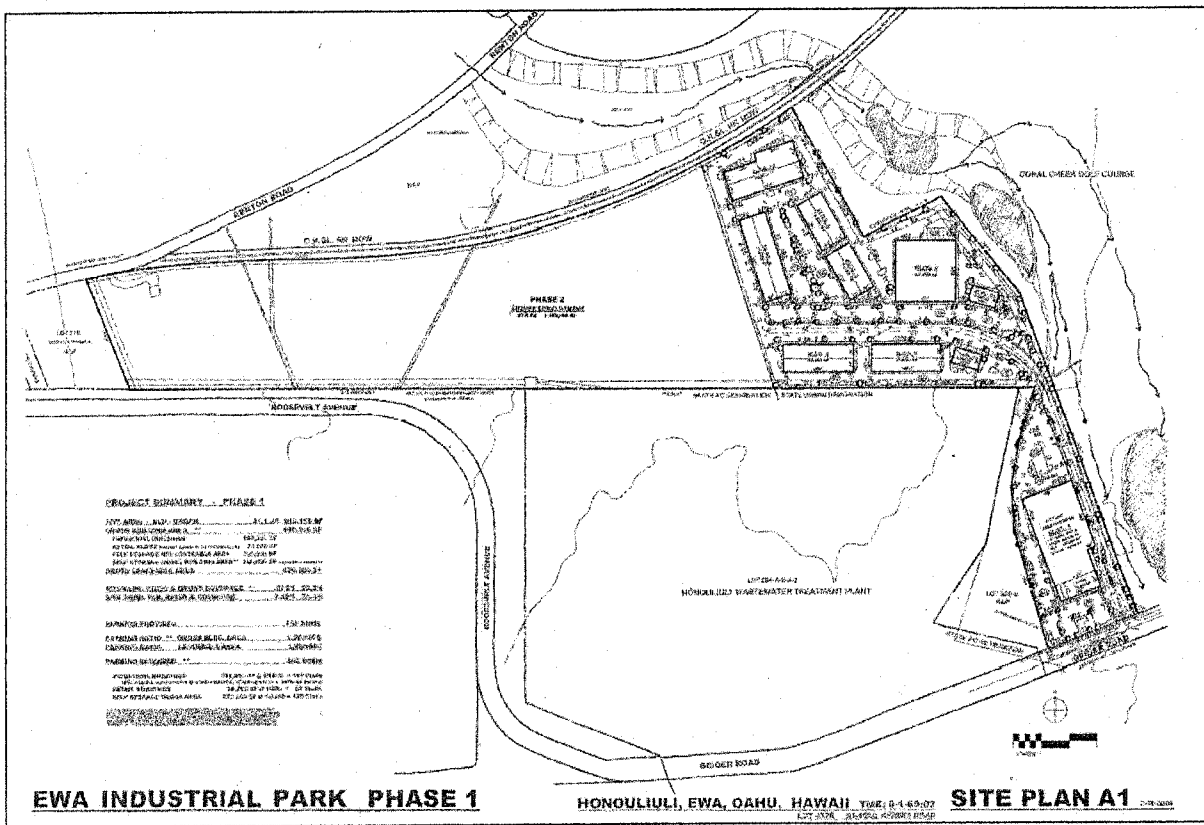
Currently the plans for Phase 1 are to develop approximately 230,000sf of industrial space; an additional 200,000sf is planned to be available in 2009. The plan is to create industrial condominiums that are fully built out and ready for owners to move in. Five buildings are expected to create approximately 130 to 150 units ranging in size from 60'x25' to 70'x25'. The option to purchase and combine multiple units will be available to buyers who require more space.

The expected asking price of the industrial condominium space is approximately \$350 per square foot. This price is well within the forecasted market given that prices in 2007 are in the \$330 range and that the absorption rate for industrial space continues to be very high, resulting in very low vacancy rates.

A similar industrial condominium project was completed in 2006 in Kihei on Maui. The project is sold out primarily to smaller businesses.

A more detailed site plan can be seen below, as well as in the appendix.

Figure 3: Site Plan A1



Impact of the Proposed Project on the Market

Should the 230,000sf be available in 2008, this would bring an estimated total of 435,000sf of new industrial space made available to the market based on currently available information. This represents a total increase of only 1.2% of industrial space on Oahu. In 2006 over 570,000sf of space was added to the market and still the vacancy rate remained very low at 2.8%.

The project anticipates pricing units at approximately \$350 per sq. ft. This price is near the \$330 level being offered in 2007 and the low vacancy rate will likely drive prices higher by 2008.

Based on the high absorption rate for industrial space over the past few years and the exceptionally low vacancy rate for industrial space, there appears to be more than sufficient demand for the Ewa Industrial Park Project.

Employment

SMS professionals spoke with owners of businesses located in Campbell Industrial Park, Gentry Industrial Park and Mililani Tech Park to understand the number of employees typically found within industrial park businesses. The data is summarized in the following table:

Table 5: Employment by Business Category

Business Name	Business Category	# of Employees	Is current employee count high/avg./low
Wholesale Unlimited	Wholesale, Retail trade	50	Average
Island Screens Inc.	Construction	13	Average
Hawaii Cash Register	Technical Services	10	Average
Kuroda Auto body	Mechanics	20	Average
A group Industrial	Machine mechanics	3	Low
Appliance Parts Co. Inc.	Wholesale, Retail trade	20	Low
Food Pantry Warehouse	Retail Trade	10	High
Ameron	Construction	38	Low
Cenveo	Manufacturer	11	Average
National Oak	Automotive refinishing Warehouse	6	Average
Bridgestone Tires	Warehouse Distributor	5	High
Innovative Housing Solutions	Steel Frame Manufacturer	25	High
Pacific Agriculture	Wholesale retail	20	Average
Ferguson	Construction	9	Average
Isituform	Construction	5	High
Detroit Diesel	Truck dealer	10	Average
Pacific Power	Truck parts	10	Average
Pacific Golf and Turf	Lawnmower cars	10	Average
American Machinery	Heavy equipment, sale, rent, repair	50	Average
Testron Hawaii	Manufacturer	6	Average
Bonded	Produce Concrete	25	Average
Paper Source Hawaii	Wholesale Distributor	30	Average
Ariel Truss	Manufacturer	30	Average
Dietrich	Manufacturer	22	Average
Oahu Gas Service	Retail Propane	18	Average
Honsador Holding LLC.	Parent company	10	Average
Hawaii Lumber Treatment	Treat lumber	60	Average

Based solely on the businesses observed within the three industrial parks studied, there were an average of 18 employees per business.

Looking at the growth in the number of businesses with fewer than 100 employees (those more likely to have space in an industrial park as noted above), between 2002 and 2003 there was an increase of 2,453 new businesses in the state of Hawaii. Most of the growth is in businesses with only 1 – 4 employees (1,807). For that year alone there was an increase of 646 new businesses with five or more employees.

Table 5: 2002 - 2003 U.S. Census Establishment Births

2002 - 2003 Establishment Births					
	Total establishments	1-4 employees	5-9 employees	10-19 employees	20-99 employees
Agriculture, forestry, fishing, & hunting	8	7	1	0	0
Mining	n/a	n/a	n/a	n/a	n/a
Utilities	1	1	0	0	0
Construction	289	211	53	17	8
Manufacturing	60	44	11	2	3
Wholesale trade	137	114	15	7	1
Retail Trade	340	236	60	26	18
Transportation & Warehousing	71	56	6	5	4
Information	58	39	9	5	5
Finance & insurance	67	57	2	3	5
Real estate & rental & leasing	161	143	10	4	4
Professional, scientific, & technical services	279	232	30	13	4
Management of companies & enterprises	5	3	0	0	2
Administrative & support & waste management & remediation serv	148	100	24	11	13
Educational services	59	46	10	3	0
Health care & social assistance	183	136	26	10	11
Arts, entertainment, & recreation	52	28	13	5	6
Accommodation & foodservices	254	114	47	43	50
Other services (except public administration)	233	198	20	13	2
Auxiliaries, exc corp, subsidiary, & regional managing offices	0	0	0	0	0
Unclassified	48	42	6	0	0
Total	2,453	1,807	343	167	136

Source: U.S. Census Bureau *Establishment and Employment Changes from Births, Deaths, Expansions and Contractions by Employment Size of the Enterprise for States, Sectors: 2002 - 2003*
http://www.census.gov/csd/susb/stsect02_03.xls

Anticipated Employment Growth with this Project

If the proposed industrial development attracts tenants similar to other industrial parks in the area, SMS estimates between 2,340 and 2,700 new jobs will be added in Ewa. If the development attracts only smaller businesses, then 520 to 600 new jobs will be added to the area. More likely the projected project is likely to attract a mix, therefore an average between 1,430 and 1,650 new jobs are likely to be available to the workforce in the Ewa area.

	4 Employees	18 Employees	Average
130 units	520	2340	1430
150 units	600	2700	1650

APPENDIX

APPENDIX A: ADDITIONAL MATERIALS

INDUSTRIAL REAL ESTATE TO REMAIN TIGHT IN 2007

Honolulu Advertiser, 2006-12-23
by Advertiser Staff
Honolulu, Hawaii/USA

Hawaii's industrial real estate market will remain tight next year due to continued growth in the state economy, according to a new study.

In its year-end 2006 report, local commercial real estate firm Colliers Monroe Friedlander predicted that vacancy rates for industrial properties on O'ahu will remain in the 2.25 percent to 2.75 percent range in 2007 after hitting 2.28 percent this month.

Industrial properties include factories and warehouses. It does not include retail space.

Industrial property rent, which has increased nearly 50 percent since 2002, also will rise next year, the report said. During the past year, average rents on industrial properties have increased 11.5 percent to \$1.10 per square foot per month.

Industrial properties are often considered a key measure of the local economy. A tight market can mean that the local industrial sector is growing.

In its report, Colliers noted that the existing 2.28 percent vacancy rate for O'ahu has risen from the 10-year low of 1.71 percent in 2004.

But that vacancy rate is still well below the 6 percent to 8 percent optimum level in which supply and demand are in balance, Colliers said.

Source: Article URL: <http://www.colliers.com/Markets/Honolulu/News/Industrial%20real%20estate%20to%20remain>

Honolulu has Nation's Biggest Shortage of Industrial Space

January 26, 2006

By Allison Schaefer

aschaefer@starbulletin.com

The state's continued robust economy made Honolulu's year-end industrial real estate market the tightest in the nation, according to a report released yesterday by commercial real estate firm Colliers Monroe Friedlander.

That's no small distinction, considering that the U.S. industrial market just posted its greatest absorption since the dot-com days, and the next-tightest market -- Los Angeles -- is separated from Honolulu by almost a full percentage point. According to the report, other places to watch include Milwaukee, Houston, Chicago, Philadelphia, Dallas/Fort Worth, Atlanta and Detroit.

Despite more industrial condominium development, Honolulu's tight market conditions mean higher rents are on the horizon for Honolulu's industrial space users -- who have been forced in some cases to such extremes as renting public storage space and bunker space.

More than 600,000 square feet of new industrial condominium space in West Oahu is scheduled to become available next year, but it won't be enough to satisfy demand from the expanding labor market, said Mike Hamasu, director of research and consulting at Colliers.

"Even with new development, we're still expecting the vacancy rates to stay below 2 percent throughout next year," Hamasu said.

Right now, Honolulu's 1.8 percent vacancy rate is creating difficulties for industrial tenants who want to lease warehouse or industrial space, said Scott Mitchell, executive vice president at Colliers.

The strength of Hawaii's real estate market as well as demand for industrial space is likely to drive rents 8 percent to 12 percent higher in 2006.

"Market conditions are such that many tenants will soon have to pay higher rents or move to Kapolei," Hamasu said.

For some businesses, the appeal of purchasing industrial condominium space to stabilize costs will be attractive, Hamasu said. However, others could prefer paying higher rents to moving farther from town, he said.

"Either way they are paying premiums," he said.

While Honolulu -- with market conditions exacerbated by an island economy -- might lead the nation in demand for industrial market space, the entire nation experienced a benchmark year, according to a report by Colliers International.

The fourth-quarter U.S. vacancy rate dropped to 8.4 percent from the year-ago 9.5 percent, Colliers reported. For the full year, a total of 214.7 million square feet was newly occupied.

Despite slower economic growth during the fourth quarter, industrial production, imports, exports and manufacturing all registered solid increases -- bolstering demand for warehouse space, said Ross Moore, a senior vice president for Colliers International.

Source: Article URL: <http://starbulletin.com/2006/01/26/business/story01.html>

Honolulu industrial space still tight

Pacific Business News, 2006-11-20
by Staff
Honolulu, Hawaii/USA

Honolulu's industrial warehouse space market is the tightest in the nation, according to a new national report.

Honolulu's third quarter vacancy rate of 2.16 percent for industrial space was the lowest in the nation, according to the report by Colliers International. Los Angeles and West Palm Beach, Fla., rounded out the top three.

The rate was slightly higher than Honolulu's second quarter vacancy rate, which was also lowest in the nation at 1.83 percent.

Mike Hamasu, director of consulting and research at Colliers Monroe Friedlander in Honolulu, said the increase can be attributed to newly built space becoming available.

Hamasu said Honolulu's industrial market has been the tightest for more than two years.

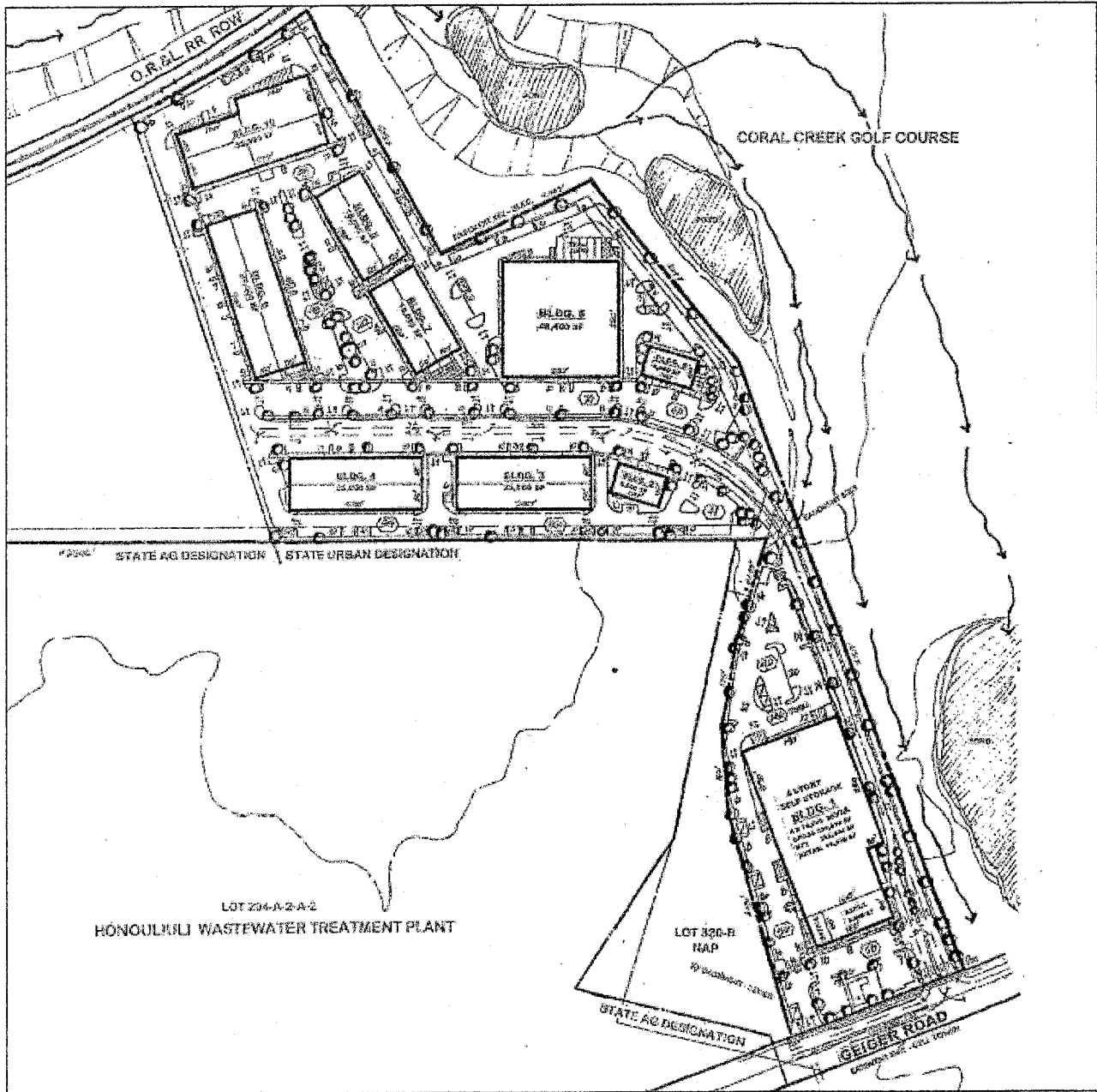
As the vacancy rate remains low, landlords have been able to increase rents.

Net rent for industrial space for the third quarter was \$1.12 per square-foot, Hamasu said.

That's up from \$1.07 per square foot at the end of the second quarter and 99 cents per square foot at the end of 2005, he said.

Source: Article URL: <http://www.colliers.com/Markets/Honolulu/News/Honolulu%20industrial%20space%20still>

APPENDIX B: EWA INDUSTRIAL PARK ADDITIONAL MAPS



APPENDIX IX
DRAINAGE REPORT



Gray • Hong • Nojima & Associates, Inc.
CONSULTING ENGINEERS

Daniel S.C. Hong P E
Michael H. Nojima P E
Sheryl E. Nojima, Ph.D. P E
Paul T. Matsuda P E
Milly D. Loo, P E
Rusty B. Bungcayao

841 Bishop Street, Suite 1100
Honolulu, Hawaii 96813-3915
Telephone: (808) 521-0306
Fax: (808) 531-8018
email@grayhongnojima.com

January 5, 2007

Mr. Howard S. Kihune
President / Principal
LANDTEC, INC.
2530 Kekaa Drive, Suite C-1
Kaanapali, Hawaii 96761

SUBJECT: Ewa Industrial Park
TMK 9-1-69: 03

Dear Mr. Kihune:

Pursuant to your conversation with Mr. Val Peroff, this letter is to clarify the existing and proposed drainage system for the Ewa Industrial Park.

1. The project site is approximately 48.4 acres adjacent to the Coral Creek Golf Course. The site is bordered by the Honouliuli Sewage Treatment Plant on the west and the existing railroad tracks on the north. The southern end of the site is adjacent to Geiger Road.
2. The project site is part of the Kaloi Gulch Watershed and under existing conditions sheetflows into the Coral Creek Golf Course. The total Kaloi Gulch Watershed is approximately 11 square miles in area with a flow of approximately 11,500 cfs as the ultimate flow at the bottom of the Kaloi Gulch Watershed.
3. Based upon preliminary hydrologic calculations, the Ewa Industrial Park will have a peak 50-year flow of approximately 264 cfs and water quality volume of approximately 4.1 acre-feet.
4. Pursuant to review of drainage reports and consultation with the engineering consultants for the original Coral Creek Golf Course, the golf course was designed to handle the Kaloi Gulch peak flows as well as provide storage and water quality volumes in the various lakes.

Mr. Howard S. Kihune
January 5, 2007
Page 2

It is therefore proposed to maintain the existing drainage pattern to the two deep lakes within the Coral Creek Golf Course adjacent to the Ewa Industrial Park Site (see attached Exhibit). However, in lieu of direct point discharges to the golf course and to minimize overland sheetflow, it is proposed that the storm runoff from the Ewa Industrial Park Site connect directly to the two lakes by an underground drainage pipe system. The underground system could be either direct bury or possible micro-tunneling. The exact alignment and method of construction would have to be worked out with your office and consultants.

Please call this office if there are any questions.

Very truly yours

GRAY, HONG, NOJIMA & ASSOCIATES, INC.



Daniel S. C. Hong

DH:mt
Enclosure
c: Val Peroff

2959



91-1111 Geiger Road

Ewa Beach, Hawaii 96706

Tel (808) 441-4653

Fax (808) 440-1112

April 16, 2007

Ewa Industrial Park, LLC
99-880 Iwaena Street
Aiea, HI 96701

Attention: Mr. Kevin Lefforge

Re: Proposed Drainage Development

In response to your e-mail dated March 29, 2007, this is to confirm that Coral Creek Golf, Inc. will not oppose to the proposed drainage draining into our property.

However, we hope to have our concerns resolved before construction gets under way. As per our telephone conversation, we would appreciate the least inconvenience to our golf course operations.

Please keep me updated if there should be any changes or concerns.

Sincerely,

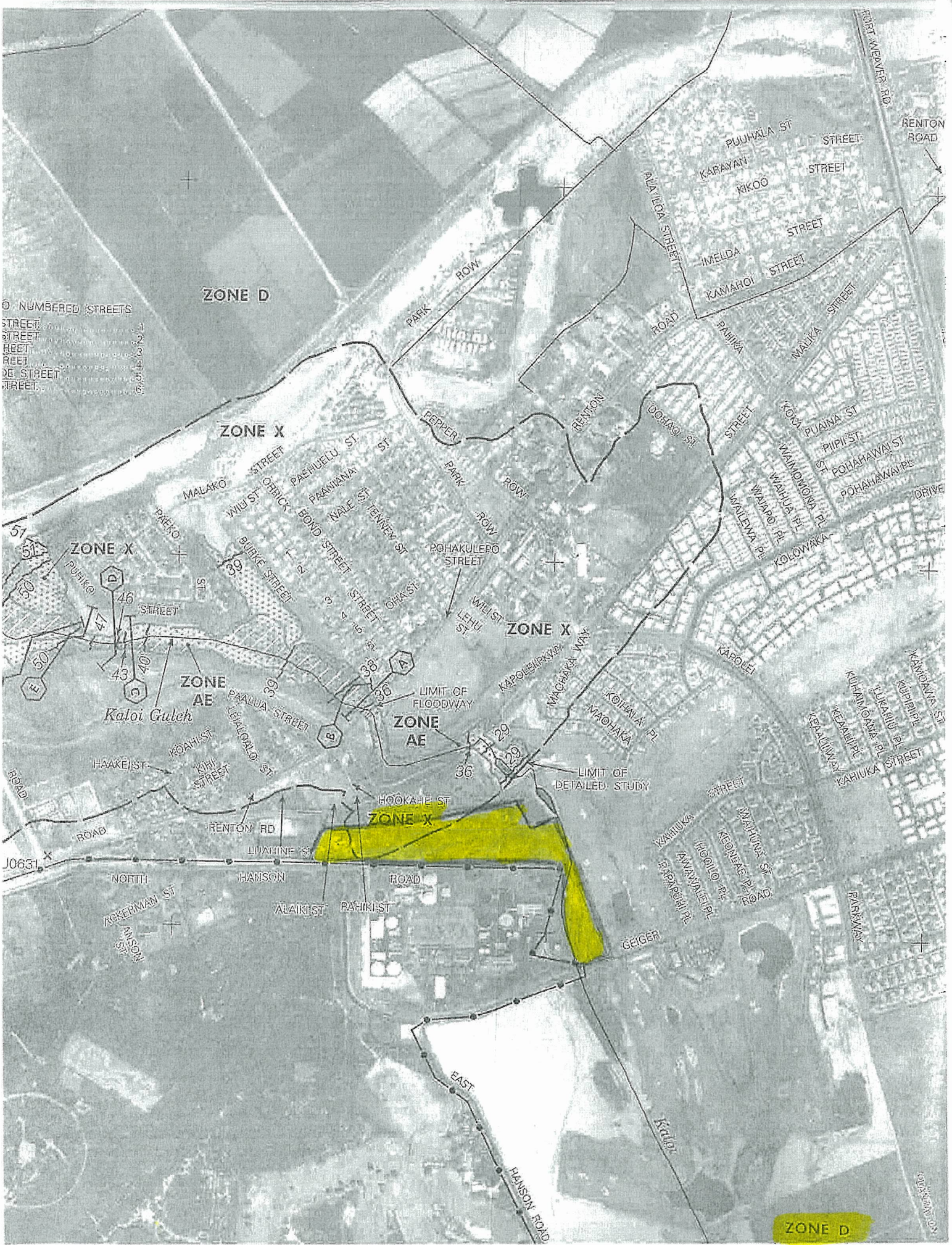
Kyun Kim
Superintendent/Consultant

RECEIVED
4/19/07

APPENDIX X

FLOOD INSURANCE RATING MAP

NUMBERED STREETS
STREET
STREET
STREET
STREET
STREET



ZONE D

158° 42' 45"
 21° 26' 15"
 2371000 M

2370000 M

2369000 M

LEGEND



SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

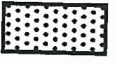
The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



OTHER FLOOD AREAS

- ZONE X** 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.



OTHER AREAS

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.



COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS



OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.

- 1% annual chance floodplain boundary
- 0.2% annual chance floodplain boundary
- Floodway boundary
- Zone D boundary
- CBRS and OPA boundary
- Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.
- Base Flood Elevation line and value; elevation in feet*
- Base Flood Elevation value where uniform within zone; elevation in feet*

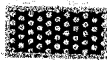
158° 42' 45"
21° 26' 15"

2371000 M

2370000 M

2369000 M

LEGEND



SPECIAL FLOOD HAZARD AREAS SUBJECT TO INUNDATION BY THE 1% ANNUAL CHANCE FLOOD

The 1% annual chance flood (100-year flood), also known as the base flood, is the flood that has a 1% chance of being equaled or exceeded in any given year. The Special Flood Hazard Area is the area subject to flooding by the 1% annual chance flood. Areas of Special Flood Hazard include Zones A, AE, AH, AO, AR, A99, V, and VE. The Base Flood Elevation is the water-surface elevation of the 1% annual chance flood.

- ZONE A** No Base Flood Elevations determined.
- ZONE AE** Base Flood Elevations determined.
- ZONE AH** Flood depths of 1 to 3 feet (usually areas of ponding); Base Flood Elevations determined.
- ZONE AO** Flood depths of 1 to 3 feet (usually sheet flow on sloping terrain); average depths determined. For areas of alluvial fan flooding, velocities also determined.
- ZONE AR** Special Flood Hazard Area formerly protected from the 1% annual chance flood by a flood control system that was subsequently decertified. Zone AR indicates that the former flood control system is being restored to provide protection from the 1% annual chance or greater flood.
- ZONE A99** Area to be protected from 1% annual chance flood by a Federal flood protection system under construction; no Base Flood Elevations determined.
- ZONE V** Coastal flood zone with velocity hazard (wave action); no Base Flood Elevations determined.
- ZONE VE** Coastal flood zone with velocity hazard (wave action); Base Flood Elevations determined.



FLOODWAY AREAS IN ZONE AE

The floodway is the channel of a stream plus any adjacent floodplain areas that must be kept free of encroachment so that the 1% annual chance flood can be carried without substantial increases in flood heights.



OTHER FLOOD AREAS

- ZONE X** 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.

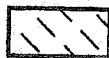


OTHER AREAS

- ZONE X** Areas determined to be outside the 0.2% annual chance floodplain.
- ZONE D** Areas in which flood hazards are undetermined, but possible.



COASTAL BARRIER RESOURCES SYSTEM (CBRS) AREAS



OTHERWISE PROTECTED AREAS (OPAs)

CBRS areas and OPAs are normally located within or adjacent to Special Flood Hazard Areas.



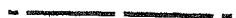
1% annual chance floodplain boundary



0.2% annual chance floodplain boundary



Floodway boundary



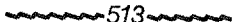
Zone D boundary



CBRS and OPA boundary



Boundary dividing Special Flood Hazard Area Zones and boundary dividing Special Flood Hazard Areas of different Base Flood Elevations, flood depths or flood velocities.



Base Flood Elevation line and value; elevation in feet*

(EL 987)

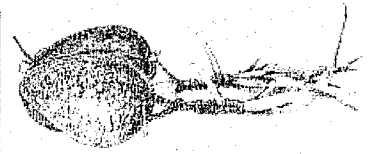
Base Flood Elevation value where uniform within zone; elevation in feet*

APPENDIX XI

**ARCHAEOLOGICAL ASSESSMENT OF THE
EWA INDUSTRIAL PARK**

Cultural Surveys Hawai'i Inc.

Archaeological and Cultural Impact Studies
Hallett H. Hammatt, Ph.D., President



Providing Excellence in Cultural Resource Management

January 22, 2007

Mr. Valentine Peroff, Jr.
99-880 Iwaena St.
Aiea, HI 96701

O'ahu	P.O. Box 1114 Kailua, HI 96734 Ph.: (808) 262-9972 Fax.: (808) 262-4950
Maui	16 S. Market St., #2N Wailuku, HI 96793 Ph.: (808) 242-9882 Fax.: (808) 244-1994
Hawai'i	15-3011 Mako Way Pahoa, HI 96778 Ph.: (866) 965-6478 Fax.: (808) 965-6582
Kaua'i	P.O. Box 498 Lawai, HI 96765 Ph.: (808) 245-4883

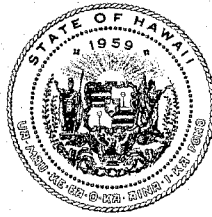
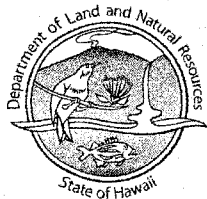
Subject: Request for review of *Archaeological Assessment of the 'Ewa Industrial Park Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island, TMK [1] 9-1-069:033*, by Constance R. O'Hare, David W. Shideler, and Hallett H. Hammatt.

Dear Mr. Peroff,

On December 8, 2006, we received a review of the above report from the SHPD. They asked for revisions on four points (see enclosed review): (1) a clarification on the need for subsurface testing in the Introduction section; (2) the distance between parallel sweeps in the Methods section; (3) the addition of "View toward" in the captions for two photos (Figures 5 and 6) in the Methods section; and, (4) a discussion of sinkholes. I have addressed these four points in my revised draft report (mailed to you) for your review. The majority of the report remains the same as the first. If you want to read only the changed portions, you need only read the Introduction Section, Methods Section, and Subsection 4.3.6 (4.3.6 Archaeological/Paleontological Sinkholes in the Ewa Karst) of the Previous Archaeological Research Section. Please review these changes, and if they meet with your approval, contact me. I will then send the revised draft back to the SHPD for final approval.

Sincerely,

Hallett H. Hammatt, President
cc. Connie O'Hare
CSH Job Code: HONOU 4



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

December 8, 2006

Dr. Hallett H. Hammatt
Cultural Surveys of Hawai'i, Inc.
P.O. Box 1114
Kailua, Hawai'i 96734

LOG NO: 2006.3755
DOC NO: 0611amj12
Archaeology

Dear Dr. Hammatt:

**SUBJECT: Chapter 6E-42 Historic Preservation Review –
Archaeological Assessment of the 'Ewa Industrial Park Project
Hono'uli'uli Ahupua'a, 'Ewa District, Island of O'ahu
TMK: (1) 9-1-069:003**

Thank you for the opportunity to review the aforementioned document by O'Hare *et al.* (2006), which we received on September 27, 2006. The report documents an archaeological inventory survey of 48.18 acres of privately-owned land planned for development as an industrial park. Because no historic properties were identified, the results of this investigation have been presented as an archaeological assessment.

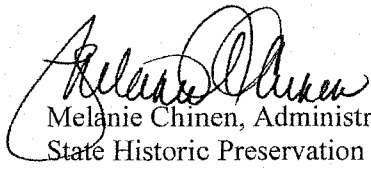
Before we can accept the report in fulfillment of HAR 13-284 and 13-276, please address the following comments:

- (1) In the Scope of Work (Section 1.2, p.1), you state, "CSH consulted with the...SHPD...to determine if they required subsurface testing as part of the inventory survey." We understand, from your Methods section, that no excavation was required. Please indicate with whom and on what date SHPD consultation regarding subsurface testing took place.
- (2) In Methods (Section 2.1, p.6), you describe "parallel pedestrian sweeps," but do not indicate the distance between field personnel. Please include this important piece of information.
- (3) Please update the captions to Figures 5 and 6 to include compass-direction of the viewer.
- (4) We did not find any mention of sinkholes in this report, although the general area is well known for such features. Please include a discussion of sinkholes, indicating if any were observed, or expected, within the project area; and, if not, why not? Is it possible that sinkholes exist just below the present ground surface? Please expand on this.

We look forward to receiving a revised report.

Please contact Mr. Adam Johnson (O'ahu Assistant Archaeologist) at (808) 692-8015 if you have any questions or concerns regarding this letter.

Aloha,



Melanie Chinen, Administrator
State Historic Preservation Division

amj:gvf

**Archaeological Assessment of the
'Ewa Industrial Park Project,
Honouliuli Ahupua'a, 'Ewa District, O'ahu Island
TMK: (1) 9-1-069:003**

**Prepared for
Mr. Valentine Peroff, Jr.**

**Prepared by
Constance R. O'Hare, B.A.,
David W. Shideler, M.A.,
and
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai'i, Inc.
Kailua, Hawai'i
(Job Code: HONOU 4)**

January 2007

O'ahu Office
P.O. Box 1114
Kailua, Hawai'i 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

www.culturalsurveys.com

Maui Office
16 S. Market Street, Suite 2N
Wailuku, Hawai'i 96793
Ph: (808) 242-9882
Fax: (808) 244-1994

**Archaeological Assessment of the
'Ewa Industrial Park Project,
Honouliuli Ahupua'a, 'Ewa District, O'ahu Island
TMK: (1) 9-1-069:003**

**Prepared for
Mr. Valentine Peroff, Jr.**

**Prepared by
Constance R. O'Hare, B.A.,
David W. Shideler, M.A.,
and
Hallett H. Hammatt, Ph.D.**

**Cultural Surveys Hawai'i, Inc.
Kailua, Hawai'i
(Job Code: HONOU 4)**

January 2007

O'ahu Office
P.O. Box 1114
Kailua, Hawai'i 96734
Ph.: (808) 262-9972
Fax: (808) 262-4950

www.culturalsurveys.com

Maui Office
16 S. Market Street, Suite 2N
Wailuku, Hawai'i 96793
Ph: (808) 242-9882
Fax: (808) 244-1994

Management Summary

Reference	Archaeological Assessment of the 'Ewa Industrial Park Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island, by Constance R. O'Hare, David W. Shideler, and Hallett H. Hammatt
Date	January 2007
Project Number (s)	Cultural Surveys Hawai'i, Inc. (CSH) Job Code: HONOU 4
Investigation Permit Number	CSH completed the inventory survey fieldwork under state archaeological permit No. 0605 issued by the State Historic Preservation Division, per Hawai'i Administrative Rules (HAR) Chapter 13-13-282.
Project Location	The project area is a 48.18-acre fenced lot, bound on the north by the existing right-of-way along the track of the Oahu Railway and Land Co., which runs parallel to the <i>makai</i> (inland) side of Renton Road near the 'Ewa Villages. The parcel is bound on all other sides by existing properties; a southern dog-leg section extends south to Geiger Road. The project area is the entire TMK parcel 9-1-069:033.
Land Jurisdiction	Private, Mr. Valentine Peroff
Agencies	State Historic Preservation Division / Department of Land and Natural Resources (SHPD/DLNR)
Project Description	The landowner plans to develop the project area into an industrial park.
Project Acreage	48.18 acres
Area of Potential Effect (APE) and Survey Acreage	For the purposes of this study the area of potential effect (APE) and the project area are considered one and the same.
Historic Preservation Regulatory Context	At the request of Mr. Valentine Peroff, CSH undertook this archaeological study to fulfill the state requirements for archaeological inventory surveys [Hawai'i Administrative Rules (HAR) Chapter 13-276]. This document was prepared to support the proposed project's historic preservation review under HRS Chapter 6E-42 and HAR Chapter 13-284, as well as the project's environmental review under HRS Chapter 343. Because no significant sites were encountered, this study is regarded by the SHPD as an "Archaeological Assessment".
Fieldwork Effort	Constance R. O'Hare, B.A., Jennifer Olson, B.A., and Kehaulani Souza, B.A., under the general direction of Hallett H. Hammatt, Ph.D., conducted a surface survey of the project area on August 4, 2006.
Number of Historic Properties Identified	No sites were identified.
Historic Properties Recommended Eligible to the Hawai'i Register of Historic Places (Hawai'i Register)	None
Historic Properties Recommended Ineligible to the Hawai'i Register	None
Effect Recommendation	Based on the current investigation, there are no historic properties recommended Hawai'i Register-eligible within the project's APE. Accordingly, based on the available information, it is recommended that the proposed project will have no effect on significant (i.e. Hawai'i Register-eligible) historic properties. A project specific effect determination of "no historic properties affected" is warranted for the project.

<p>Mitigation Recommendation</p>	<p>No further cultural resource management work is recommended for the project.</p> <p>In the unlikely event that previously unidentified subsurface historic properties are encountered by project construction, the project proponents should immediately stop work in the vicinity and contact SHPD's O'ahu Office [Tel. (808) 692-8015].</p>
--------------------------------------	--

Table of Contents

Management Summary	i
Section 1 Introduction	1
1.1 PROJECT BACKGROUND	1
1.2 SCOPE OF WORK	1
1.3 ENVIRONMENTAL SETTING	4
1.3.1 Natural Environment	4
1.3.2 Built Environment	5
Section 2 Methods	6
2.1 FIELD METHODS	6
2.2 LABORATORY METHODS	6
2.3 DOCUMENT REVIEW	6
2.4 CONSULTATION	6
Section 3 Background Research	9
3.1 MYTHOLOGICAL AND TRADITIONAL ACCOUNTS	9
3.1.1 The Naming of 'Ewa and Honouliuli	9
3.1.2 Pu'uokapolei and the Plains of Kaupē'a	11
3.2 HISTORIC BACKGROUND	16
3.2.1 Pre-Contact and Early Post-Contact Periods	16
3.2.2 Observations of Early Explorers and Foreign Residents	20
3.3 MID-NINETEENTH CENTURY AND THE MĀHELE	21
3.3.1 Early Ranching in on the 'Ewa Plain	22
3.3.2 Other Enterprises in Campbell Lands	24
3.4 MID-NINETEENTH CENTURY TO PRESENT	25
3.4.1 History of the Oahu Railway and Land Company (OR&L)	25
3.5 HISTORY OF THE EWA PLANTATION COMPANY	27
3.5.1 Sugar Cane Cultivation	27
3.5.2 Workers Housing and the 'Ewa Villages	29
Section 4 Previous Archaeological Research	31
4.1 EARLY ARCHAEOLOGICAL SURVEYS	31
4.2 PREVIOUS ARCHAEOLOGICAL WORK NEAR HONOULIULI TOWN	32
4.2.1 West Loch Estates	32
4.2.2 NAVMAG – West Loch	35
4.2.3 'Ewa Villages	36
4.2.4 'Ewa Gentry Project	36
4.3 BACKGROUND SUMMARY AND PREDICTIVE MODEL	37
4.3.1 Honouliuli Settlement Patterns	37
4.3.2 The Coastal Zone - Kalaeloa (Barbers Point), Ko'ōlina (West Beach)	38
4.3.3 Honouliuli Taro Lands	39
4.3.4 Pu'uku'ua: Inland Settlement	40
4.3.5 Summary of Pre-Contact Use	40
4.3.6 Archaeological/Paleontological Sinkholes in the Ewa Karst	41
4.3.7 Summary of Pre-Contact Use in the Project Area	43

4.3.8 Summary of Post-Contact Use in the Project Area.....43

Section 5 Results of Fieldwork.....44

5.1 SURVEY FINDINGS.....44

Section 6 Summary and Interpretation48

Section 7 References Cited49

List of Figures

Figure 1. US Geological Survey topographic map, Ewa Quad (2003), showing project area location (hatched area).....	2
Figure 2. Tax Map Key 1-9-1-069, showing project area (Lot 3).....	3
Figure 3. Aerial photograph of the project area.....	3
Figure 4. NRCS (2006) map, showing soils in the project area.....	5
Figure 5. Western, open section of the project area, view to the northwest.....	8
Figure 6. Eastern, vegetated and bulldozed section of the project area, view to the northwest.....	8
Figure 7. Place Names of Honouliuli (map adapted from Sterling and Summers 1978); dark circles mark <i>heiau</i> ; numbered sites (133-139,146) from McAllister (1933).....	10
Figure 8. Portion of 1825 Map of the South Coast of Woahoo (O'ahu) and Honolulu by Lieut. C.R. Malden from the British ship the <i>Blonde</i>	18
Figure 9. Map by Tuggle and Tomonari-Tuggle (1997:32), compiled from historic maps, showing features of the 'Ewa Plain from 1825 to World War II.....	19
Figure 10. Portion of 1881 Hawaiian Government Survey map by C.J. Lyons, showing project area location within LCA 11218; also note location of Honouliuli Taro Lands adjacent to the West Loch of Pearl Harbor, and trail through 'Ewa passing by Pu'uokapolei.....	23
Figure 11. 1902 map showing relationship of Ewa Plantation and the Oahu Sugar Co. plantation; also note location of sisal growing area.....	26
Figure 12. 1939 map of Ewa Plantation Co. lands, showing project area southwest of "Villages" and northeast of "Sisal" growing area.....	28
Figure 13. 1930 U.S. Geological Survey map, showing no structures in the project area; note OR&L railroad tracks on the northern boundary of the project area.....	30
Figure 14. U.S. Geological Survey topographic map, showing previous archaeological survey areas near the current project area.....	33
Figure 15. U.S. Geological Survey map, showing mapped extent of 'Ewa Karst in relation to the current project area (map from Halliday 1999).....	42
Figure 16. Sheep paddock in eastern project area, view to the south.....	45
Figure 17. Central area leased for parties, cleared rocks placed around a tree, view to the south.....	45
Figure 18. Brush piles in eastern section of project area, view to the west.....	46
Figure 19. Bottle (mainly recent beer bottles) dumps and scatters in the eastern section of the project area.....	46
Figure 20. Trash piles in the eastern section of the project area, view to the west.....	47
Figure 21. Scatter of concrete fragments in northeastern corner of project area, view to the north.....	47

List of Tables

Table 1. Summary of preliminary contact information.....	6
Table 2. Summary of previous archaeological work near the project area.....	34

Section 1 Introduction

1.1 Project Background

At the request of Mr. Valentine Peroff, Jr. (99-880 Iwaena Street, Aiea, Hawai'i 96701), Cultural Surveys Hawai'i, Inc. (CSH) has completed this Archaeological Assessment report for the 'Ewa Industrial Park Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island (TMK: [1] 9-1-069:003) (Figure 1 to Figure 3). The landowner, Mr. Peroff, plans to develop this area into an industrial park.

The project area is a 48.18-acre fenced lot, bound on the north by the right-of-way along the existing track of the Oahu Railway and Land Co., which runs parallel to the *makai* (inland) side of Renton Road. The parcel is bound on all other sides by existing properties; a southern dog-leg section extends south to Geiger Road.

In consultation with the State of Hawai'i Department of Land and Natural Resources, State Historic Preservation Division (DLNR/SHPD), the investigation was designed to fulfill the state requirements for archaeological inventory survey [Hawai'i Administrative Rules (HAR) Chapter 13-276]. This document was prepared to support the proposed project's historic preservation review under HRS Chapter 6E-42 and HAR Chapter 13-284, as well as the project's environmental review under HRS Chapter 343. Because no significant sites were encountered, this study is regarded by the SHPD as an "Archaeological Assessment."

1.2 Scope of Work

The following archeological inventory survey scope of work satisfies the State and County requirements:

1. State rules have recently been established that require consultation with community members as part of the inventory survey process. This consultation requires contacting knowledgeable members of the community and requesting information on historic and cultural issues related to the property. A separate Cultural Impact Assessment report for this project will be written by CSH (Souza et al. 2006), and a summary of the preliminary results for that report is presented here.
2. A complete ground survey of the entire project area for the purpose of historic property identification and documentation was conducted.
3. CSH consulted with the State Historic Preservation Division (SHPD), with the client's permission, to determine if they required subsurface testing as part of the inventory survey.
4. Research on historic and archaeological background, including a search of historic maps, written records, and Land Commission Award documents was conducted. This research focused on the specific area with general background on the *ahupua'a* and settlement patterns for the district.

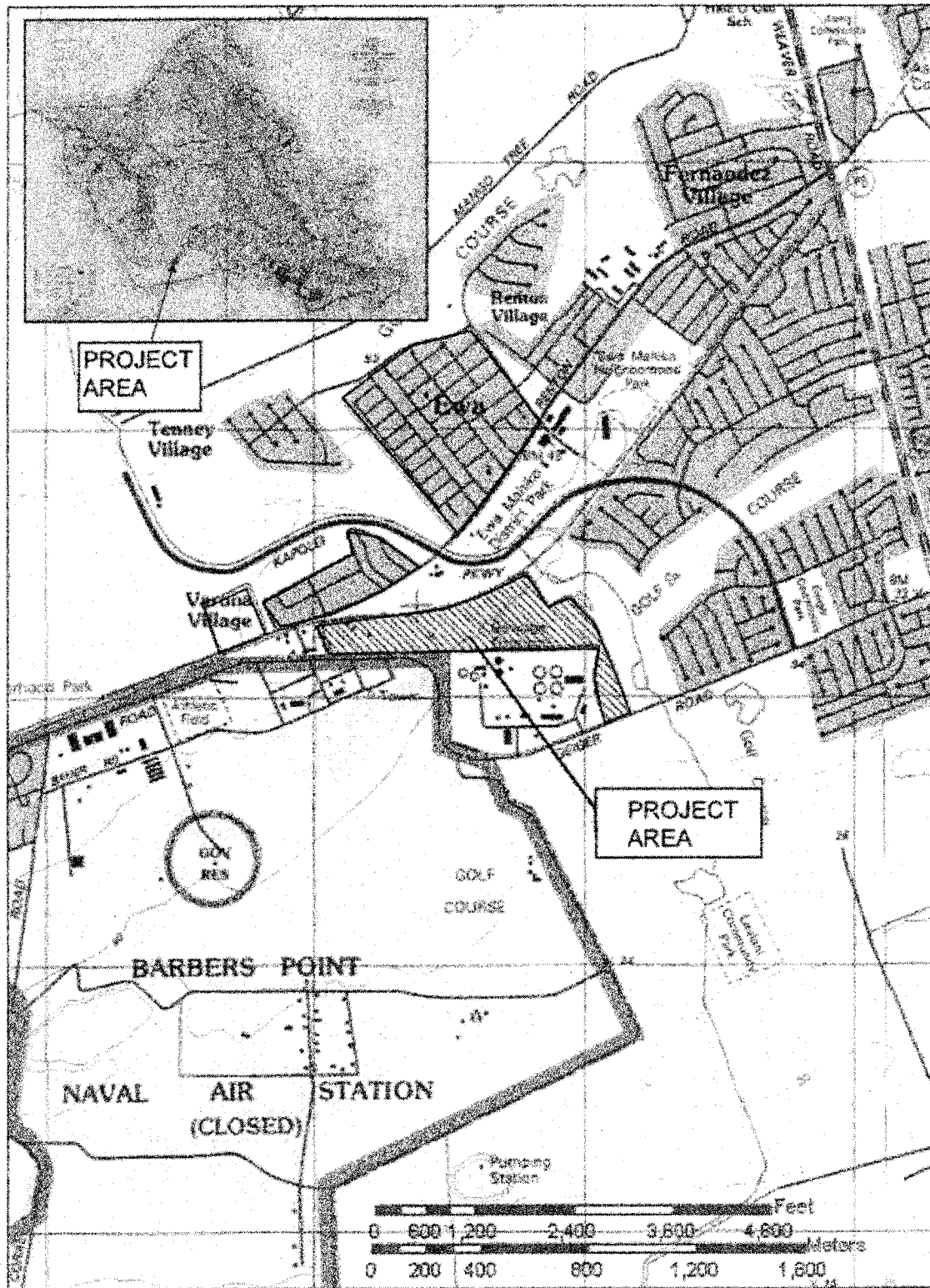


Figure 1. US Geological Survey topographic map, Ewa Quad (2003), showing project area location (hatched area)

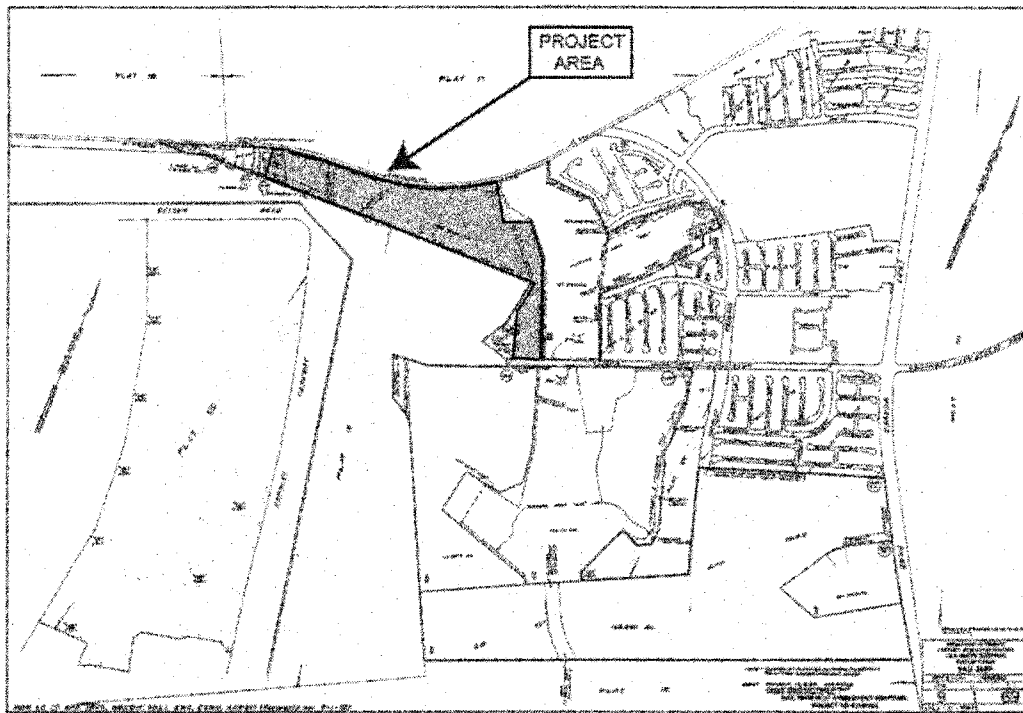


Figure 2. Tax Map Key 1-9-1-069, showing project area (Lot 3)

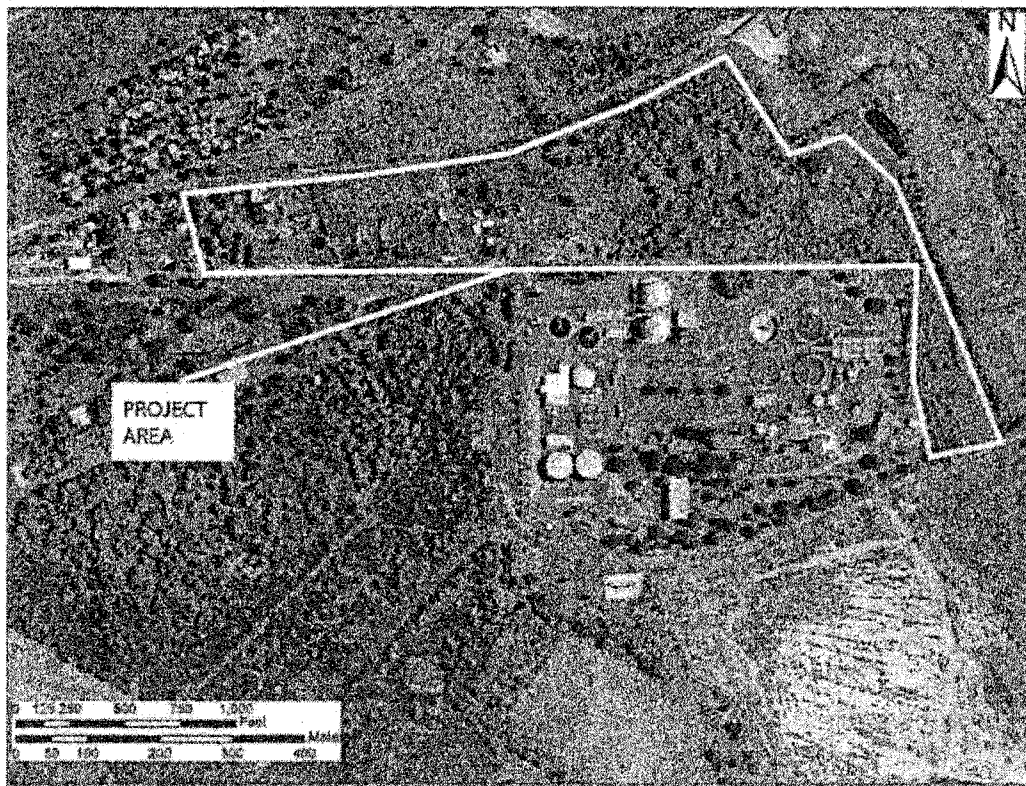


Figure 3. Aerial photograph of the project area

5. The present survey report includes:
 - a. A topographic map of the survey area showing all historic properties;
 - b. a summary of the results of consultation with knowledgeable community members about the property and its historical and cultural issues;
 - c. a description of the project area and discussion of features; historical and archaeological background sections summarizing prehistoric and historic land use as they relate to the project area's historic properties;
 - d. a summary of historic property categories and their significance, if any, in an archaeological and historic context; and,
 - e. recommendations based on all information generated that specify what steps should be taken to mitigate impact of development on the project area's significant historic properties, if any, such as monitoring. These recommendations were developed in consultation with the client and the State agencies

This scope of work includes full coordination with the SHPD and the County relating to archaeological matters. This coordination took place after consent of the owner or his representatives.

1.3 Environmental Setting

1.3.1 Natural Environment

Honouliuli Ahupua'a is the largest traditional land unit on O'ahu, extending from the West Loch of Pearl Harbor in the east, to the border of Nānākuli Ahupua'a at Pili o Kahe in the west. Honouliuli Ahupua'a includes approximately 19 kilometers, or 12 miles, of open coastline from One'ula westward to Pili o Kahe. The *ahupua'a* extends *mauka* (inland) from West Loch nearly to Schofield Barracks in Wahiawā. The western boundary is the Wai'anae Mountain crest running north as far as Pu'u Hāpapa (or to the top of Ka'ala Mountain, according to some).

Lying in the lee of the Wai'anae mountain range, the project area is one of the driest areas of O'ahu with most of the area averaging about 18 inches of rainfall annually (Juvik and Juvik 1998:56). Temperatures range between 60° to 90°F through the year; the highest temperatures are in August and September (Armstrong 1973). Elevation in the project area ranges from 30-50 ft (feet), or 10 to 15 m (meters) AMSL (above mean sea level). The project area is located on the 'Ewa Plain, which is a Pleistocene (>38,000 years old) reef platform overlain by alluvium from the southern end of the Wai'anae Mountain Range. This alluvium supported commercial sugar cane cultivation for over a century.

In pre-contact Hawai'i, the project area would have been mostly lowland dry shrub and grassland, dominated by species such as *wiliwili* (*Erythrina sandwicensis*), *lama* (*Diospyros ferrea*), sandalwood (*Santalum* sp.), *'a'ali'i* (*Dodonea eriocarpa*), scrub *'ōhi'a* (*Metrosideros collina*) and *pili* grass (*Heteropogon contortus*). In contrast, the non-cleared portions of the project area are currently dominated by introduced species such as *kiawe* and the prickly Lions-Ear (*Leontotis nepetaefolia*).

At least 75% of the project area (Figure 4) is covered with soils of the Mamala series, Mamala stony silty clay loam (MnC). This series consists of shallow, well-drained soils, which formed in alluvium deposited over coral limestone and consolidated calcareous sand. The southeastern dogleg of the project area is covered with a mosaic of soils consisting of Ewa silty clay loam (EmA), Honouliuli Clay (HxA), and Waialua silty clay (WkA). The Ewa Series consists of well-drained soils in basins and on alluvial fans. These soils developed in alluvium derived from basic igneous rock. The Honouliuli Series consists of well-drained soils on coastal plains, which developed in alluvium derived from basic igneous material. The Waialua series consists of moderately well-drained soils on alluvial fans. These soils developed in alluvium weathered from basic igneous rock. All four soils in the project area are used for sugarcane, truck crops, orchards, and pasture. (Foote et al. 1972, online at <http://www.ctahr.hawaii.edu/soilsurvey/soils.htm>).

1.3.2 Built Environment

The project area is currently covered with two tenants' houses, a few farm buildings, fenced cow, pig, and goat/sheep pastures, and rooster coops. A central open portion of the project area is leased for private parties, including the annual Bon Dance Festival of the Hongwanji Mission, this year held on June 17.

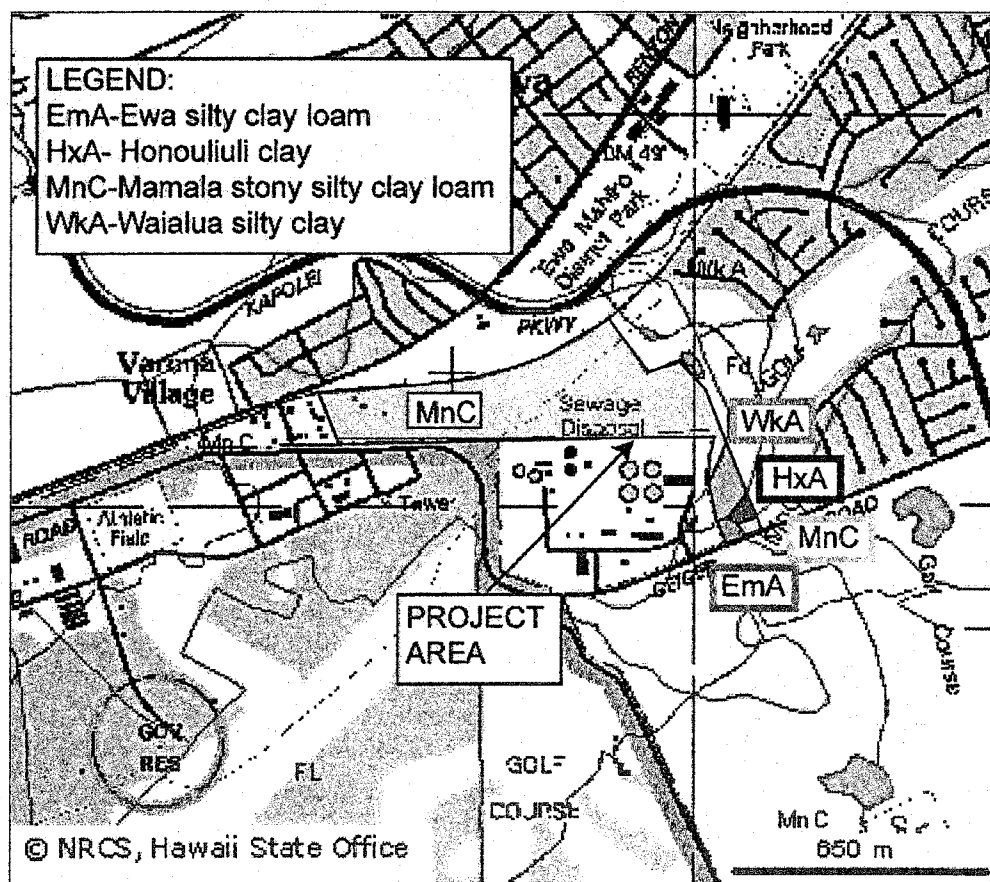


Figure 4. NRCS (2006) map, showing soils in the project area

Section 2 Methods

2.1 Field Methods

The pedestrian inspection of the project area, was conducted on August 4, 2006 by three Cultural Surveys Hawai'i staff archaeologists, Constance R. O'Hare, B.A., Jennifer Olson, B.A., and Kehaulani Souza, B.A., under the general direction of Hallett H. Hammatt, Ph.D. The project area was inspected on foot by parallel pedestrian sweeps. Field crew were spaced only five meters apart, since the project area is subdivided into many small parcels by fences and roads. Large areas of the project area are clear of all vegetation, such as the fenced pastures, farm houses and outbuildings, and an area set aside for lease to private parties (Figure 5). The remaining area was covered with a moderately low cover of *kiawe* (*Prosopis pallida*) trees and spiny shrubs (*Leonotis nepetaefolia*) (Figure 6). The generally sparse to moderate vegetation cover within the project area allowed for a nearly complete visual inspection of lands within the project area.

2.2 Laboratory Methods

No cultural material was noted or collected, so no laboratory analysis took place.

2.3 Document Review

Background research included a review of previous archaeological studies on file at the State Historic Preservation Division, and a review of geology and cultural history documents at Hamilton Library at the University of Hawai'i, the Hawai'i Public Library, and the Archives of the Bishop Museum. Further research included a study of historic maps at the Survey Office of the Department of Accounting and General Services. Information on LCAs was accessed through Waihona 'Āina Corporation's Māhele Data Base (<http://www.waihona.com/>).

2.4 Consultation

Consultation with community members will be reported in full in a separate document (Souza et al. 2006); this consultation process is not complete at this time. A summary of preliminary contacts is presented in Table 1.

Table 1. Summary of preliminary contact information

Name	Affiliation	Comments
Barbieto, Lida	Raised in Ewa Plantation (Banana /Varona camp)	Mrs. Barbieto mentioned the pig farms that were once in the project area and the train track that borders the project area. Presently the area is leased to a man who runs a construction company.
Barbieto, Pio	Raised in Ewa Plantation (Banana /Varona camp)	Mr. Barbieto remembers a lot of <i>kiawe</i> and the pig farm.

Name	Village	Comments
Maria, Sunny (Goggles)	Raised in Tenney Village. He was chief power plant operator for Ewa Plantation (72 Years old)	Mr. Maria hunted for doves in the project area. He stated that the project area was used as a pig farm and pasture for cows.
Nakamura, Fumiko	Raised in Tenney Village (79 years old)	Mrs. Nakamura stated she did not go near the project area.
Nakamura, Kojiro (Freckles)	Raised in Tenney Village (81years old)	Mr. Nakamura stated that in the project area there were cows and a pig farm.
Nakamatsu, Charles	Raised in the Ewa Plantation in C Village.	Mr. Nakamatsu's family ran a pig farm in the project area in the 1930s. They leased agriculture land from the plantation for a \$1 a year. They would <i>kālua</i> (bake in the ground) the pigs and sell the meat. Eventually, that was too much work, so they used the Filipino style of cooking, <i>hulihuli</i> (to turn), which was more profitable. There were 30 to 40 pig pens in the area.
Nāmu'o, Clyde	Administrator at Office of Hawaiian Affairs	No response
Paishon, Frank Jr.	Raised in Tenney Village	No response
Quintal, Leti	Raised in Ewa Plantation, Secretary for the Immaculate Conception Church in 'Ewa	Made referral to Lida and Pio Barbieto.
Ramos, Rodolfo	Chair of 'Ewa Task Force	No response
Sato, Melvin	Raised in Ewa Plantation "C" Village	Mr. Sato's only recollection of the project area was for pig farms. As a child, he would find bullet casings on the surface from prior use by the military.
Soma, Kenneth	Retired from Ewa Plantation and current resident	Mr. Soma recalls a lot of military remnants in the project area. South of the project area the military had anti-air craft guns. The plantation had cattle, and a dairy on the east end of the project area. Also on the east end of the project area were eight houses that the OR & L owned and housed their workers. The Japanese also raised bees for honey in the project area.
Soma, Millie	Raised in Ewa Plantation Tenney Village	Mrs. Soma remembers the pig farm in the project area.
Tiffany, Nettie	<i>Kahu</i> for Lanikūhonua	No response

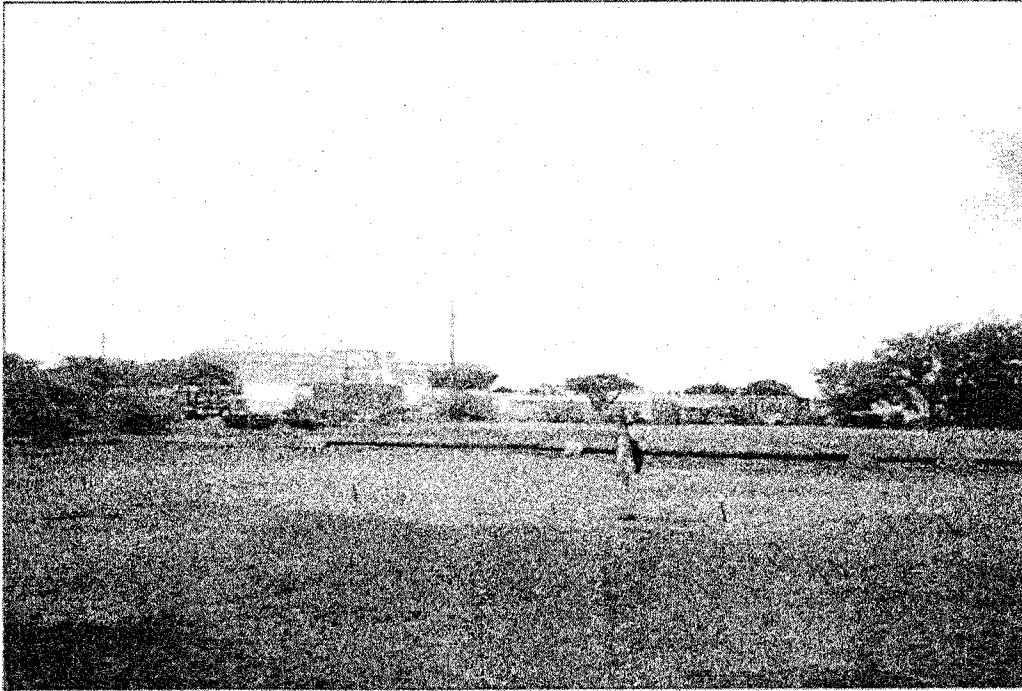


Figure 5. Western, open section of the project area, view to the northwest

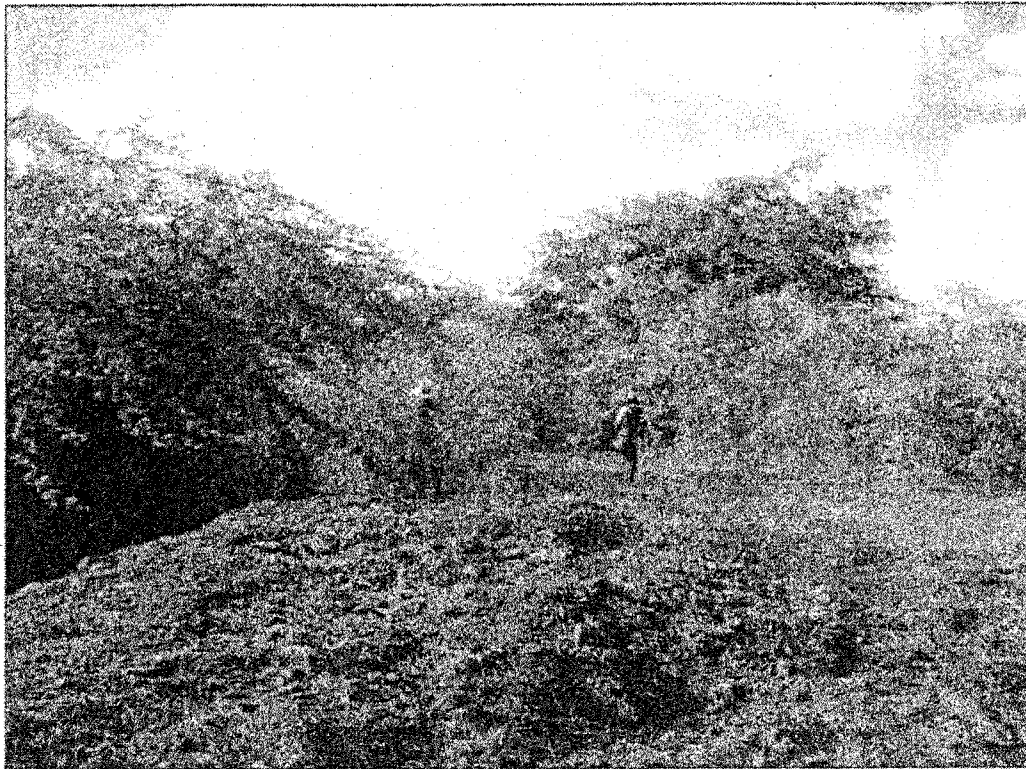


Figure 6. Eastern, vegetated and bulldozed section of the project area, view to the northwest

Section 3 Background Research

As noted, the project area is located within the dry, arid 'Ewa Plain. Kalo'i Gulch, the only source for water in the pre-contact period is located approximately 75 m (250 ft) to the east of the project area. Puku'i et al. (1974:77) translate the name Kalo'i to mean "the taro patch," and Sterling and Summers (1978:35) relate a number of vignettes regarding the "Waihuna" or "Punahuna" hidden spring. Ida E.K. von Holt (in Sterling and Summers 1978:35) related the account of "two old Hawaiians" that the hidden spring "had been one of the principle sources of water for all that country, which was quite heavily populated before the smallpox epidemic of 1840. This spring was probably located *mauka* (inland) of the project area. Possibly the naming of 'Ewa, which means "crooked" relates to the meandering nature of Kalo'i Stream, which makes a sharp 60° turn to the east just north of the current project area.

3.1 Mythological and Traditional Accounts

The traditions of Honouliuli Ahupua'a have been compiled by several authors, in studies by Sterling and Summers (1978), Hammatt and Folk (1981), Kelly (1991), Charvet-Pond and Davis (1992), Maly (1992), and Tuggle and Tomonari-Tuggle (1997). Some of the traditional themes associated with this area include connections with Kahiki, the traditional homeland of Hawaiians in central Polynesia. There are several versions of the chief Kaha'i leaving from Kalaeloa for a trip to Kahiki; on his return to the Hawaiian Islands he brought back the first breadfruit (Kamakau 1991b:110) and planted it at Pu'uloa, near Pearl Harbor in 'Ewa (Beckwith 1940:97). Several stories associate places in Honouliuli to the gods Kāne and Kanaloa, with the Hawaiian pig god Kamapua'a and the Hina family, and with the sisters of Pele, the Hawaiian volcano goddess, all of whom have strong connections with Kahiki (Kamakau 1991b:111; Puku'i et al. 1974:200). The locations of traditional places names for Honouliuli are illustrated in Figure 7.

3.1.1 The Naming of 'Ewa and Honouliuli

Honouliuli is the largest *ahupua'a* in the *moku* (district) of 'Ewa. One translation of the name for this district is given as "unequal" (*Saturday Press* Aug. 11, 1883). Others translate the word as "strayed" and associate it with a legend of the gods, Kāne and Kanaloa.

When Kane and Kanaloa were surveying the islands they came to Oahu and when they reached Red Hill saw below them the broad plains of what is now Ewa. To mark boundaries of the land they would throw a stone and where the stone fell would be the boundary line. When they saw the beautiful land lying below them, it was their thought to include as much of the flat level land as possible. They hurled the stone as far as the Waianae range and it landed somewhere, in the Waimanalo section. When they went to find it, they could not locate the spot where it fell. So Ewa (strayed) became known by the name. The stone that strayed [Told to E.S. by Simeon Nawaa, March 22, 1954; cited in Sterling and Summers 1978:1].

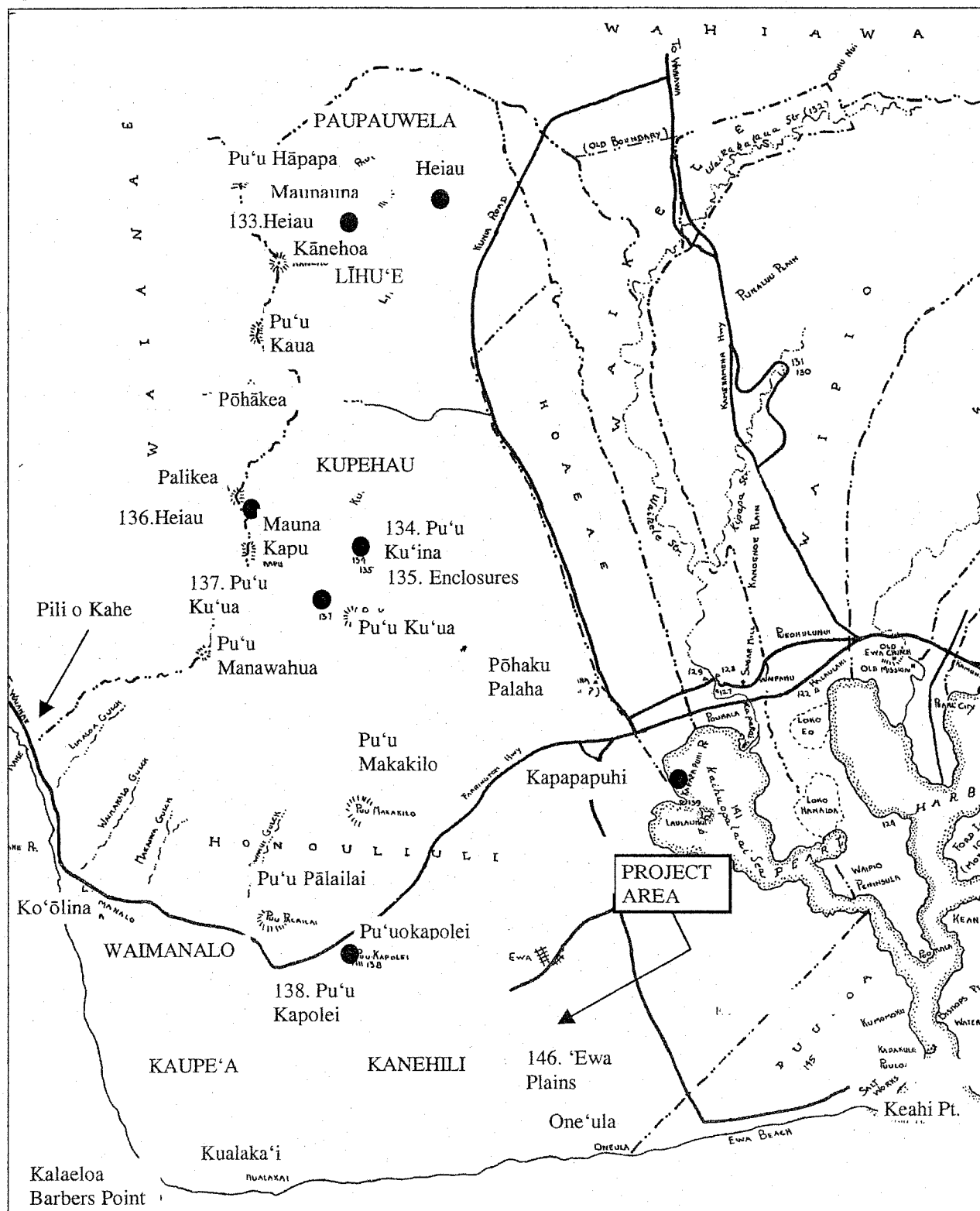


Figure 7. Place Names of Honouliuli (map adapted from Sterling and Summers 1978); dark circles mark heiau; numbered sites (133-139,146) from McAllister (1933)

It seems likely the boundaries of the western-most *ahupua'a* of 'Ewa were often contested with Wai'anae people. The 'Ewa people could cite divine sanction that the dividing point was between two hills at Pili o Kahe:

Eventually the stone [cast by Kāne and Kanaloa] was found at Pili o Kahe. This is a spot where two small hills of the Wai'anae Range come down parallel on the boundary between Honouliuli and Nānākuli ('Ewa and Wai'anae). The ancient Hawaiians said the hill on the 'Ewa side was the male and the hill on the Wai'anae side was female. The stone was found on the Waianae side hill and the place is known as Pili o Kahe.

(Pili=cling to, Kahe=flow). The name refers, therefore, to the female or Waianae side hill. And that is where the boundary between the two districts runs [Told to E.S. by Simeon Nawaa, March 22, 1954; cited in Sterling and Summers 1978:1].

Honouliuli means "dark water," "dark bay," or "blue harbor" and was named for the waters of Pearl Harbor (Jarrett 1930:22), which marks the eastern boundary of the *ahupua'a*. The Hawaiians called Pearl Harbor, Pu'uloa (*lit.* long hill). Another explanation for the name comes from the "Legend of Lepeamoa", the chicken-girl of Pālama. In this legend, Honouliuli is the name of the husband of the chiefess Kapālama and grandfather of Lepeamoa (Thrum 1923:164-184). "Her grandfather gave his name, Honouliuli to a land district west of Honolulu . . ." (Thrum 1923:170). Westervelt (1963:209) gives an almost identical account.

3.1.2 Pu'uokapolei and the Plains of Kaupe'a

Pu'uokapolei is a prominent hill at the *mauka* edge of the coastal 'Ewa Plains and was the primary landmark for travelers on the trail that ran from Pearl Harbor west to Wai'anae ('Ī'Ī 1959:27, 29; M.K. Nakuina 1992:54; E.M. Nakuina 1904, in Sterling and Summers 1978:34).

3.1.2.1 Pu'uokapolei, Astronomical Marker and Heiau

Pu'u means hill and Kapolei means "beloved Kapo," a reference to the sister of the Hawaiian volcano goddess, Pele. Samuel Kamakau says that ancient Hawaiians used Pu'uokapolei as an astronomical marker to designate the seasons:

. . . the O'ahu people who reckoned the time (*O'ahu po'e helu*) called the season Kau [summer] for the setting of the sun from Pu'uokapolei, a hill in Honouliuli, 'Ewa, to the opening of Mahinaona (*i ke kawaha o Mahinaona*). When the sun moved south from Pu'uokapolei—and during the season of the sun in the south—for the coming of coolness and for the sprouting of new buds on growing things—the season was called Ho'oilō [winter, rainy, season] [Kamakau 1976:14]

A *heiau* was once on Pu'uokapolei, but had been destroyed by McAllister's (1933:108) survey of the island in the early 1930s. The hill was used as a point of solar reference or as a place for such observations (Fornander 1919b, Vol. VI, Part 2:292). Pu'uokapolei may have been regarded as the gate of the setting sun, just as the eastern gate of Kumukahi in Puna is regarded as the rising sun; both places are associated with the Hawaiian goddess Kapo (Emerson 1915:41). This somewhat contradicts some Hawaiian cosmologies, in which Kū was the god of

the rising sun, and Hina, the mother of Kamapua'a was associated with the setting sun. Fornander (Fornander 1919b, Vol. VI, Part 2:292) states that Pu'uokapolei may have been a jumping off place (also connected with the setting sun) and associated with the wandering souls who roamed the plains of Kaupe'a and Kāne-hili, *makai* of the hill.

3.1.2.2 Pu'uokapolei and the Plains of Kaupe'a and Kāne-hili

Hi'iaka sang this bitter chant addressed to Lohiau and Wahine-oma'o, which uses the association of the Plains of Kaupe'a as a place for the wandering of lost souls:

*Ku'u aikana i ke awa lau o Pu'uloa,
 Mai ke kula o Pe'e-kaua, ke noho oe,
 E noho kaua e kui, e lei i ka pua o ke kauno'a,
 I ka pua o ke akuli-kuli, o ka wili-wili;
 O ka iho'na o Kau-pe'e i Kane-hili,
 Ua hili au; akahi no ka hili o ka la pomaika'i;
 E Lohiau ipo, e Wahine-oma'o,
 Hoe 'a mai ka wa'a i a'e aku au.*

We meet at Ewa's leaf-shaped lagoon, friends;
 Let us sit, if you will on this lea
 And bedeck us with wreaths of *Kauno'a*,
 Of *akuli-kuli* and *wili-wili*,
 My soul went astray in this solitude;
 It lost the track for once, in spite of luck,
 As I came down the road to Kau-pe'a.
 No nightmare dream was that which tricked my soul.
 This way, dear friends; turn the canoe this way;
 Paddle hither and let me embark
 [Emerson 1915:167-168].

Several other Honouliuli places are mentioned in this chant, including Pe'e-kaua, which may be a variation of Kau-pe'e or Kaupe'a, and the plains of Kānehili, the last of which again refers to wandering, as the word *hili* means "to go astray" (Emerson 1915:162). In the chant, Hi'iaka is moving downhill from Kaupe'a, probably the plains adjacent to Pu'uokapolei, toward the coast, the plain of Kānehili.

3.1.2.3 The plains of Kaupe'a and Pu'uokapolei and the Realm of Homeless Souls

There are several places on the 'Ewa coastal plain that are associated with *ao kuewa*, the realm of the homeless souls. Samuel Kamakau (1991b:47-49) explains the Hawaiian beliefs in the afterlife:

... There were three realms (*ao*) for the spirits of the dead. . . There were, first, the realm of the homeless souls, the *ao kuewa*; second, the realm of the ancestral spirits, the *ao 'aumakua*; and third, the realm of Milu, *ke ao o Milu* . . .

The *ao kuewa*, the realm of homeless souls, was also called the *ao 'auwana*, the realm of wandering souls. When a man who had no rightful place in the *'aumakua* realm (*kanaka kuleana 'ole*) died, his soul would wander about and stray amongst the underbrush on the plain of Kama'oma'o on Maui, or in the *wiliwili* grove of Kaupe'a on Oahu. If his soul came to Leilono [in Halawa, 'Ewa near Red Hill], there he would find the breadfruit tree of Leiwalo, *ka'ulu o Leiwalo*. If it was not found by an *'aumakua* soul who knew it (*i ma'a mau iaia*), or one who would help it, the soul would leap upon the decayed branch of the breadfruit tree and fall down into endless night, *the pō pau 'olo o Milu*. Or, a soul that had no rightful place in the *'aumakua* realm, or who had no relative or friend (*makamaka*) there who would watch out for it and welcome it, would slip over the flat lands like a wind, until it came to a leaping place of souls, a *leina a ka 'uhane*. . . . [Kamakau 1991a:47].

On the plain of Kaupe'a beside Pu'uloa [Pearl Harbor], wandering souls could go to catch moths (*pulelehua*) and spiders (*nanana*). However, wandering souls could not go far in the places mentioned earlier before they would be found catching spiders by *'aumakua* souls, and be helped to escape. . . . [Kamakau 1991a:49].

The breadfruit tree Leilono was said to have been located on the 'Ewa-Kona border, above Āliamanu. In another section of his account of the dead, Kamakau calls the plain of wandering souls the "plain at Pu'uokapolei."

There are many who have died and have returned to say that they had no claim to an *'aumakua* [realm] (*kuleana'ole*). These are the souls, it is said, who only wander upon the plain of Kama'oma'o on Maui or on the plain at Pu'uokapolei on Oahu. Spiders and moths are their food [Kamakau 1991b:29].

This association of Pu'uokapolei and Kānehili with wandering souls is also illustrated in a lament on the death of Kahahana, the paramount chief of O'ahu, who was killed by his father, Kahekili, after Kahahana became treacherous and killed the high priest Kaopulupulu.

Go carefully lest you fall dead in the sun,	<i>E newa ai o hea make i ka la,</i>
The god that dwells on Kapolei hill.	<i>Akua noho la i Puuokapolei.</i>
The sun is wailing on account of the	<i>E hanehane mai ana ka la i na</i>
women of Kamao,	<i>wahine o Kamao,</i>
A hiding god, blossoming 'ōhai	<i>Akua pe'e, pua 'ōhai o ke kaha,</i>
of the banks,	
Contented among the stones-	<i>I walea wale i ke a-</i>
Among the breadfruit planted by Kahai.	<i>I ka ulu kanu a Kahai.</i>
Thou wast spoken of by the 'ō'ō-	<i>Haina 'oe e ka 'ō'ō-</i>
By the bird of Kanehili.	<i>E ka manu o Kanehili.</i>

[Fornander 1919a, Vol. VI, Part 2:297]

Fornander provides some notes on this lament. The god dwelling at Kapolei is the god Kahahana, stating that this is where his soul has gone. Kamao is one of the names of the door to

the underworld. This lament draws an association with wandering souls and the place where the first breadfruit tree was planted by Kahai at Pu'uloa (Fornander 1919b, Vol. VI, Part 2:304).

Mary Kawena Pukui offers this Hawaiian saying, which places the wandering souls in a *wiliwili* grove at Kaupe'a.

The *wiliwili* grove of Kaupe'a

Ka wiliwili of Kaupe'a.

In 'Ewa, O'ahu. Said to be where homeless ghosts wander among the trees
[Pukui 1983:#1666].

Beckwith (1940:154) has stressed that "the worst fate that could befall a soul was to be abandoned by its *'aumakua* and left to stray, a wandering spirit (*kuewa*) in some barren and desolate place." These wandering spirits were often malicious, so the places that they wandered were avoided.

3.1.2.4 The Plain of Pukaua

The Hawaiian language newspaper *Ka Loea Kālai'āina*, (January 13, 1900) relates that near Pu'uokapolei, on the plain of Pukaua, on the *mauka* side of the road, there was a large rock. This legend suggests that the plain around Pu'uokapolei was called Pukaua. The legend is as follows:

If a traveler should go by the government road to Waianae, after leaving the village of gold, Honouliuli, he will first come to the plain of Puu-ainako and when that is passed, Ke-one-ae. Then there is a straight climb up to Puu-o-Kapolei and there look seaward from the government road to a small hill, That is Puu-Kapolei. . . . You go down some small inclines, then to a plain. This plain is Pukaua and on the mauka side of the road, you will see a large rock standing on the plain. . . . There were two supernatural old women or rather peculiar women with strange powers and Puukaua belonged to them. While they were down fishing at Kualaka'i [near Barbers Point] in the evening, they caught these things, *'a'ama* crabs, *pipipi* shellfish, and whatever they could get with their hands. As they were returning to the plain from the shore and thinking of getting home while it was yet dark, they failed for they met a one-eyed person [bad omen]. It became light as they came near to the plain, so that passing people were distinguishable. They were still below the road and became frightened lest they be seen by men. They began to run - running, leaping, falling, sprawling, rising up and running on, without a thought of the *'a'ama* crabs and seaweeds that dropped on the way, so long as they would reach the upper side of the road. They did not go far for by then it was broad daylight. One woman said to the other, "Let us hide lest people see us," and so they hid. Their bodies turned into stone and that is one of the famous things on this plain to this day, the stone body. This is the end of these strange women. When one visits the plain, it will do no harm to glance on the upper side of the road and see them standing on the plain [*Ka Loea Kālai'āina*, January 13, 1900, translation in Sterling and Summers 1978:39].

In another version of this story, the two women met Hi'iaka as she journeyed toward the 'Ewa coast. The women were *mo'o* (supernatural beings) and were afraid that Hi'iaka would kill them,

so they changed into their lizard form. One of the lizards hid in a little space on a stone beside the coastal trail, and the other hid nearby (*Ka Hōkū o Hawai'i*, February 15, 1927, translated in Maly 1997:19). From that time on the stone was known as *pe'e-kāua*, meaning "we two hidden." Hi'iaka greeted the two women but did not harm them, and passed on.

When she reached Pu'uokapolei, she also greeted two old women who lived at an 'ohai grove on the hill. These women were named Pu'uokapolei and Nāwahineokama'oma'o (*Ka Hōkū o Hawai'i*, February 22, 1927, translated in Maly 1997:19). As she continued her travels, she looked to the ocean and saw the canoe carrying Lohi'au.

My man on the many harbored sea of Pu'uloa	<i>Ku'u kāne i ke awa lau o Pu'uloa</i>
As seen from the plain of Pe'ekāua	<i>Mai ke kula o Pe'ekāua ke noho</i>
Let us dwell upon the 'ōhai covered shore	<i>E noho kāua i ke kaha o ka 'ōhai</i>
Where the noni blossoms are twisted together	<i>I ka wiliwili i ka pua o ka lau noni</i>
Descending along Kānehili	<i>O ka ihona i Kānehili la</i>
I am winding along	<i>Ua hili ho'i au-e</i>

[*Ka Hōkū o Hawai'i*, February 22, 1927, translated in Maly 1997:20].

3.1.2.5 Pu'uokapolei and Kamapua'a

Pu'uokapolei's was the home of Kamapua'a's grandmother, Kamaunuaniho, who was one of the three migrants from Kahiki that were ancestors to the people of O'ahu (Fornander 1919a, Vol. V, Part 2:318; Kahiolo 1998:81, 107). Kamapua'a, the Hawaiian pig god, once lived in Kaluanui on the windward side, but escaped to 'Ewa when he was pursued by the chief Olopana.

Kamapua'a subsequently conquered most of the island of O'ahu, and, installing his grandmother [Kamaunuaniho] as queen, took her to Pu'uokapolei, the lesser of the two hillocks forming the southeastern spur of the Wai'anae Mountain Range, and made her establish her court there. This was to compel the people who were to pay tribute to bring all the necessities of life from a distance, to show his absolute power over all [Nakuina 1904:50-51].

Emma Nakuina goes on to note: "A very short time ago [prior to 1904] the foundations of Kamaunuaniho's house could still be seen at Pu'uokapolei." Another account (*Ka Loea Kālai'āina* January 13, 1900, translated in Sterling and Summers 1978:34) speaks of Kekeleaiuku, the older brother of Kamapua'a, who also lived on Pu'uokapolei.

3.1.2.6 The Strife at Honouliuli; Kūali'i unites Hawai'i nei (Mo'olelo o Kūali'i)

The celebrated chief, Kūali'i, is said to have led an army of twelve thousand ('*ekolu mano*) against the chiefs of Ko'olauloa with an army of twelve hundred ('*ekolu lau*) upon the plains of Keahumoa (Fornander 1917, Vol. IV, Part 2:364-401). Perhaps because the odds were so skewed, the battle was called off and the *ali'i* of Ko'olau ceded (*ha'awi a'e*) the districts of Ko'olauloa, Ko'olaupoko, Waialua and Wai'anae to Kūali'i. When the *ali'i* of Kaua'i heard of this victory at Honouliuli they gave Kaua'i to Kūali'i as well, and thus he became possessed of all the islands (*a lilo a'e la nā moku a pau ia Kūali'i mai Hawai'i a Ni'ihau*). The strife at Honouliuli was the occasion of the recitation of a song for Kūali'i by a certain Kapa'ahulani (*Ka*

Pule Ana a Kapa'ahulani). This *mele* compares the king to certain places and objects in the islands, in this instance to the first breadfruit planted by Kahai at Pu'uloa, and a pig and a woman on Pu'u Kapolei, possibly a reference to Kamapua'a and his grandmother.

Not like these art thou, Kū.	<i>'A'ole I like Kū.</i>
Not like the pig	<i>'A'ole I like i ka puua,</i>
Discerning the progeny of the god;	<i>I ka weke lao a ke akua,</i>
[Or] The breadfruit planted by Kahai.	<i>Ka ulu kanu a Kahai;</i>
Truly, have you not known	<i>Oi ole ka oe i ike,</i>
The woman with the dyed garment,	<i>Ka wahine pau mao</i>
On the top of Pu'uokapolei?	<i>I ka luna o Pu'uokapolei-la?</i>

[Fornander 1917, Vol. IV, Part 2:392-393].

A later section of this *mele* also refers to Pu'uokapolei and makes mention of the famous blue *poi* of Honouliuli.

O Kawelo! Say, Kawelo!	<i>O Kawelo-e, e Kawelo-e,</i>
Kawelokiki, the sharp-pointed hill,	<i>O Kaweloiki puu oioi,</i>
Hill of Kapolei.	<i>Pu'u of Kapolei-e-</i>
Blue is the poi which appeases	<i>Uliuli ka poi e piha nei-o Honouliuli;</i>
[the hunger] of Honouliuli.	

[Fornander 1917, Vol. IV, Part 2:400-401].

3.2 Historic Background

3.2.1 Pre-Contact and Early Post-Contact Periods

By ca. A.D. 1320, 'Ewa, along with Kona, and Ko'olaupoko were the dominant polities, ruled by the sons of a chief named Māweke (Cordy 2002:21). 'Ewa at this time included the traditional districts of 'Ewa, Wai'anae, and Wai'alua (Fornander 1880:48). Around A.D. 1400, the entire island was ruled by King La'akona; chiefs within his line, the Māweke-Kumuhonua line, reigned until about A.D. 1520-1540, with their major royal center in Līhu'e, in 'Ewa. (Cordy 2002:24). Haka was the last chief of the Māweke-Kumuhonua line; he was slain by his men at the fortress of Waewae near Līhu'e (Kamakau 1991a:54-54; Fornander 1880:88). Power shifted between the chiefs of different districts from the 1500s until the early 1700s, when Kūali'i achieved control of all of O'ahu by defeating the Kona chiefs, then the 'Ewa chiefs, and then expanding his control on windward Kaua'i. Peleiholani, the heir of Kūali'i, gained control of O'ahu ca. 1740, and later conquered parts of Moloka'i. He was ruler of O'ahu until his death in ca. 1778 when Kahahana, of the 'Ewa line of chiefs was selected as the ruler of O'ahu (Cordy 2002:24-41).

After Kamehameha's O'ahu victory and his consolidation of rule over all the Hawaiian Islands, he gave the *ahupua'a* of Honouliuli to Kalanimōkū as part of the *panalā'au*, or conquered lands, with the right to pass the land on to his heirs rather than having it revert to Kamehameha (Kame'eleihiwa 1992:58, 112). Kalanimōkū subsequently gave the *ahupua'a* to his sister, Wahinepi'o.

Various Hawaiian legends and early historical accounts indicate that the *ahupua'a* (land division) of Honouliuli was once widely inhabited by pre-Contact populations, including the

Hawaiian *ali'i* (chiefly class). This would be attributable for the most part to the plentiful marine and estuarine resources available at the coast, along which several sites interpreted as permanent habitations and fishing shrines have been located. Other attractive subsistence-related features of the *ahupua'a* include irrigated lowlands suitable for wetland taro cultivation, as well as the lower forest area of the mountain slopes for the procurement of forest resources. Handy and Handy (1972:429) report:

The lowlands, bisected by ample streams, were ideal terrain for the cultivation of irrigated taro. The hinterland consisted of deep valleys running far back into the Ko'olau range. Between the valleys were ridges, with steep sides, but a very gradual increase of altitude. The lower part of the valley sides were excellent for the cultivation of yams and bananas. Farther inland grew the 'awa for which the area was famous.

In addition, breadfruit, coconuts, *wauke* (paper mulberry, *Broussonetia papyrifera*, used to make *kapa* for clothing), bananas, and *olonā* (*Touchardia latifoli*, used to make cordage) and other plants were grown in the interior. 'Ewa was known as one of the best areas to grow gourds and was famous for its *māmaki* (*Pipterus* spp.; used to make *kapa* for clothing). It was also famous for a rare taro called the *kāi o 'Ewa*, which was grown in mounds in marshy locations (Handy and Handy 1972:471). The cultivation of this prized and delicious taro led to the saying:

Ua 'ai i ke kāi-koi o 'Ewa. He has eaten the Kāi-koi taro of 'Ewa.

Kāi is O'ahu's best eating taro; one who has eaten it will always like it. Said of a youth of a maiden of 'Ewa, who, like the Kāi taro, is not easily forgotten [Pukui 1983:#2770].

The lochs of Pearl Harbor were ideal for the construction fishponds and fishtraps. Forest resources along the slopes of the Wai'anae Range probably acted as a viable subsistence alternative during times of famine and/or low rainfall (Handy 1940:211; Handy and Handy 1972:469-470). The upper valley slopes may have also been a resource for sporadic quarrying of basalt used in the manufacturing of stone tools. At least one probable quarrying site (SIHP site 50-80-12-4322) is present in Makaīwa Gulch at 152 m (500 ft) above mean sea level (Hammatt et al. 1990a).

John Papa 'Ī'i described a network of Leeward O'ahu trails, which in historic times encircled and crossed the Wai'anae Range, allowing passage from Lualualei to Honouliuli by three different trails ('Ī'i 1959:96-98). The coastal trail skirted Pearl Harbor, passing by Pu'uokapolei; this would have been the nearest of three cross-*ahupua'a* Honouliuli trails to the current project area. Following 'Ī'i's description, a portion of the coastal trail would have passed close to the existing Farrington Highway, north of the project area, as seen in an 1825 map (Figure 8) map of the south coast of O'ahu by Charles Malden of the British ship the *Blonde*.

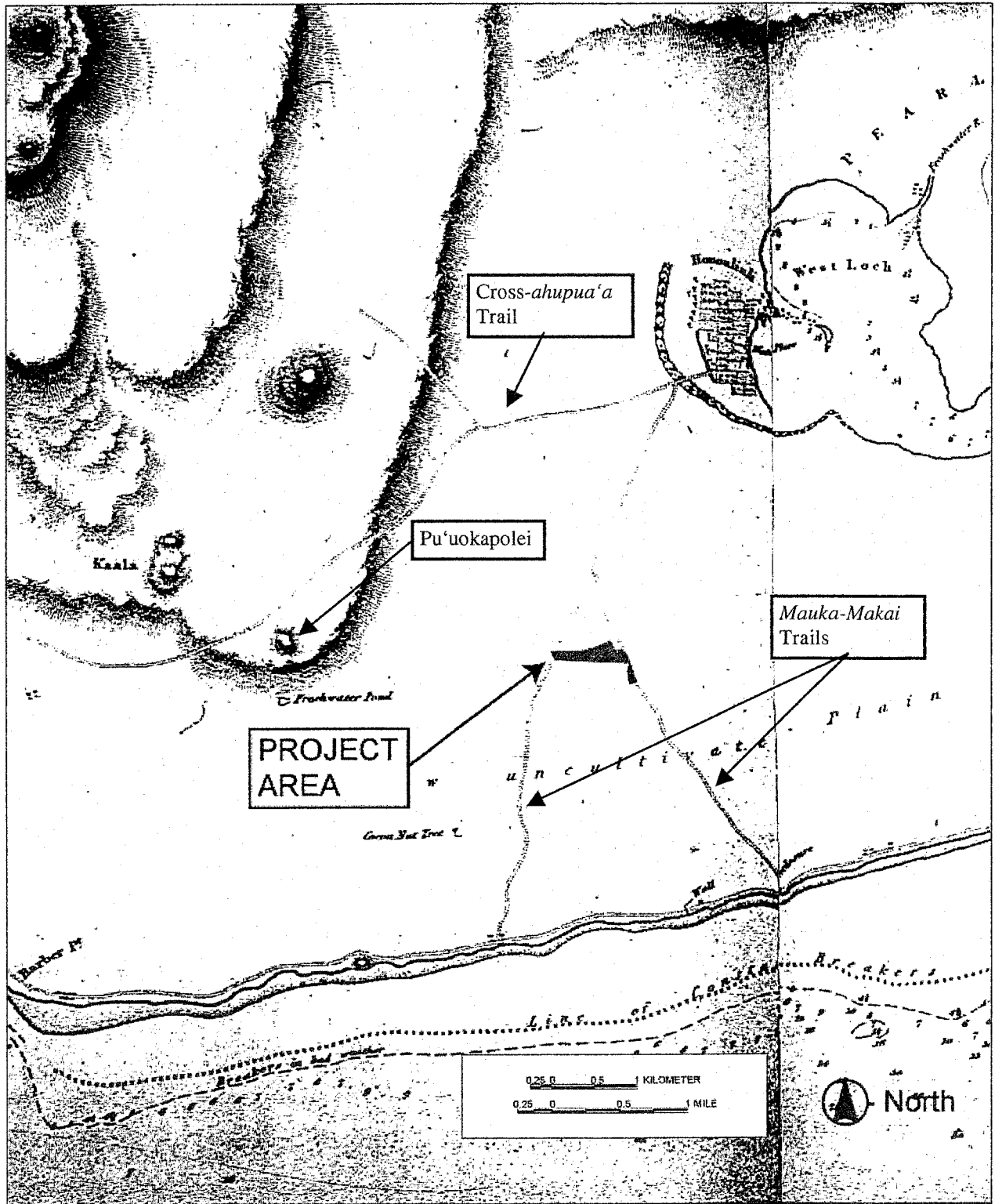


Figure 8. Portion of 1825 Map of the South Coast of Woahoo (O'ahu) and Honolulu by Lieut. C.R. Malden from the British ship the *Blonde*

The trail is described by 'Ī'i as:

The trail went down to the stream and up again, then went above the taro patches of Waiiau, up to a *makai* field, to Waimano, to Manana, and to Waiawa; then to the stream of Kukehi and up to two other *maika* fields, Pueohulunui and Haupuu. At Pueohulunui was the place where a trail branched off to go to Waialua and down to Honouliuli and on to Waianae. As mentioned before, there were three trails to Waianae, one by way of Pu'u o Kapolei, another by way of Pohakea, and the third by way of Kolekole ['Ī'i 1959:97].

Malden's 1825 map (see Figure 8) also shows two spurs of the trail, extending from the cross *ahupua'a* (east-west) trail to the coast to form two *mauka-makai* (north-south) trails. It is difficult to place the project area on this old map exactly, due to the more primitive methods of survey in the nineteenth century, but if our placement is correct, it seems as if these two *mauka-makai* trails ran on each side of the present project area. Tuggle and Tomonari-Tuggle (1997) compiled information on several old maps to produce a map of all important features on the 'Ewa Plain from 1825 to World War II (Figure 9). On this map, the two trails extend to the coast, one ending at the village of One'ula and the other ending halfway between the villages of One'ula and Kualaka'i on the coast.

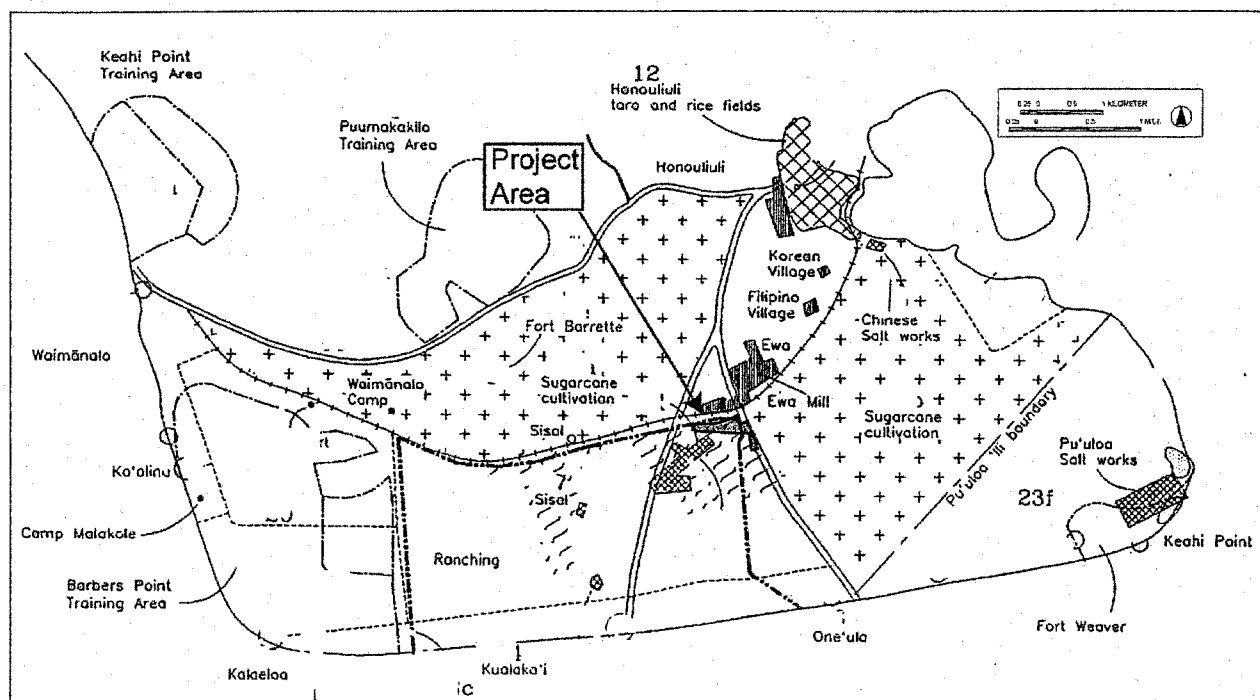


Figure 9. Map by Tuggle and Tomonari-Tuggle (1997:32), compiled from historic maps, showing features of the 'Ewa Plain from 1825 to World War II

Early historical accounts of the general region typically refer to the more populated areas of the 'Ewa district, where missions and schools were established and subsistence resources were perceived to be greater. However, the presence of archaeological sites along the barren coral

plains and coast of southwest Honouliuli Ahupua'a, indicate that prehistoric and early historic populations also adapted to less inviting areas, despite the environmental hardships.

The earliest detailed map of the area shows no habitation closer to the project area than the western edge of West Loch in the vicinity of Kapapahu Point (Hō'ae'ae Point on modern maps). The 1881 C.J. Lyons map (Figure 10) documents substantial settlement at the "Honouliuli Taro Lands" west of Kapapahu Point and it seems clear that in early historic times, this was the population center for Honouliuli Ahupua'a (Dicks et al. 1987). The amenities of that area, such as fishponds, taro *lo'i* (irrigated patches), shellfish collecting, and salt drying would have focused population there in precontact times, and thus the name Honouliuli was also applied to the entire *ahupua'a*.

3.2.2 Observations of Early Explorers and Foreign Residents

Captain Vancouver sailed by Kalaeloa (Barbers Point) in 1792, and recorded his impression of the small coastal village of Kualaka'i and the arid Honouliuli coast.

The point is low flat land, with a reef round it . . . Not far from the S.W. point is a small grove of shabby cocoa-nut trees, and along these shores are a few struggling fishermen's huts [Vancouver 1798, Vol. I:167].

. . . from the commencement of the high land to the westward of Opooroah [Pu'uloa], was composed of one very barren rocky waste, nearly destitute of verdure, cultivation or inhabitants, with little variation all the way to the west point of the island . . . [Vancouver 1798, Vol. II:217].

. . . This tract of land was of some extent but did not seem to be populous, nor to possess any great degree of fertility; although we were told that at a little distance from the sea, the soil is rich, and all necessaries of life are abundantly produced . . . [Vancouver 1798, Vol. III:361-363].

Archibald Campbell, an English seaman who was given some land in Waimano Ahupua'a by King Kamehameha in 1809, described his land around Pearl Harbor:

In the month of November the king was pleased to grant me about sixty acres of land, situated upon the Wymumme [traditional Hawaiian name for Pearl River], or Pearl-water, an inlet of the sea about twelve miles to the west of Hanaroorā [Honolulu]. . . . We passed by footpaths, winding through an extensive and fertile plain, the whole of which is in the highest state of cultivation. Every stream was carefully embanked, to supply water for the taro beds. Where there was not water, the land was under crops of yams and sweet potatoes [Campbell 1967:103-104].

Pearl and mother-of-pearl shells are found here in considerable quantity. Since the king has learned of their value, he has kept the fishing to himself, and employs divers for the purpose [Campbell 1967:114-115].

Subsequent to western contact in the area, the landscape of the 'Ewa plains and Wai'anae slopes was adversely affected by the removal of the sandalwood forest, and the introduction of

domesticated animals and new vegetation species. Domesticated animals, including goats, sheep and cattle, were brought to the Hawaiian Islands by Vancouver in the early 1790s, and allowed to graze freely about the land for some time after. It is unclear when the domesticated animals were brought to O'ahu; however, L.A. Henke reports the existence of a longhorn cattle ranch in Wai'anae by at least 1840 (Frierson 1972:10). During this same time, perhaps as early as 1790, exotic vegetation species were introduced to the area. These typically included vegetation best suited to a terrain disturbed by the logging of sandalwood forest and eroded by animal grazing. Within the current project area, the majority of the (non-cultivated) vegetation is comprised of introduced species, mainly grasses.

At contact, the most populous *ahupua'a* on the island was Honouliuli, with the majority of the population centered on Pearl Harbor. In 1832, a missionary census of Honouliuli recorded the population as 1,026. Within four years, the population was down to 870 (Schmitt 1973:19, 22). In 1835, there were eight to ten deaths for every birth (Kelly 1991:157-158). Between 1848 and 1853, there was a series of epidemics of measles, influenza, and whooping cough that often wiped out whole villages. In 1853, the population of 'Ewa and Wai'anae combined was 2,451 people. In 1872, it was 1,671 (Schmitt 1968:71). The inland area of 'Ewa was probably abandoned by the mid-nineteenth century, due to population decline and consolidation of the remaining people in the town of Honouliuli (at Kapapahu Point, northeast of the project area). A detailed discussion of the historic population counts in the 'Ewa District has been presented by Charvet-Pond and Davis (1992).

The first mission station in 'Ewa was established in 1834 at Kalua'aha near Pearl Harbor. Charles Wilkes, of the U.S. Exploring Expedition visited the missionary enclave at Honouliuli town in 1840.

At Ewa, Mr. Bishop has a large congregation. The village comprises about fifty houses, and the country around is dotted with them. . . . The natives have made some advance in the arts of civilized life; there is a sugar-mill which, in the season, makes two hundred pounds of sugar a day. . . . In 1840, the church contained nine hundred members, seven hundred and sixty of whom belonged to Ewa, the remainder to Waianae; but the Catholics have now established themselves at both these places, and it is understood are drawing off many from their attendance on Mr. Bishop's church [Wilkes 1970:80-81].

3.3 Mid-Nineteenth Century and the Māhele

The Organic Acts of 1845 and 1846 initiated the process of the *māhele* - the division of Hawaiian lands, which introduced private property into Hawaiian society. In 1848, the crown and the *ali'i* (chiefly class) received their land titles. The common people received their *kuleana* (individual parcels) in 1850.

During the *Māhele* of 1848, 72 individual land claims in the *ahupua'a* of Honouliuli were registered and awarded by King Kamehameha III (Tuggle and Tomonari-Tuggle 1997:34). The 72 *kuleana* awards, awards given to commoners, were almost all made adjacent to Honouliuli Gulch, most within the "Honouliuli Taro Lands," which contained fishponds and irrigated taro fields.

In 1855 the Land Commission awarded all of the unclaimed lands in Honouliuli, 43,250 acres, to Miriam Ke'ahikuni Kekau'ōnohi, Royal Patent #6971 in 1877; Parcel #1069 in the Land Court office, Land Commission Award (LCA) 11218 (Figure 10), a granddaughter of Kamehameha I, and the heir of Kalanimōkū, who had been given the land by Kamehameha after the conquest of O'ahu (Indices of Awards 1929; Kame'eiehiwa 1992). Kekau'ōnohi was one of Liholiho's (Kamehameha II's) wives, and after his death, she lived with her half-brother, Luanu'u Kahalai'a, who was governor of Kaua'i (Kelly 1985:21). Subsequently, Kekau'ōnohi ran away with Queen Ka'ahumanu's stepson, Keli'iahonui, and then became the wife of Chief Levi Ha'alelea. Upon her death on June 2, 1851, all her property was passed on to her husband and his heirs. In 1863, the owners of the *kuleana* lands deeded their lands back to Ha'alelea to pay off debts owed to him (Frierson 1972:12). In 1864, Ha'alelea died, and his second wife, Anadelia Amoe, transferred ownership of the land to her sister's husband John Coney (Yoklavich et al 1995:16).

3.3.1 Early Ranching in on the 'Ewa Plain

John Coney rented the land to James Dowsett and John Meek in 1871, who used the land for cattle grazing. In 1877, the land, except for the 'ili of Pu'uloa, was sold to James Campbell. He drove off 32,237 head of stock belonging to Dowsett and Meek and to James Robinson and constructed a fence around the outer boundary of his property (Bordner and Silva 1983:C-12). He let the land rest for one year and then began to restock the ranch, so that he had a head of 5,500 head after a few years (Dillingham 1885, cited in Frierson 1972:14).

In 1880-81, the Honouliuli ranch was described as:

. . . Acreage, 43,250, all in pasture, but possessing fertile soils suitable for agriculture; affords grazing for such valuable stock. The length of this estate is no less than 18 miles. It extends to within less than a mile of the sea coast, to the westward of the Pearl River inlet. . . . There are valuable fisheries attached to this estate [Bowser 1880:489].

From Mr. Campbell's veranda, looking eastward, you have one of the most splendid sights imaginable. Below the house there are two lochs, or lagoons, covered with water fowl, and celebrated for their plentiful supply of fish, chiefly mullet. . . . Besides Mr. Campbell's residence, which is pleasantly situated and surrounded with ornamental and shade trees, there are at Honouliuli two churches and a school house, with a little village of native huts [Bowser 1880:495].

Most of Campbell's lands in Honouliuli were used exclusively for cattle ranching. At that time, one planter remarked "the country was so dry and full of bottomless cracks and fissures that water would all be lost and irrigation impracticable" (Ewa Plantation Co. 1923:6-7). In 1879, Campbell brought in a well-driller from California to search the 'Ewa plains for water, and the well, drilled to a depth of 240 feet near Campbell's home in 'Ewa, resulted in ". . . a sheet of pure water flowing like a dome of glass from all sides of the well casing" (The Legacy of James Campbell n.d., cited in Pagliaro 1987:3). Following this discovery, plantation developers and ranchers drilled numerous wells in search of the valuable resource.

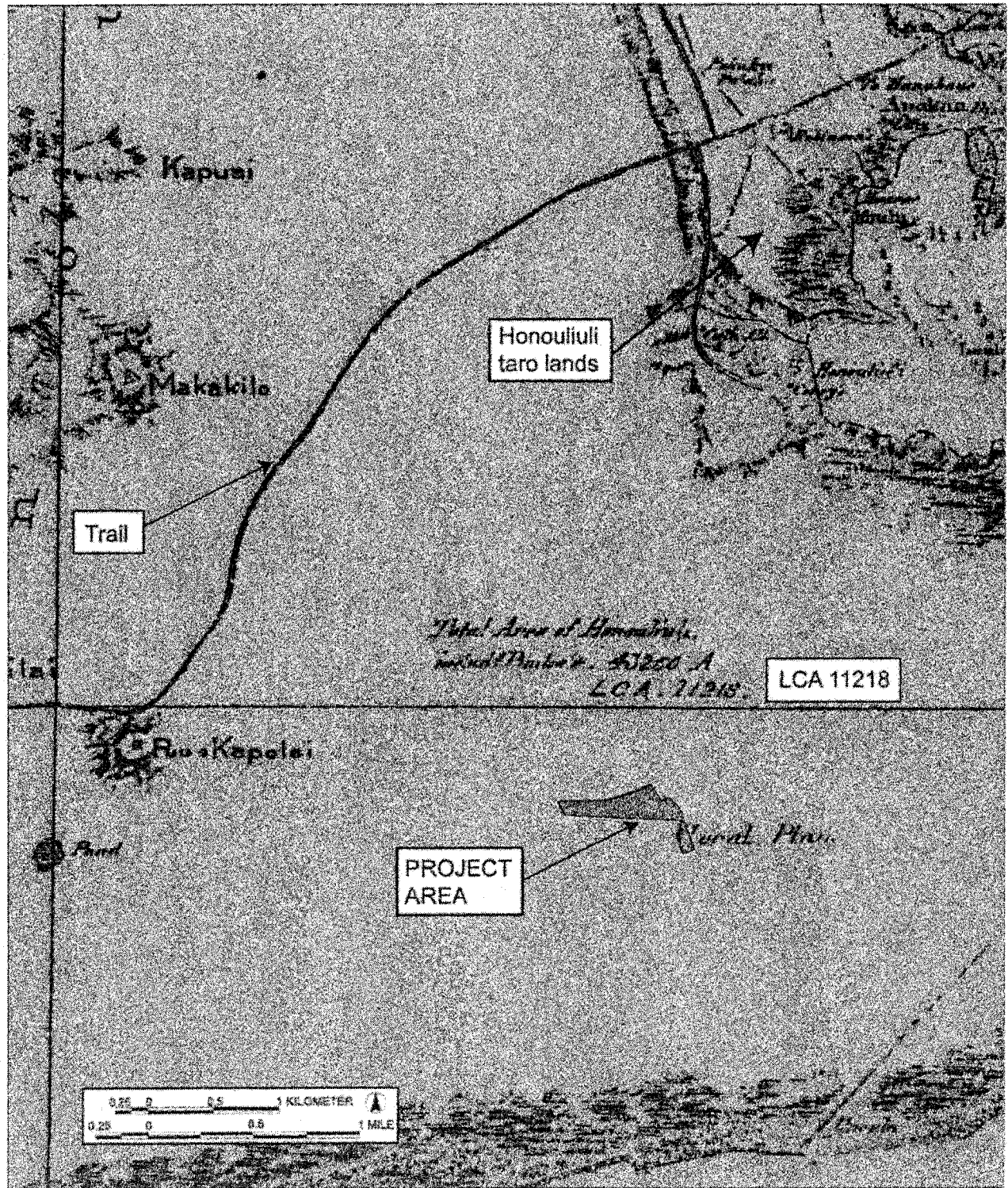


Figure 10. Portion of 1881 Hawaiian Government Survey map by C.J. Lyons, showing project area location within LCA 11218; also note location of Honouliuli Taro Lands adjacent to the West Loch of Pearl Harbor, and trail through 'Ewa passing by Pu'uokapolei

3.3.2 Other Enterprises in Campbell Lands

As noted above, part of Mr. Campbell's lands were also used to grow rice. By 1885, 200 acres in Honouliuli were used for rice and 50 acres were used to grow bananas (article in *Pacific Commercial Advertiser*, August 15, 1885, summarized in Silva 1987:A-12). These rice fields were planted in former taro fields or in undeveloped swamps, such as those near the project area in the former Honouliuli Taro lands. The rice fields in 1882 were described by Frank Damon, during a tour of the area.

. . . Towards evening we reached Honouliuli, where the whole valley is leased to rice planters . . . This was one of the largest rice plantations we visited. Sometimes two or three men only, have a few fields which they cultivate for themselves, and we often too came upon houses where there were eight or ten men working their own land. But the larger plantations are owned by merchants in Honolulu, who have a manager acting for them. . . [Damon 1882:37].

In 1890, Dillingham leased all land below 200 ft to William Castle, who used most of the land for sugar cane, but also leased some lands for rice cultivation, pasture, wood lots, bee-keeping, garden crops, and quarries. Some land above 650 ft was also leased for the cultivation of canaigre, which may be a word used for pineapple (Frierson 1972:15-16).

An additional agricultural trial was conducted in the Honouliuli area for the cultivation of sisal, a plant used to make fibers for rope and other material. Some sisal was planted before 1898 and production continued until the 1920s (Frierson 1972:16). This was grown mainly on the coastal plain of Honouliuli in Kānehili, just *mauka* of Kualaka'i Beach (now Nimitz Beach). An article in the *Paradise of the Pacific* in 1902 described this venture in glowing terms.

. . . The venture was made and a tract of land containing a large percentage of disintegrated coral, in the neighborhood of Ewa Plantation, where nothing else would grow, was chosen for the planting. . . The Hawaiian Fiber Co., which Mr. Turner organized, and of which he is now manager, has 755 acres under fence, two and a half miles of which is stone wall with good gates at convenient places. . . In a large field containing 130 acres, *mauka* of the Oahu Railway & Land Co. track, the first harvest is to be gathered in a few months. . . Out of this section of 130 acres the company has figured on securing 50 tons of clean fiber, for which it is offered eight cents per pound in Honolulu or nine cents per pound in San Francisco . . . [Paradise of the Pacific March 1902:17].

Into the early twentieth century, some Hawaiian families continued to live in Honouliuli and preserve the traditional lifestyle, including at the fishing village of Kualaka'i (see Figure 7 for location of village). One resident, Mrs. Eli Williamson, recalled:

In the Honouliuli area the train stopped among the *kiawe* (algaraboa) trees and *malina* (sisal) thickets. We disembarked with the assorted food bundles and water containers. Some of the Kualaka'i 'ohana (family) met us to help carry the 'ukana (bundles) along a sandstone pathway through the *kiawe* and *malina*. The distance to the frame house near the shore seemed long. When we departed our 'ukana

contained fresh lobsters, *limu* (algae), fish and *i'a malo'o* (dried fish)
[Williamson, in Kelly 1985:160].

3.4 Mid-Nineteenth Century to Present

3.4.1 History of the Oahu Railway and Land Company (OR&L)

In 1886, Campbell and B. F. Dillingham put together the "Great Land Colonization Scheme," which was an attempt to sell Honouliuli land to homesteaders (Thrum 1886:74). This homestead idea failed; two factors for the failure were the lack of water and the other was the distance from 'Ewa to Honolulu. The water problem was solved by the drilling of artesian wells, and Dillingham decided that the area could be used instead for large-scale cultivation (Pagliaro 1987:4). The transportation problem was to be solved by the construction of a railroad, which B. Franklin Dillingham soon began to finance under the company name of the Oahu Railway and Land Company (OR&L).

During the last decade of the nineteenth century, the railroad would reach from Honolulu to Pearl City in 1890, to Wai'anae in 1895, to Waialua Plantation in 1898, and to Kahuku in 1899 (Kuykendall 1967:III, 100). This railroad line eventually ran across the center of the 'Ewa Plain at the lower boundary of the sugar fields. To attract business to his new railroad system, Dillingham subleased all land below 200 ft to William Castle, who in turn sublet the area to the newly-formed Ewa Plantation Company (Frierson 1972:15). Dillingham's Honouliuli lands above 200 ft that were suitable for sugar cane cultivation were sublet to the Oahu Sugar Company (Figure 11). Throughout this time, and continuing into modern times, cattle ranching continued in the area, and Honouliuli Ranch - established by Dillingham was - the "fattening" area for the other ranches (Frierson 1972:15).

Operations at the OR&L began to slow down in the 1920s, when electric streetcars were built for public transportation within the city of Honolulu and automobiles began to be used by families for transportation outside the city (Chiddix and Simpson (2004:185). The build-up to World War II turned this decline around, as the U.S. military utilized the OR&L lines to transport materials to build defense projects around the island. Historians have noted that one of the most serious mistakes made by the Japanese in their 1941 attack on Pearl Harbor was their decision not to bomb the railway infrastructure. Soon after the attack, the OR&L operated 24 hours a day, transporting war materials and troops from Honolulu to the new and expanded army, naval, and air bases. The huge navy base at Pearl Harbor had its own rail lines that connected to the OR&L rail lines.

In August of 1945, the war ended, and so did OR&L's heyday as a military transport line.

She had served her country well and proudly during the war, but operating round-the-clock on what little maintenance could be squeezed in, had taken a prodigious hit on the locomotives and track. Traffic stayed steady for a short time, but soon dropped precipitously as soldiers and sailors went home, military posts were shrunk or razed, and civilians could again get tires, gasoline and new cars [Chiddix and Simpson 2004:257].

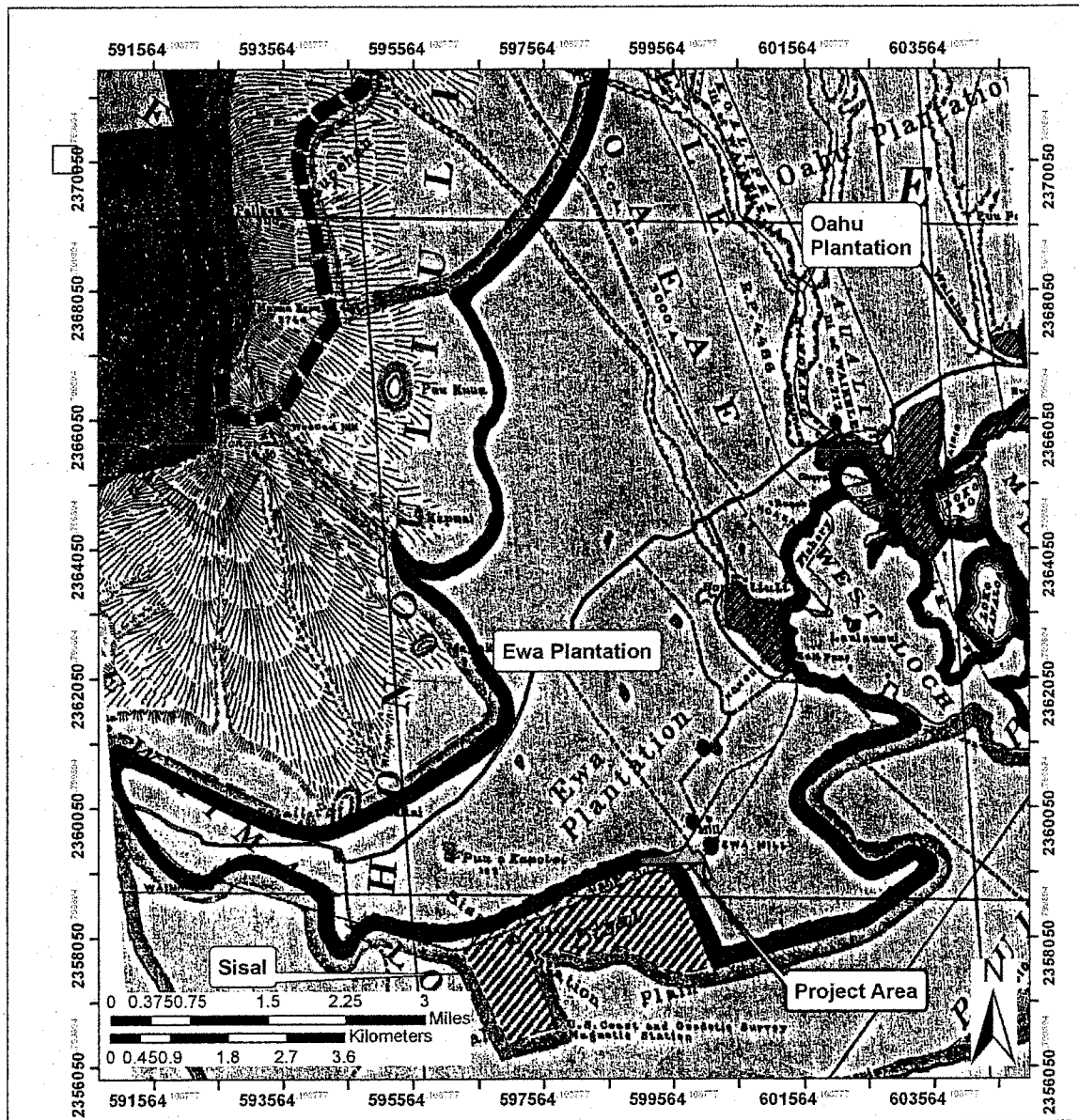


Figure 11. 1902 map showing relationship of Ewa Plantation and the Oahu Sugar Co. plantation; also note location of sisal growing area

There was no choice but to abandon the OR&L main line, and in 1946 Water F. Dillingham, son of B.F. Dillingham, wrote:

The sudden termination of the war with Japan changed not only the character of our transportation, but cut the freight tonnage to a third and the passenger business to a little above the pre-war level. With the increased cost of labor and material and the shrinkage in freight tonnage and passenger travel, it was definite that the road could not be operated as a common carrier. With no prospect of

increased tonnage, and the impossibility of increasing rates against truck competition, your management has applied to the Interstate Commerce for authority to abandon its mainline [Walter Dillingham, cited in Chiddix and Simpson 2004:257].

After the war, most of the 150+ miles of OR&L track were pried up, locomotives were sold to businesses on the US mainland, and railway cars were scrapped. In 1947, the U.S. Navy took over a section of the OR&L track for their own use, to transport bombs, ammunition, and torpedoes from the ammunition magazines at Lualualei, West Loch in Pearl Harbor, and Waikele on OR&L's Wahiawā Branch to Pearl Harbor Naval Base (Treiber 2005:25-26). The track to Waipahu was abandoned in the 1950s, but the line from the magazines in Lualualei to the wharves in West Loch at Pearl Harbor remained open until 1968.

In 1970, the Hawaiian Railway Society was formed to save and restore the remaining Hawaiian railway tracks and stock. The federal government donated the tracks and right-of-way to the State of Hawaii in 1974, and the Society was able to place the Navy's Lualualei-Pearl Harbor track on the National Register of Historic Places on December 1, 1975. The Highway Railway Society has currently restored about 6.5 miles of this track, on which they run weekly tourist train rides from Ewa Station to Nānākuli, pulled by restored OR&L locomotives (Chiddix and Simpson 2004:273). The northern section of the project area is bounded by the right-of-way along a portion of this track; (Chiddix and Simpson 2004:279); however, this portion is not used in the weekly excursions.

3.5 History of the Ewa Plantation Company

3.5.1 Sugar Cane Cultivation

The Ewa Plantation Company (Figure 12) was incorporated in 1890 for sugar cane cultivation. The first crop, 2,849 tons of sugar, was harvested in 1892 at the Ewa Plantation. Ewa was the first all-artesian plantation, and it gave an impressive demonstration of the part artesian wells were to play in the later history of the Hawaiian sugar industry (Kuykendall 1967:III, 69). As a means to generate soil deposition on the coral plain and increase arable land in the lowlands, the Ewa Plantation Company installed ditches running from the lower slopes of the mountain range to the lowlands. When the rainy season began, they plowed ground perpendicular to the slope so that soil would be carried down the drainage ditches into the lower coral plain. After a few years, about 373 acres of coral wasteland were reclaimed in this manner (Immisch 1964). By the 1920s, Ewa Plantation was generating large profits and was the "richest sugar plantation in the world" (*Paradise of the Pacific*, Dec. 1902:19-22, cited in Kelly 1985:171).

Just north of Ewa Plantation was the equally sprawling O'ahu Sugar Company which "covered some 20 square miles . . . ranging in elevation from 10 feet at the Waipio Peninsula . . . the Oahu Sugar Company were described as being "of near desert proportion until water was supplied from drilled artesian wells and the Waiahole Water project" (Condé and Best 1973:313). The Oahu Sugar Company took control of the Ewa Plantation lands in 1970 and continued operations until 1995, when they decided to shut down sugar cane production in the combined plantation area (Dorrance and Morgan 2000:45, 50).

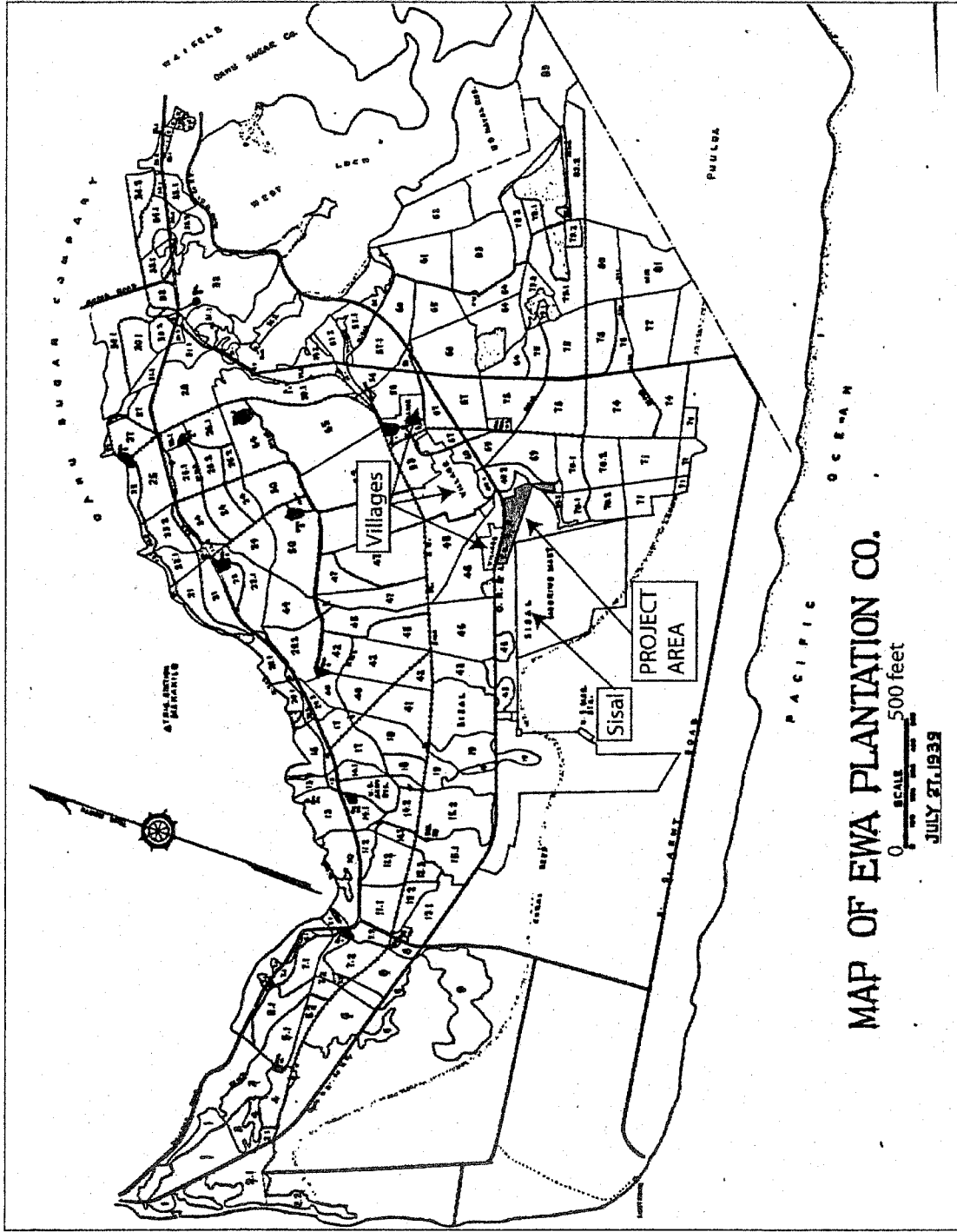


Figure 12. 1939 map of Ewa Plantation Co. lands, showing project area southwest of "Villages" and northeast of "Sisal" growing area

Archaeological Inventory Survey for 'Ewa Industrial Park, O'ahu

TMK: (1) 9-1-069:003

3.5.2 Workers Housing and the 'Ewa Villages

In 1890, construction began on housing for over 500 plantation workers. The project area is located just south (and *makai*) of eight main worker villages surrounding Ewa Mill (from northeast to southwest): Lower Village, Middle Village (also called Korean Village), Fernandez Village, Renton Village, Tenney Village, Mill Village, Varona Village, and "C" Village. Varona Village and "C" Village are adjacent (on the opposite side of the OR&L right-of-way and north of the project area (see Figure 1). On a 1930 USGS map (Figure 13), these "villages" are also shown. Only two are labeled, one as the "Filipino Camp" (now called "Fernandez Village") and a Korean camp (Middle Village) north of Fernandez Village. This map also shows no structures in the project area. A local informant has said that the project area in this time belonged to the railroad, and some structures for the railroad workers were built in the northeast corner of the parcel; however, the parcel does not ever seem to have been used by the Ewa Plantation Company for housing or any other plantation activity.

In 1928, probably the year with the greatest number of workers, the census bureau counted 4,967 people living and associated with the Ewa Plantation. These workers were Japanese, Chinese, Okinawan, Korean, Portuguese, Spanish, Hawaiian, Filipino, and European, who usually lived in separate camps or housing areas. The houses were described by George F. Renton, the plantation manager from 1899 to 1920:

Each of these dwellings is enclosed by a fence and supplied with water. It is pleasant to note the eagerness with which these homes have been taken up, and how much the premises have been improved. This is especially noticeable among the Japanese. . . . At present writing there are 451 dwellings on this estate. These are actual houses exclusive of restaurants, bath houses, cook houses, work shops, schools or churches [cited in Pagliaro 1987:17].

Most of the structures in the Tenney, Renton, and Varona villages were built between 1907 and 1957. The 'Ewa Hongwanji Mission, a Buddhist temple located near Varona and "C" villages and north of the project area, was originally built in 1902. This first building was destroyed by fire in 1943, and a new building was constructed in 1962 (R.M. Towill 1990:4-20). Varona Village was originally built mainly for Filipino workers, while "C" village seems to have been mainly inhabited by Japanese workers (Hammatt et al. 1990b:24).

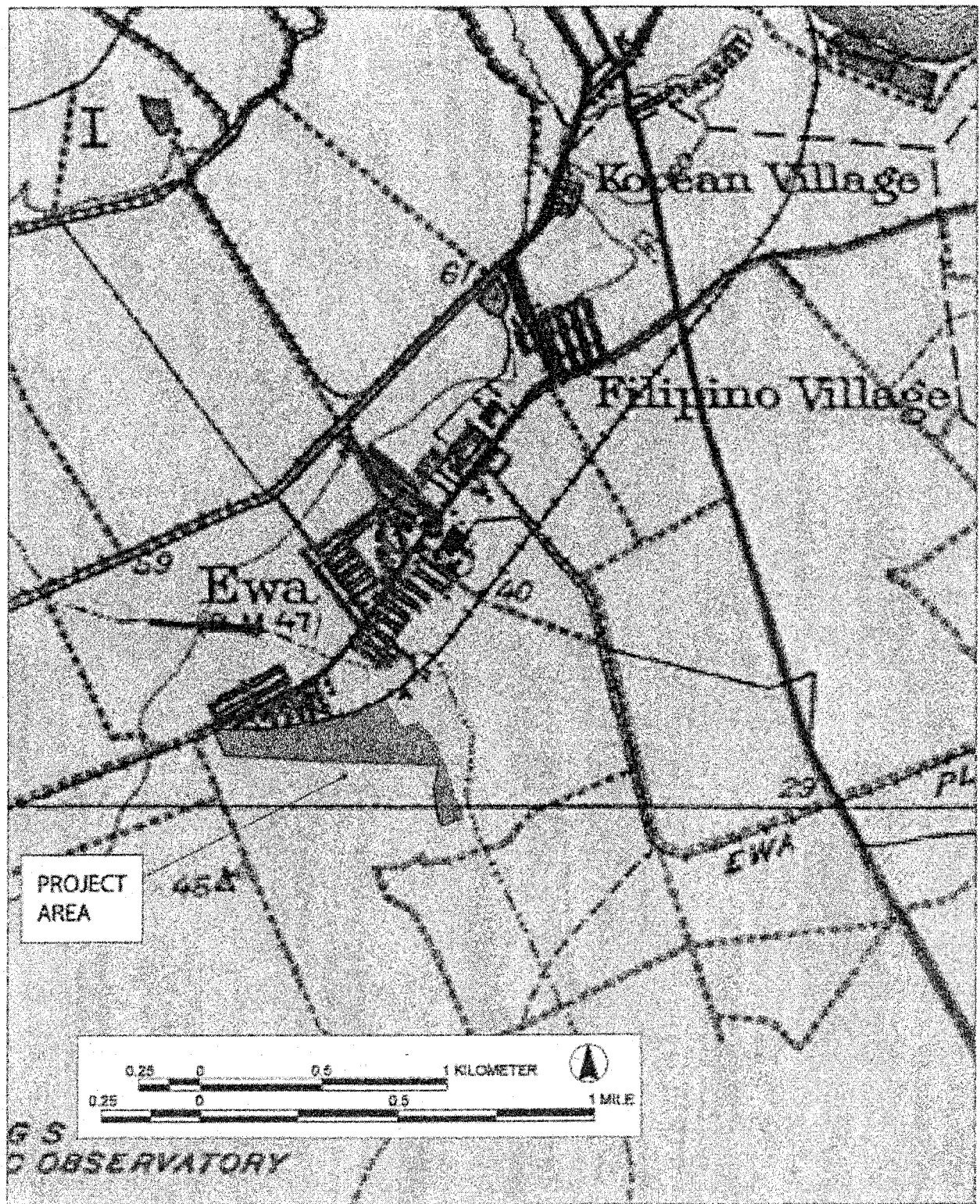


Figure 13. 1930 U.S. Geological Survey map, showing no structures in the project area; note OR&L railroad tracks on the northern boundary of the project area

Section 4 Previous Archaeological Research

4.1 Early Archaeological Surveys

All archaeological projects previously conducted in Honouliuli and Pu'uloa are listed in Table 3. Two archaeological features, a boundary *pōhaku* or rock and a *hōlua*, or sledding site, are recorded only in the Boundary Commission Reports establishing the division lines between the *ahupua'a* of Honouliuli and Hō'ae'ae (to the east). The surveyor wrote of the southern point of this boundary:

In regard to Hoaeae . . . the point of commencement is Pōhaku Palahalaha, a well known rock, now marked by an arrow and the name "Honouliuli" on one side and "Hoaeae" on the other, which I have made the initial point of the survey . . . [Commission on Boundaries, Vol. 1:243].

This rock is shown on the Sterling and Summer map (see Figure 7) as Pōhaku Palaha. In another boundary survey, the *pōhaku* is called a "large, flat rock" (Commission on Boundaries Vol. 1:249), which may indicate the origin of the name from the Hawaiian word *pālaha*, which means "flattened, wide" (Pukui and Elbert 1986:307). As the surveyor continued to walk the Honouliuli/Hō'ae'ae boundary, he marked the northern point of the division as:

The Kamaaaina took me to the corner of Pauhala (?) - Hoaeae and Honouliuli - there is an ancient holua or sledging [*sic*] place near this - which is agreed for the ancient corner. . . [Commission on Boundaries Vol. 1:243].

The earliest attempt to record archaeological remains in Honouliuli Ahupua'a was made by Thrum (1906:46). He reported the existence of a *heiau* located on Pu'uokapolei, west of the present project area. In a second monograph on *heiau*, Thrum (1917) called this *heiau* Palole'i (Kapolei). Emory mapped and photographed these structures in 1933 (field notes), but they were dismantled and destroyed sometime before McAllister's survey of the islands in the 1930s. According to legend, Pu'uokapolei was the location on which Kamapua'a, the pig-god, resided with his grandmother, Kamaunuahihio (McAllister 1933:108).

In his surface survey of the 1930s, archaeologist J. Gilbert McAllister recorded the specific locations of important sites, and the general locations of less important sites (at least at Honouliuli). McAllister recorded 14 specific sites at Honouliuli, numbered Sites 133-146 (McAllister 1933:107-108) (see Figure 7).

Site 146, which McAllister used to denote the entire 'Ewa coral plains, is the only one of these sites in the project area. This "site," is more of a general area, covering all the coastal flatlands of 'Ewa. McAllister described the site as:

Site 146. 'Ewa coral plains, throughout which are the remains of many sites. The great extent of old stone walls, particularly near the Pu'uloa Salt Works, belongs to the ranching period of about 75 years ago [circa 1858]. It is probable that the holes and pits in the coral were formerly used by the Hawaiians. Frequently the soil on the floor of larger pits was used for cultivation, and even today one comes

upon banana and Hawaiian sugar cane still growing in them. They afford shelter and protection, but I doubt if previous to the time of Cook [1778] there was ever a large population here [McAllister 1933:109].

4.2 Previous Archaeological Work near Honouliuli town

Beginning in the late 1970s, archaeological research has been conducted in Honouliuli in the general vicinity of the project area (Figure 14). Work has focused on the West Loch Estates (northeast of the current project area), Pearl Harbor Naval Magazine (NAVMAG) – West Loch (east of the current project area), the 'Ewa Gentry project and 'Ewa Gentry Makai (south of the current project area), and the 'Ewa Villages (north of the project area).

4.2.1 West Loch Estates

An archaeological reconnaissance survey (Rosendahl 1987) was conducted in association with the development of the 232-acre "West Loch Estates" Residential Increments I and II (including golf course and parks) project, which lies to the east of the present project area, in the section of the Honouliuli Taro lands adjacent to Pearl Harbor. This project covered portions of the old town of Honouliuli, the focus of population in the early historic period (and possibly earlier). This study identified a modern cemetery (Site 3319) with a remnant pre-Contact deposit, two historic sites of minimal integrity with some possible pre-Contact deposits (Site 3318 and 3320) at Kapapahu Point, a significant pre-Contact deposit with trash pits, fire pits and at least one human burial (Site 3321), a buried fishpond (Site 3322), an historic fishpond (Site 3323) built in the 1890s during the construction of the OR&L railroad, and a buried pond field system (Site 3324) (Rosendahl 1987:7, 9). It was noted that some artifacts "indicate the possibility of pre-1900 occupation" (Rosendahl. 1987:8). As noted in the final reconnaissance survey report (Dicks et al. 1987:28) for the surface and subsurface reconnaissance survey, an effort was also made to relocate McAllister's Site 139, Kalanamaihihi Ko'a (fishing shrine). The archaeologists found a small boathouse and dock in the area and concluded that the shrine had been destroyed since McAllister's survey in the 1930s.

A total of 21 radiocarbon dates were determined; at Site 3321, the cultural deposit, the age of a lower cultural deposit was dated to A.D. 540-880, while an upper deposit was dated to A.D. 1327-1640. For the buried fishpond (Site 3322), ages ranged from A.D. 70-610 in the lowest layer to A.D. 1160-1410 in the upper layer. For the buried pond field systems (Site 3324), ages ranged from B.C. 400-A.D. 240 (interpreted as the original surface of the upper valley) in the lowest layers to A.D. 1430-1952 in the upper layers of upper valley area and A.D. 1020-1280 in lower valley area. In summary, the authors (Dicks et al. 1987:78-79) concluded that agricultural use of the Honouliuli Stream floodplain for pondfield cultivation of taro may have begun in the lower valley segment as early as A.D. 1000, while cultivation of the upper valley pondfields may have begun as early as the thirteenth and fourteenth centuries. Site 3321 in the upper valley may have been a habitation locus established as early as the mid-sixth to mid-ninth century (Wolforth and Wulzen 1997).

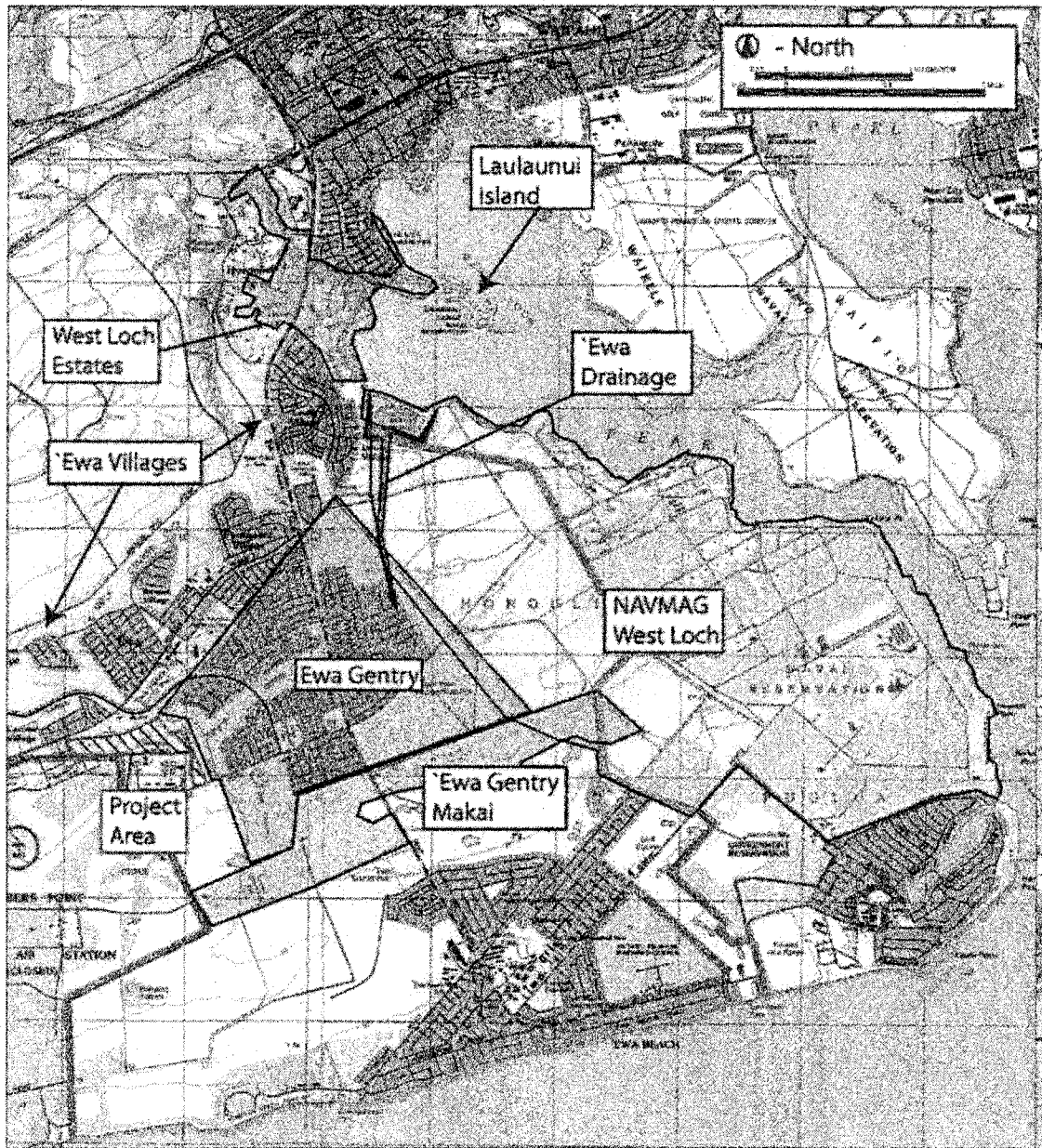


Figure 14. U.S. Geological Survey topographic map, showing previous archaeological survey areas near the current project area

Table 2. Summary of previous archaeological work near the project area

Reference	Nature of Study	Location	Findings
McAllister 1933	Archaeological Survey	Island-wide	Site 146. 'Ewa coral plains; sinkholes and ranching walls
Rosendahl 1987; Dicks et al. 1987	Reconnaissance Survey with subsurface testing	West Loch Estates	A modern cemetery (Site 3319) with a pre-Contact deposit, two historic sites with pre-Contact deposits (Site 3318, 3320), a pre-Contact deposit with a burial (Site 3321), a buried fishpond (Site 3322), an 1890s fishpond (Site 3323), and a buried pond field system (Site 3324)
Bath 1989	Burial Find	West Loch	One inadvertent burial found at Ho'ae'ae Point (Site 4816)
Sinoto 1978	Reconnaissance Survey	NAVMAG-West Loch	Ten burials, at least some historic, were found in a sinkhole used as a crypt
Davis & Burchard 1991	Inventory Survey	NAVMAG-West Loch	No sites found, probably due to extensive ground disturbance.
Kennedy et al. 1992	Inventory Survey with subsurface testing	NAVMAG-West Loch	Recorded 25 sites associated with ranching, military training, and modern quarrying
Landrum et al. 1997	Overview Study	NAVMAG-West Loch	Overview of previous archaeological work at West Loch
Jensen & Head 1997	Reconnaissance Survey	NAVMAG-West Loch	Seven military features and one cave with a blocked entrance were found in the Outleased Area
Corbin et al. 1996	Reconnaissance Survey	Laulaului Island	Noted Laulaunui Fishpond (McAllister's Site 140) and four concrete structures, probably military
Hammatt et al. 1990b	Reconnaissance Survey	'Ewa Villages	No pre-contact surface features were noted.
Spear 1996	Reconnaissance Survey	West of Tenney & Varona Villages	No pre-contact surface features were noted.
Kennedy 1988	Reconnaissance Survey	'Ewa Gentry Project	No-pre-contact surface features found. The OR&L railroad bed (Site 9714) formed the <i>mauka</i> boundary of the project area.
Davis 1988	Subsurface Excavation	'Ewa Gentry Project	No pre-contact subsurface features were noted.
Pantaleo & Sinoto 1993	Inventory Survey	'Ewa Gentry Off-Site Drainage System	A portion of the OR&L railroad bed (Site 9714) was found.
McIntosh & Cleghorn 2003	Archaeological Survey	'Ewa Gentry Makai	No pre-contact surface features were noted.

In 1989, a burial was found on Hō'ae'ae Point (formerly called Kapapahu Point), when someone was digging under a mango tree on a residential property. There is no follow-up report (Bath 1989) to whether the bones were left in place or disinterred. The burial was given the site designation 50-80-13-4816.

4.2.2 NAVMAG – West Loch

In 1978, Sinoto conducted an archaeological reconnaissance survey on a 32-acre portion of NAVMAG-West Loch. A sinkhole 200 m inland and northwest of 'Oki'okirolepe Fishpond was found, containing ten human burials (Site 50-80-13-2310). The historic artifacts found in the pit, indicated that the pit was probably used by the Chinese in the historic period as a family crypt (Sinoto 1978).

Davis and Burchard (1991) conducted an archaeological inventory survey of a 36-acre lot for a proposed housing area in the Pu'uloa portion of NAVMAG-West Loch in 1991. No archaeological sites were found. They concluded that extensive alteration to the landscape due to military land disturbance had erased all surface traces of pre-Contact habitation.

In 1992, a crew from Archaeological Consultants of Hawai'i, Inc. (ARCH) conducted an archaeological inventory survey with subsurface testing, and later data recovery at the proposed Pu'uloa Golf Course (Kennedy et al. 1992). A total of 72 sites were identified, 47 from the pre-Contact/early historic period and 25 sites associated with ranching, military training, and modern quarrying. Radiocarbon dates of these habitation, agricultural, and ceremonial sites indicate that traditional Hawaiian use extended from A.D. 1090 to 1695.

An overview survey of the NAVMAG Lualualei was completed by Ogden Environmental and Energy Services in 1997 (Landrum et al. 1997). A total of ten sites had been previously recorded during the West Loch project area, three in the Honouliuli section, one within Pearl Harbor (Site 140, Laulaunui Island), five on Waipi'o peninsula, one in both (salt works), and one encompassing all lands (Pearl Harbor Navy Base). In Honouliuli, the sites were Site 141, Kaihuopala'ai (West Loch), Site 142, Loko Pamoku or Kapamuku, Site 143, 'Oki'okirolepe Fishpond, and salt works at Honouliuli (no site designation). NAVMAG-West Loch is considered part of the Pearl Harbor Navy Base (Site 50-80-13-9992) due to its importance during World War II. The site was listed as a National Historic Landmark in 1966, on the National Register of Historic Places (NRHP) in 1966, on the State Inventory of Historic Places (SIHP), in 1971, and on the State Register of Historic Places in 1971 (Landrum et al. 1997:160).

In 1996, a crew from Paul H. Rosendahl, Ph.D., Inc. (PHRI) completed a Phase I archaeological reconnaissance survey of the 1,483 acres of land at the U.S. Naval Magazine – West Loch Branch (Jensen and Head 1997). This survey covered the southern section of Waipi'o peninsula on the east side of West Loch, Laulaunui Island, the Naval Reservation on the west side of West Loch, and the West Loch Outleased Cultivated Lands, which included the National Wildlife Refuge. Only 25% of the outleased lands were actually surveyed. The PHRI crew found that most of the outleased area had been bulldozed for sugarcane cultivation. Only a small strip adjacent to West Loch was unmodified. In the West Loch Outleased Lands, eight features were recorded; all but one was associated with military use of the area. The seven military sites consisted of six concrete slabs (Sites 50-80-13-5040, 5080, 5081, 5133, 5134), a metal container (5080), and a pressure tank (5133). The one non-military site (4971) was a cave with a partially

blocked (blocked with roof fall) entrance that the crew members believed should be investigated in the future to see if it at one time was used as a pre-Contact or historic burial site (Jensen and Head 1997:85).

In 1996, a field reconnaissance of Laulaunui Island and fishpond was conducted by the State Historic Preservation Division (Corbin et al. 1996) to determine if restoration of the fishpond was possible and if the site would be a good candidate to be used as an educational tool. The crew simply walked to the island from the West Loch Waterfront Park; water depth varied from one to four feet. Five concrete structures, probably built by the military, were observed. The fishpond was surrounded by mangroves and was silted in; portions of a coral wall (about 500 ft long) around the pond were still intact, and a concrete gate allowed water to circulate into the pond.

4.2.3 'Ewa Villages

In 1990, CSH (Hammatt et al. 1990b) conducted an archaeological reconnaissance survey of the 616-acre 'Ewa Villages project area, which is adjacent to the northern border of the current project area. The project area included three extant plantation villages (Renton Village, Tenney Village, and Varona Village), the sites of three former plantation villages (C Village, Mill Village, and Middle Village), and several other sites associated with the 'Ewa Plantation infrastructure, (the Plantation Cemetery, the 'Ewa Japanese School, 'Ewa Depot, the site of a previous Buddhist temple burned down in WWII, and a former reservoir site), and fields then under sugar cane cultivation. The surface survey of the land found no evidence of any prehistoric features within the project area and concluded that no further archaeological research in association with concerns for Hawaiian prehistory was necessary. However, because of the historic preservation concern 'Ewa Villages has merited, further documentation of some of the ruined historic sites was recommended.

In 1996, Scientific Consultant Services (Spear 1996) conducted an archaeological survey in an area west of the Tenney and Varona plantation villages and north of the Honouliuli Treatment Plant. No archaeological sites were identified.

The northeast boundary of the project area (outside the fenced area) is the alignment of the O'ahu Railroad and Land Company (O.R.&L) right-of-Way. This railroad bed, from the intersection with Fort Weaver Road to the intersection of Farrington Highway and Lualualei Road in Nānākuli is currently listed on the National Register of Historic Places (Site 50-80-12-9714).

4.2.4 'Ewa Gentry Project

In the initial reconnaissance (Kennedy 1988) of the 1,016 acre 'Ewa Gentry survey area, no surface evidence of potentially significant pre-Contact remains was found. The old OR&L railroad bed/right of way (Site 50-80-12-9714) did form a portion of the *mauka* boundary. According to historic maps, a Filipino Camp for sugarcane workers once existed near the intersection of the OR&L bed and a cane road near Ft. Weaver Road, but the archaeologists did not find any surface remains for this camp.

A subsequent subsurface exploration was undertaken. Eighteen backhoe trenches were excavated; however, "no evidence of past in situ cultural activity was found anywhere in the Ewa

Gentry project area" (Davis 1988). The archaeologists found that soil was only about 1 meter deep over a coral substrate, and that their project area was "apparently situated on an ancient upper rim of Hono'uli'uli Valley" (Davis 1988:4).

An inventory survey was conducted in 1993 by Aki Sinoto Consulting (ASC) (Pantaleo and Sinoto 1993) for the 'Ewa Gentry Off-Site Drainage System. This proposed drainage project area is a narrow strip that extends along the western boundary of NAVMAG West Loch. An 1897 map of Pearl Harbor indicated that the OR&L railroad, salt pans, and a fishpond were within this project area; only the railroad bed was found during the ASC survey. Iron flumes and concrete culverts (one with an inscribed date of July 1935) used for sugarcane irrigation were found bulldozed to the edge of the sugar cane fields near the drop-off to the shoreline of Pearl Harbor. These were not considered historically significant due to the absence of structural and locational integrity. No further archaeological work was recommended for this project prior to commencement of construction of the drainage system.

In 2003, Pacific Legacy (McIntosh and Cleghorn 2003) conducted an archaeological survey of the proposed 'Ewa Gentry Makai Development project area, which is adjacent to the southern (*makai*) boundary of the 'Ewa Gentry project area for the 1988 surface and subsurface inventory surveys (Kennedy 1988; Davis 1988). No surface pre-contact features were noted.

4.3 Background Summary and Predictive Model

4.3.1 Honouliuli Settlement Patterns

The *ahupua'a* of Honouliuli is the largest traditional land unit on the island of O'ahu. Honouliuli includes all the land from the western boundary of Pearl Harbor (West Loch) westward to the 'Ewa/Wai'anae District Boundary with the exception of the west side of the harbor entrance, which is in the *ahupua'a* of Pu'uloa (the 'Ewa Beach/Iroquois Point area). This comprises approximately 12 miles of open coastline from One'ula westward to Pili O Kahe. The *ahupua'a* extends *mauka* (almost pie-shaped) from West Loch nearly to Schofield Barracks, and the western boundary is the Wai'anae Mountain crest running *makai* to the east ridge of Nānākuli Valley.

Not only is there a long coastline fronting the normally calm waters of leeward O'ahu, but also there are also four miles of waterfront along West Loch. The land immediately *mauka* of the Pacific coast consists of a flat karstic raised limestone reef forming a level nearly featureless "desert" plain marked in pre-Contact times (previous to alluviation caused by sugar cultivation) by a thin or non-existent soil mantle. The microtopography is notable in containing countless sinkholes in some areas caused by chemical weathering (dissolution) of the limestone shelf.

Along the eastern flank of the Wai'anae Mountains, numerous gulches have contributed to the alluvial deposits over the coastal limestone shelf. The largest of the gulches is Honouliuli Gulch, which drains into West Loch. The gulches are generally steep-sided in the uplands and generally of a high gradient until they emerge onto the flat 'Ewa plain. The alluvium they have carried has spread out in delta fashion over the *mauka* portions of the plain, which comprises a dramatic depositional environment at the stream gradient change. These gulches are generally dry, but during seasonal Kona storms carry immense quantities of runoff onto the plain and into the ocean. As typical drainages in arid slopes, they are either raging uncontrollably, or are dry

and, as such, do not form stable water sources for traditional agriculture in their upper reaches. The Honouliuli gulches generally do not have valleys suitable for extensive irrigated agriculture; however, this lack is more than compensated for by the rich watered lowlands near West Loch.

Honouliuli Ahupua'a, as a traditional land unit, had abundant and varied resources available for exploitation by early Hawaiians. The "karstic desert" and marginal characterization of the limestone plain, which is the most readily visible terrain, does not do justice to the *ahupua'a* as a whole. The richness of this land unit is marked by the following available resources:

- 1) 12 miles of coastline with continuous shallow fringing reef, which offered rich marine resources.
- 2) Four miles of frontage on the waters of West Loch, which offered extensive fisheries (mullet, *awa*, shellfish), as well as frontage suitable for development of fishponds.
- 3) The lower portion of Honouliuli Valley in the 'Ewa plain offered rich level alluvial soils with plentiful water for irrigation from the stream as well as abundant springs. This land would have stretched well up the valley.
- 4) A broad limestone plain, which because of innumerable limestone sinkholes, offered a nesting home for a large population of avifauna. This resource may have been one of the early attractions to human settlement.
- 5) An extensive upland forest zone extending as much as 12 miles inland from the edge to the coastal plain. As Handy and Handy (1972:469) have pointed out, the forest was much more distant from the lowlands here than it was on the windward side, but on the leeward side was more extensive. Much of the upper reaches of the *ahupua'a* would have had species-diverse forest with *kukui*, *ōhia*, sandalwood, *hau*, *ti*, banana, etc.

Within this natural setting, archaeological and traditional sources show a general pattern of three main areas of settlement within the *ahupua'a*: a coastal zone, the Honouliuli taro lands, and inland settlement at Pu'u Ku'ua.

4.3.2 The Coastal Zone - Kalaeloa (Barbers Point), Ko'ōlina (West Beach)

Kalaeloa (Barbers Point)

Archaeological research at Barbers Point has focused on the areas in and around the newly constructed Deep Draft Harbor (Barrera 1975; Davis and Griffin 1978; Hammatt and Folk 1981, McDermott et al. 2000). Series of small clustered shelters, enclosures and platforms show limited but recurrent use at the shoreline zone for marine-oriented exploitation. This settlement covers much of the shoreline with more concentrated features around small marshes and wet sinks. Immediately behind the shoreline, under a linear dune deposit, is a buried cultural layer believed to contain some of the earliest habitation evidence in the area.

The attraction of the area to early Hawaiians was the plentiful and easily exploited bird population. Particular evidence for taking of petrels occurs at Site -2763 (Hammatt and Folk 1981:213). Initial heavy exploitation of nesting seabirds and other species in conjunction with habitat destruction probably led to early extinction. There is some indication of limited

agriculture in mulched sinkholes and limited soil areas. Considering rainfall, this activity would have been limited, but probably involved tree crops and roots (sweet potatoes). The archaeological content of the sites indicates a major focus on marine resources.

Davis and Griffin (1978) distinguish functional classes of sites, based on surface area size and argues that the Barbers Point settlement consists of functionally integrated multi-household residence groups. Density contours of midden (by weight) and artifacts (by numbers) plotted for residence sites by Hammatt and Folk (1981) generally indicate narrowly defined spatial foci of discard, possibly indicating continuous use, or at least with no refurbishing or additions to the structures through time (Hammatt and Folk 1981). The focus is small habitation sites, typically lacking the full range of features found in large permanent residence complexes such as high platforms, complex enclosures, and ceremonial sites.

Ko'ōlina (West Beach)

There are three available studies on the Ko'ōlina project area (Davis et al. 1986a; Davis et al. 1986b; and Davis and Haun 1987).

Davis documents around 180 component features at 48 sites and site complexes consisting of habitation sites, gardening areas, and human burials. Chronologically the occupation covers the entire span of Hawaiian settlement, in what Davis and Haun describe as "one of the longest local sequences in Hawaiian prehistory" (Davis and Haun 1987:37). The earliest part of the sequence relates to the discovery of an inland marsh, and early dates were obtained for the beachfront site and an inland rock shelter.

4.3.3 Honouliuli Taro Lands

Centered around the west side of Pearl Harbor at Honouliuli Stream and its broad outlet into the West Loch are the rich irrigated lands of the 'ili of Honouliuli, which give the *ahupua'a* its name. The major archaeological reference to this area is Dicks et al. (1987) who documented remnants of a once-widespread wetland system (*lo'i* and fishponds) as well as dryland cultivation of the adjacent slopes. The current study area is adjacent (on the eastern project boundary) to this environmental zone.

The area bordering West Loch was clearly a major focus of population within the Hawaiian Islands, and this was a logical response to the abundance of fish and shellfish resources in close proximity to a wide expanse of well-irrigated bottomland suitable for wetland taro cultivation. The earliest detailed map (Malden 1825; see Figure 8) shows all the roads of southwest O'ahu coalescing and descending the *pali* (cliff) as they funnel into the locality (i.e. Honouliuli Village). Dicks et al. (1987:78-79) conclude, on the basis of 19 carbon isotope dates and 3 volcanic glass dates that "Agricultural use of the area spans over 1,000 years." Undoubtedly, Honouliuli was a locus of habitation for thousands of Hawaiians. Pre-Contact population estimates are a matter of some debate but it is worth pointing out that in the earliest mission census (Schmitt 1973:19) 1831-1832, the land (*'āina*) of Honouliuli contained 1026 men, women, and children. It is not clear whether this population relates to Honouliuli Village or the entire *ahupua'a*, but the village probably contained the vast majority of the district's population. The nature of the reported population structure for Honouliuli (less than 20% children under 12 years of age) and the fact that the population decreased more than 15% in the next 4 years (Schmitt 1973:22) suggests that the prehistoric population of Honouliuli Village may well have

been significantly greater than it was in 1831-1832. A conservative estimate would be that tens of thousands of Hawaiians lived and died at Honouliuli Village.

4.3.4 Pu'uku'ua: Inland Settlement

Documentation of inland settlement in Honouliuli Ahupua'a is more problematic in that there are relatively few documented archaeological sources. However, it is probable that the area around Pu'uku'ua, on the east side of the Wai'anae Ridge seven miles inland of the coast, was a Hawaiian place of some importance.

In 1899, Hawaiian Newspaper *Ka Loea Kālai'āina* relates a story of Pu'uku'ua as "a place where chiefs lived in ancient times" and a "battle field," "thickly populated." The article summarizes:

There were two important things concerning this place. (1) This place was entirely deserted and left uninhabited and it seems that this happened before the coming of righteousness to Hawai'i Nei. Not an inhabitant is left. (2) The descendants of the people of this place were so mixed that they were all of one class. Here the gods became tired and returned to Kahiki [*Ka Loea Kālai'āina*, July 8, 1899, translated in Sterling and Summers 1978:33].

McAllister recorded three sites in this area, two *heiau* (134, 137) (Pu'u Kuina and Pu'uku'ua, both destroyed) and a series of enclosures in Kukuilua which he called "kuleana sites" (McAllister 1933). On the opposite side of the Wai'anae range, along the trail to Pōhākea Pass, Cordy (2002:36) states "Kākuihewa was said to have built (or rebuilt) Nōi'ula, a *pō'okanaka heiau* (1,300 square meters) in Hālona in upper Lualualei, along the trail to Pōhākea Pass leading into 'Ewa, ca. A.D. 1640-1660" (Cordy 2002:36). There is no direct archaeological evidence available to the authors' knowledge that intensive Hawaiian settlement occurred here, but it is considered as a place of high probability, based on the above indications. John Papa 'Ī'ī (1959) described a journey that Liholiho took which led him and an entourage through inland Honouliuli and over Pōhākea Pass. Geographically, the area receives sufficient quantities of water and would have had abundant locally available forest resources.

4.3.5 Summary of Pre-Contact Use

On the basis of archaeological studies, informed by historic records, the following may be concluded:

- 1) There are three areas of Hawaiian settlement in the *ahupua'a*; two are well-documented and one is problematic:
 - a. the extensive limestone plain with recurrent use habitations for fishermen and gatherers and sometime gardeners;
 - b. the rich cultivated lands of Honouliuli 'ili for extensive wetland taro and clearly the *ahupua'a* population center; and,
 - c. the uplands around Pu'uku'ua associated with *kauwā* residence but probably used for agriculture and forest resources.

- 2) Honouliuli is designed as a unit to contain all the geographic elements of a typical Hawaiian valley *ahupua'a*, except they are arranged geomorphically in an atypical relationship. The *ahupua'a* is not organized around a single drainage network but shares the west portions of Waikele drainage in its upper reaches. A typical and highly advantageous characteristic for human subsistence is included in a vast coastline and fringing reef, an extensive limestone plain which would support only limited agriculture but would be excellent for bird catching in early times, and a huge expanse of sloping forest land. The richest forestland for foraging for wood, birds, feathers, etc. would have been the east slope of the Wai'anae Range. The surveys by Bordner and Silva (1983) and Hammatt and Shideler (1999) at Waimānalo Gulch indicated no evidence of Hawaiian occupation, but the gulch has been impacted in modern times.
- 3) The *makai* slope was not a major thoroughfare. We can see some very limited evidence of part-time agriculture in and around gulches and two foci of sparse habitation. The first is limited to *makai* portions of gulches and lava flats. This habitation is considered a *mauka* component or continuing of the Ko'ōlina coastal settlement rather than an independent focus. The second focus, separated from the first by a barren zone, is generally above the 800-foot elevation. This *mauka* habitation which could have been supported by seasonal dry land planting and forest foraging may be the lower portion of a thinly scattered, but widespread zone of settlement which stretches eastward and northeast along the east Wai'anae Range slopes and may increase in intensity along the more watered lands forming the *mauka* western boundary of Honouliuli.
- 4) There is to date no archaeological evidence of high status residence in Honouliuli. Large residential structures are not present along the Pacific shoreline where they would be expected. The late prehistoric occurrence of chiefs' houses is not apparent, perhaps because the ocean shoreline, although rich in marine resources, is uninviting for sport and unsuitable for fishponds. The chiefly focus of 'Ewa District was Waipi'o. Whatever activities of this class occurred in Honouliuli would have been in or near the rich lands fronting West Loch (the *'ili* of Honouliuli). Concerning status associations with Honouliuli, it is interesting to note the connection of the Pu'uku'ua settlement with slaves (*kauwā*), the lowest class of Hawaiians (Sterling and Summers 1978:33).
- 5) The focus of population and agriculture within the *ahupua'a* of Honouliuli was the *'ili* of Honouliuli. There is good reason to assume, given the lack of intensive agricultural resources in other prehistoric times, all other habitation zones were economically and socially co-dependent.

4.3.6 Archaeological/Paleontological Sinkholes in the Ewa Karst

The coastal portion of 'Ewa is within a karst formed on reef deposits formed during high stands of sea level. Figure 15 shows the mapped extent of surface-exposed 'Ewa Karst. The karst undoubtedly extends further north, under alluvium (Halliday 1998). The surface-exposed karst area is generally below the 40 ft contour line, and contains numerous sinkholes. The most complete study of the sinkholes of the 'Ewa Plain was conducted as part of several surveys of the Barbers Point Naval Air Station. In this project area, numerous sinkholes contained fossil bird

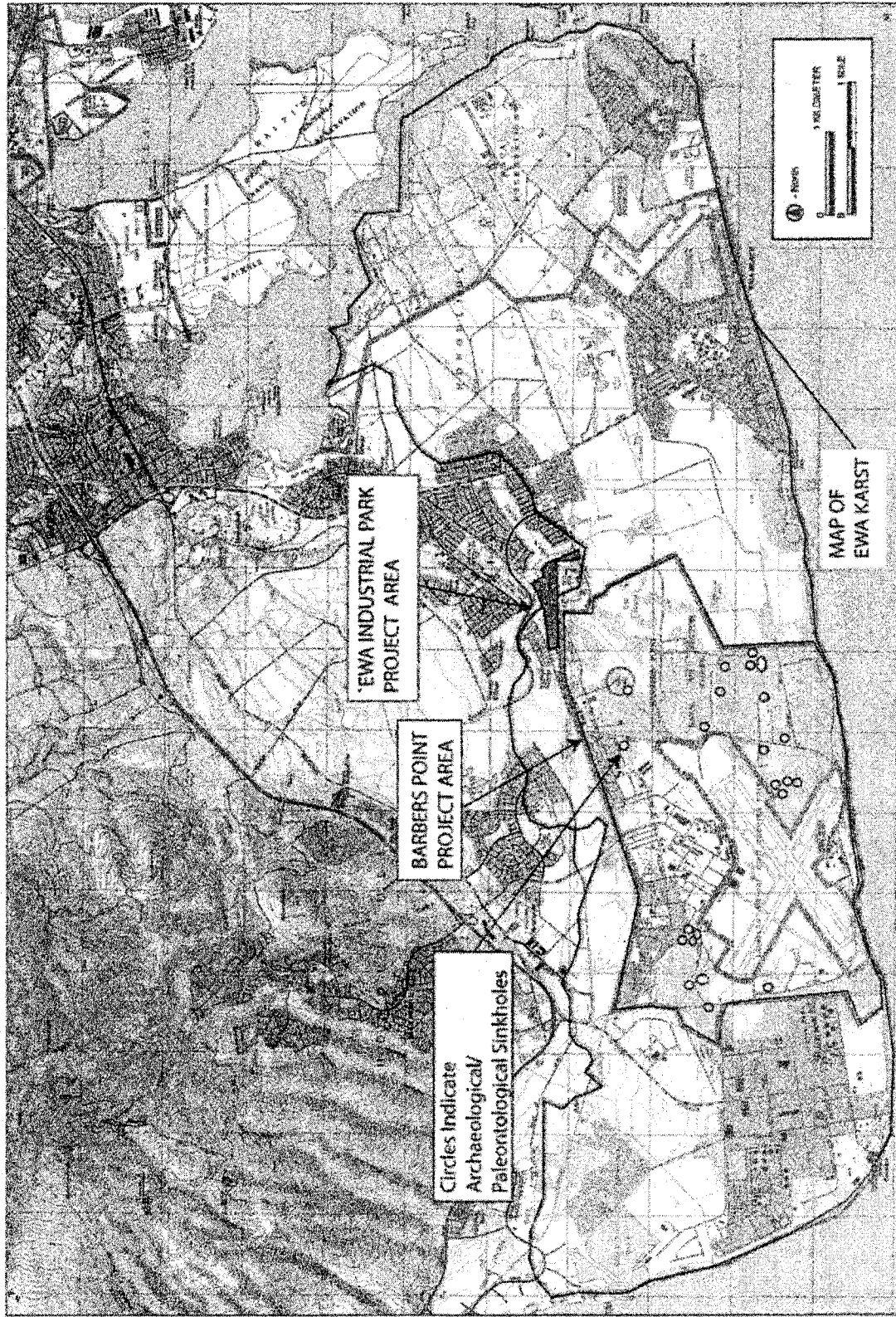


Figure 15. U.S. Geological Survey map, showing mapped extent of 'Ewa Karst in relation to the current project area (map from Halliday 1999)

bone and other paleontological remains. In the pre-contact period, these sinkholes were modified; the larger once used for temporary habitation, and the smaller ones used for storage, agriculture, and for burials. In the historic period, these sinkholes were often filled with trash. Figure 15 illustrates the location of the archaeological and/or paleontological sites with sinkholes at Barbers Point; many of the sites consist of a complex of features, including 1-20 sinkholes at each site. Most sites with sinkholes are clustered in the northwest and southeast corners of the Naval Station.

Only a few sinkholes were located in the northeast corner, near the current project area. The nearest site (Site 3721) to the current project area is approximately one kilometer to the southwest, and consists of only one large sinkhole. Thus, the number and density of sinkholes is scarce in this area closest to the current project area. As can be seen by the Ewa Karst map, the current project area is located at the interface between the lowland karst area, and the upper alluvial terrain (Tuggle and Tuggle 1997:9). Based on the map and the sinkhole study at Barbers Point, it might be expected that no more than one or two sinkholes would be found during a surface survey of this western section.

4.3.7 Summary of Pre-Contact Use in the Project Area

The project area is not located in any of the three foci for pre-contact Hawaiian habitation and agriculture. It is located on the arid limestone 'Ewa Plain, which was crossed by fisherman to travel from inland areas or from the cross-*ahupua'a* trail of southwestern O'ahu to the coastline. The project area is located between two *mauka-makai* trails and thus may contain evidence for pre-contact and early post-contact temporary habitations, trail markers, or other archaeological features.

4.3.8 Summary of Post-Contact Use in the Project Area

Based on historic background research, historic maps, and the preliminary consultation process (see Table 1), the project area was not used by the Ewa Plantation for cultivation or as a worker residential village. The northeastern corner of the project area was used to house some OR&L railroad workers in the early to mid-twentieth century. Later the land was leased for pig farms or as cattle pasture, and local residents used the area for dove-hunting. There may have been some military use of the project area for training, since one informant stated that he had found shell casings on the project area, and another resident stated that the military had some anti-aircraft guns south of the project area. In recent years, the project area has been used as a livestock pasture, for chicken coops, and for hire to private parties.

Section 5 Results of Fieldwork

5.1 Survey Findings

The pedestrian survey of the project area, was conducted on August 4, 2006 by three Cultural Surveys Hawai'i staff archaeologists, Constance R. O'Hare, B.A., Jennifer Olson, B.A., and Kehaulani Souza, B.A., under the general direction of Hallett H. Hammatt, Ph.D. The project area was inspected on foot by parallel pedestrian sweeps.

The project area is entirely bounded by a chain-link fence. The OR&L railroad tracks are outside the project area on the other side of the fence. The western portion of the project area (and a portion of the eastern section) is open, with livestock pastures and paddocks, large fenced-areas of caged roosters, and houses and out-buildings (Figure 16). All surface features are associated with this modern agricultural use. The central section of the project area has been extensively cleared of all vegetation and large rocks. It is this area that is leased to private parties (such as for graduation parties, over-night scout troops, and the bon dance). Several large trees have been left, and these usually have piles or rings of boulders around them, which are probably used by parties and campers (Figure 17). The western section is generally covered by 4-6 foot high *kiawe* and 2-foot high prickly weeds. Everywhere, there are large piles of rocks, trash and beer bottle piles, concrete, piled brush, and other evidence of extreme ground disturbance (Figure 18 to Figure 20). All of the bottles were made recently (1950s or later).

No traditional surface Hawaiian features were found, and with the evidence of extreme ground disturbance in mind, it is highly unlikely that there are any subsurface Hawaiian features intact. No sinkholes were found. As noted in the Predictive Model portion of this report, the western portion of the project area is within the mapped area of surface-exposed Ewa karst, a topographic area in which many sinkholes have been found. These sinkholes often contain fossil animal bones, and were modified and used in the pre-contact and historic eras for habitation, agriculture, and for burials. The western portion of the project area is very open (see Figure 5) with 90-100% visibility; no open sinkholes were noted. It is possible that there were once sinkholes in the western and eastern sections of the project area, which were buried under erosional soils in the historic period. However, the evidence of the high degree of bulldozing and grading in the project area makes it likely that any sinkholes would have been filled-in or destroyed.

There is also little evidence for post-contact use by the Ewa Plantation, the OR&L Railway Co., or the military. Although there are some piles and scatters of concrete fragments, including at the northeastern corner of the project area that may have used to house some OR&L railway workers in the early twentieth century (Figure 21), there is no real evidence that this concrete is old or associated with housing. No shell casings were seen on the ground, and no other evidence for military use of the area was found.

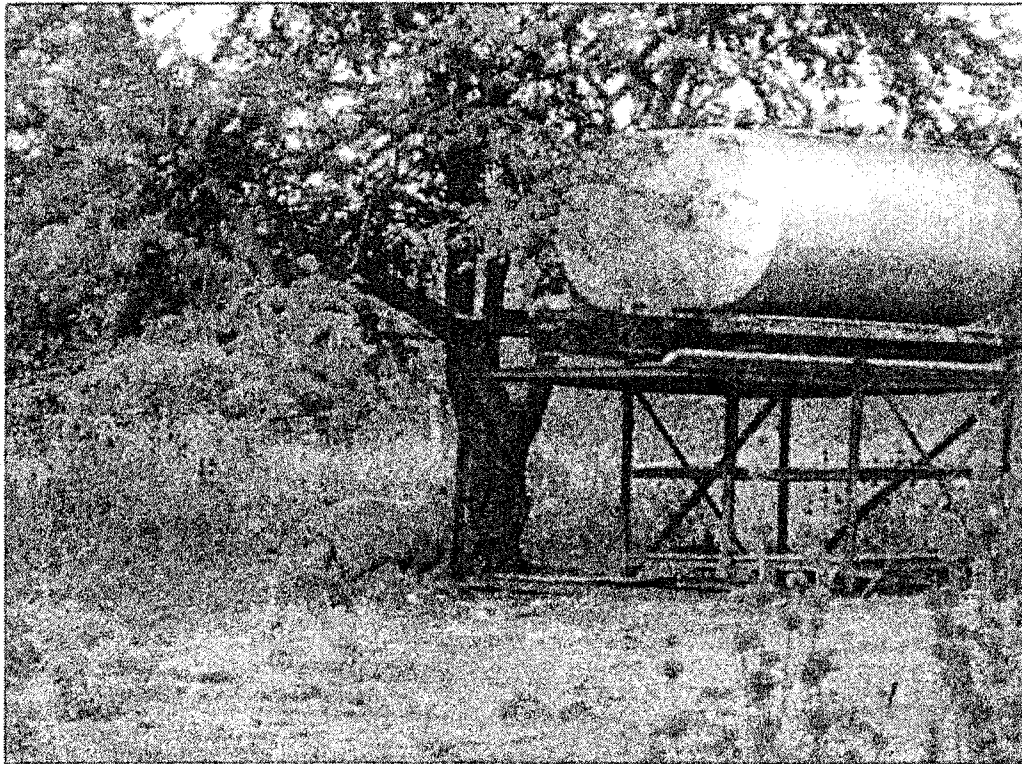


Figure 16. Sheep paddock in eastern project area, view to the south

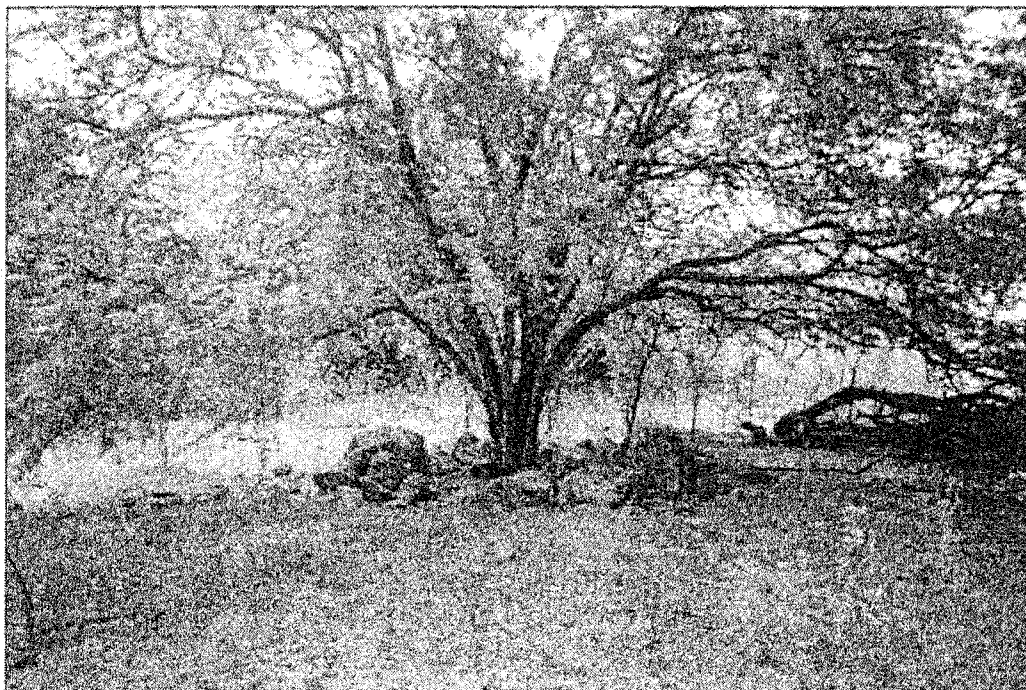


Figure 17. Central area leased for parties, cleared rocks placed around a tree, view to the south

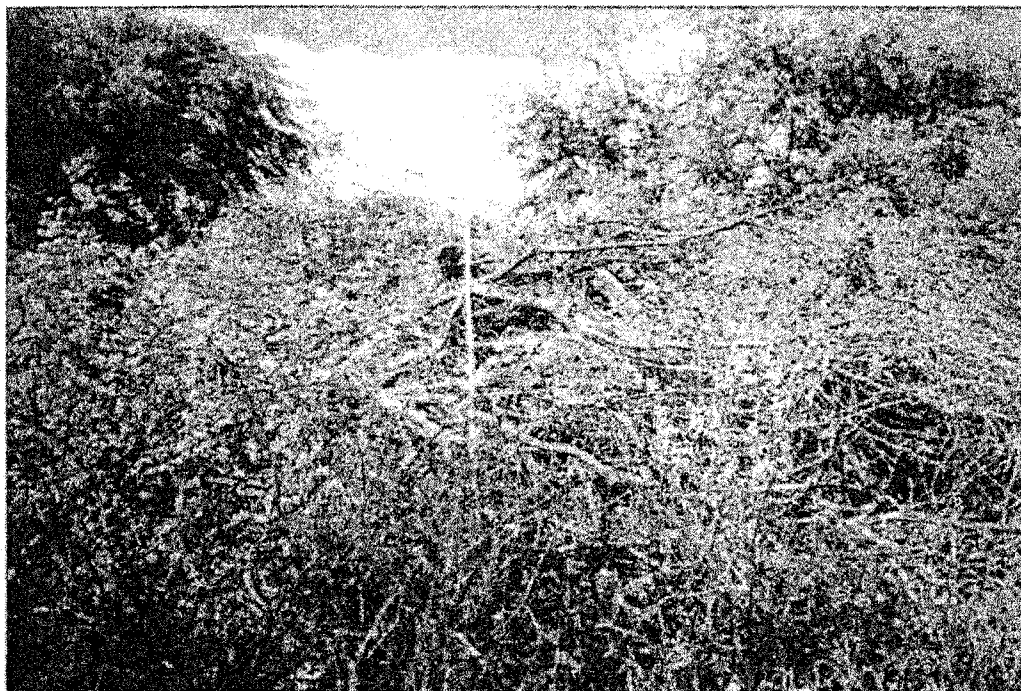


Figure 18. Brush piles in eastern section of project area, view to the west

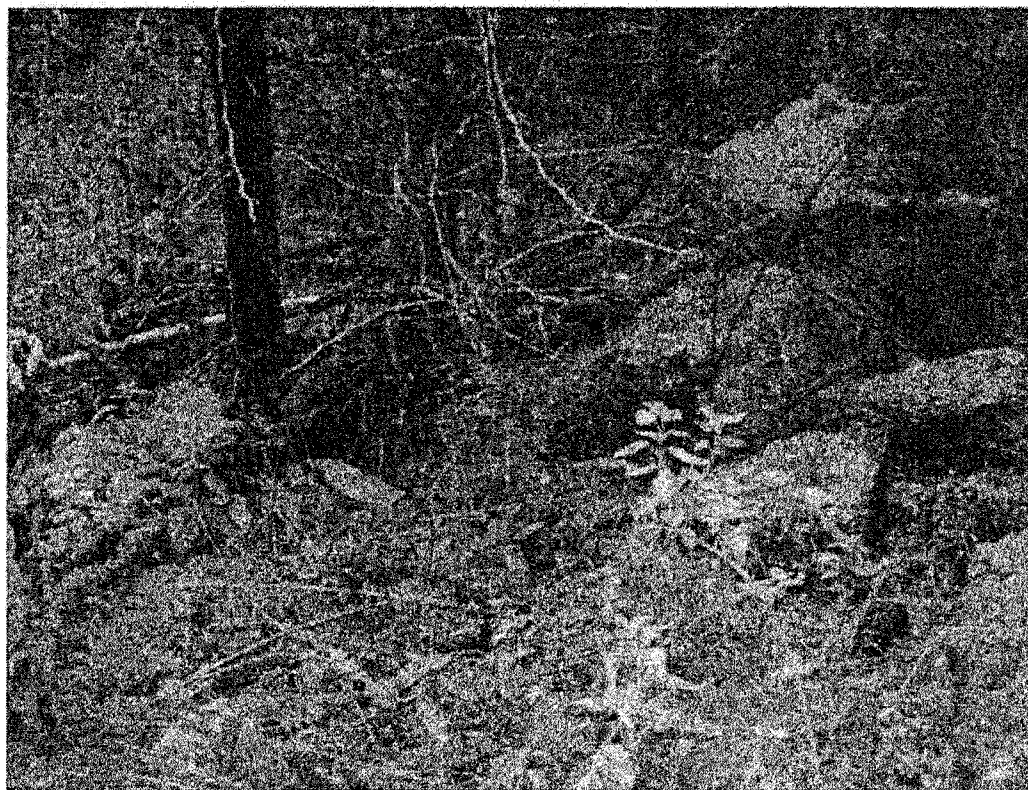


Figure 19. Bottle (mainly recent beer bottles) dumps and scatters in the eastern section of the project area

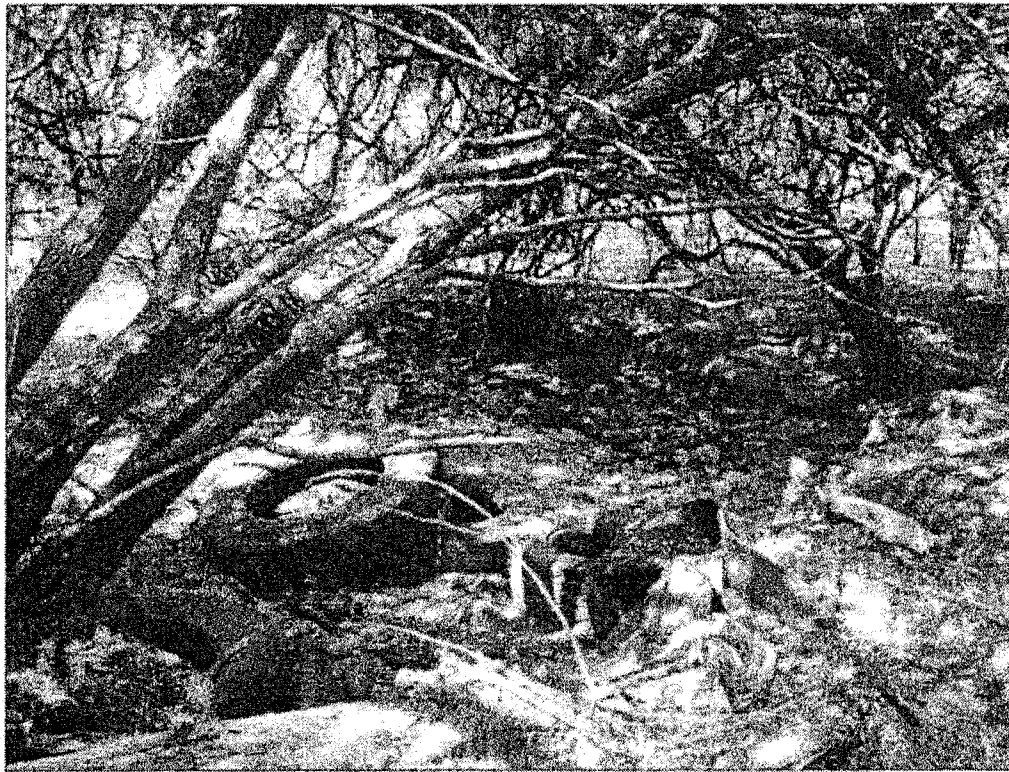


Figure 20. Trash piles in the eastern section of the project area, view to the west



Figure 21. Scatter of concrete fragments in northeastern corner of project area, view to the north

Section 6 Summary and Interpretation

Although early historic maps show the project area was between two important *mauka-makai* trails, this use for transportation may not have left any surface or sub-surface remains. The post-contact use for any type of habitation or military use also has not left any surface trace. The extensive ground disturbance seen in the project area, including cleared areas for pastures and paddocks in the central and western area, and trash/rock/concrete piles in the eastern area, indicate that if there were once any pre-contact or any non-recent (more than 50 years ago) post-contact subsurface features, these have probably been destroyed.

In the absence of any sites, in the vocabulary of the state review agency (the State Historic Preservation Division), this study is being called an "Archaeological Assessment." In conclusion, no evidence for any pre-or -post-contact use (except for livestock management) could be found in the project area, and it is unlikely that construction in the project area will negatively impact any intact subsurface features or deposits.

Based on the current investigation, there are no historic properties recommended Hawai'i Register-eligible within the project's APE. Accordingly, based on the available information, it is recommended that the proposed project will have no effect on significant (i.e. Hawai'i Register-eligible) historic properties. A project specific effect determination of "no historic properties affected" is warranted for the project.

No further cultural resource management work is recommended for the project. In the unlikely event that previously unidentified subsurface historic properties are encountered by project construction, the project proponents should immediately stop work in the vicinity and contact SHPD's O'ahu Office [Tel. (808) 692-8015].

Section 7 References Cited

Armstrong, Warwick (ed.)

1973 *Atlas of Hawai'i*. University of Hawai'i Press, Honolulu.

Barrera, William M., Jr.

1975 *A Report on the Archaeological Reconnaissance Survey of the Proposed Barbers Point Harbor Area*. Bernice P. Bishop Museum, Department of Anthropology, Honolulu.

Bath, Joyce

1989 *Burial of Hō'ae'ae Point in West Loch Project Area, Honouliuli, 'Ewa, O'ahu*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.

Beckwith, Martha

1940 *Hawaiian Mythology*. University of Hawai'i Press, Honolulu.

Bordner, Richard M., and Carol Silva

1983 *Archaeological Reconnaissance and Historical Documentation for Waimanalo Gulch and Ohikilolo Valley*. TMK: 9-2-03: 2,40,13 (por). Environmental Impact Study Corporation, Honolulu.

Bowser, George

1880 *The Hawaiian Kingdom Statistical and Commercial Directory*. Geo. Bowser & Co., Honolulu and San Francisco.

Campbell, Archibald

1967 *A Voyage Round the World from 1806 to 1812*. University of Hawai'i Press, Honolulu.

Charvet-Pond, Ann, and Bertell D. Davis

1992 *West Beach Data Recovery Program Phase 4, Archaeology and Paleontological Excavations*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Chiddix, Jim, and MacKinnon Simpson

2004 *Next Stop Honolulu! The Story of the Oahu Railway and Land Company*. Sugar Cane Press, Honolulu.

Condé, Jesse C. and Gerald M. Best

1973 *Sugar Trains, Narrow Gauge Rails of Hawai'i*. Glenwood Publishers, Felton, California.

Commission on Boundaries

1862-1935 *Commission on Boundaries, Hawai'i (Kingdom, Republic, Territory)*. Records stored at the Archives of Hawai'i, Honolulu.

Corbin, John, Tom Dye, and Muffett Jourdane

1996 *Field Reconnaissance: Laulaunui Island and Fishpond*. Department of Land and Natural Resources, State Historic Preservation Division, Kapolei, Hawai'i.

Cordy, Ross

2002 *The Rise and Fall of the O'ahu Kingdom*. Mutual Publishing, Honolulu.

Damon, Frank

1882 Tours Among the Chinese, No. 1. *The Friend*, April 1882.

Davis, Bertell

1988 *Final Report Archaeological Subsurface Survey of the Proposed 'Ewa Gentry Project Area, Honouliuli, 'Ewa, O'ahu*. Bernice P. Bishop Museum: Honolulu.

Davis, Bertell D., and Greg C. Burtchard

1991 *Archaeological Inventory Survey of the Proposed PPV Housing Area, West Loch Unit of the Lualualei Naval Ammunition Depot, Pu'uloa, 'Ewa, O'ahu, Hawai'i*. International Archaeological Research Institute, Inc., Honolulu.

Davis, Bertell D., and P. Bion Griffin (eds.)

1978 *Studies in Natural History and Human Settlement at Barbers Point, O'ahu*. Archaeological Research Center Hawai'i (ARCH), Lawa'i, Kaua'i.

Davis, Bertell D., and Alan E. Haun

1987 *Interim Report: Phase (2) Intensive Survey and Test Excavations West Beach Data Recovery Program, Honouliuli, 'Ewa, Island of O'ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Davis, Bertell D., Alan E. Haun, and Paul H. Rosendahl

1986a *Phase 1) Research Design for Intensive Survey and Test Excavations, West Beach Data Recovery Program, West Beach Resort, Honouliuli, 'Ewa, O'ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

1986b *Phase 3) Data Recovery Plan for Archaeological and Paleontological Excavations, West Beach Data Recovery Program, West Beach Resort, Honouliuli, 'Ewa, O'ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Dicks, A. Merrill, Alan E. Haun, and Paul H. Rosendahl

1987 *Archaeological Reconnaissance Survey for Environmental Impact Statement, West Loch Estates Golf Course and Parks, Honouliuli, 'Ewa, O'ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Dillingham, B. F.

1885 *Memos concerning Honouliuli, Kahuku, and Hawailoa Ranches*. B.F. Dillingham, Honolulu.

Dorrance, William H., and Francis S. Morgan

2000 *Sugar Islands: The 165-Year Story of Sugar in Hawai'i*. Mutual Publishing, Honolulu.

Emerson, Nathaniel B.

1915 *Pele and Hi'iaka*. Copyright 1993. 'Ai Pōhaku Press, Honolulu.

Emory, Kenneth

1933 *Field Notes from Honouliuli Archeological Survey*. Department of Anthropology, Bishop Museum, Honolulu.

Ewa Plantation Company

1923 *Ewa Plantation Company Annual Report for 1923*. Microfilm at University of Hawai'i at Mānoa, Hamilton Library, Honolulu.

Foote, Donald E., E.L. Hill, S. Nakamura and F. Stephens

- 1972 *Soil Survey of the Islands of Kaua'i, O'ahu, Maui, Molokai and Lanai, State of Hawai'i*. U.S. Dept. of Agriculture, U.S. Government Printing Office, Washington, D.C.

Fornander, Abraham

- 1880 *An Account of the Polynesian Race. Its Origin and Migrations and the Ancient History of the Hawaiian People to the Times of Kamehameha I*. Volume II. Trübner, London.
- 1917 *Fornander Collection of Hawaiian Antiquities and Folklore*. Vol. IV, Part 2. T.G. Thrum editor. Memoirs of the Bernice P. Bishop Museum, Bishop Museum Press, Honolulu.
- 1919a *Fornander Collection of Hawaiian Antiquities and Folklore*. Vol. V, Part 2. T.G. Thrum editor. Memoirs of the Bernice P. Bishop Museum, Bishop Museum Press, Honolulu.
- 1919b *Fornander Collection of Hawaiian Antiquities and Folklore*. Vol. VI, Part 2. T.G. Thrum editor. Memoirs of the Bernice P. Bishop Museum, Bishop Museum Press, Honolulu.

Frierson, Barbara

- 1972 *A Study of Land Use and Vegetation Change: Honouliuli, 1790-1925*. Manuscript prepared for Graduate Seminar in Geography (750), University of Hawai'i, Honolulu.

Halliday, William R.

- 1998 Current Status of the Ewa Karst, Honolulu County, Hawaii. *The Cave Conservationist*, February 1998.

Hammatt, Hallett H., and William H. Folk

- 1981 *Archaeological and Paleontological Investigation at Kalaeloa (Barbers Point), Honouliuli, 'Ewa, O'ahu, Federal Study Areas 1a and 1b, and State of Hawai'i Optional Area 1*. Archaeological Research Center Hawai'i (ARCH), Lawa'i, Kaua'i.

Hammatt, Hallett H., and David W. Shideler

- 1999 *An Archaeological Inventory Survey for the Waimānalo Gulch Sanitary Landfill Project Site, Honouliuli, 'Ewa, O'ahu*, Cultural Surveys Hawai'i, Kailua, Hawai'i.

Hammatt, Hallett H., Jennifer Robins, Mark Stride, and Matthew McDermott

- 1990a *An Archaeological Inventory Survey for the Makaīwa Hills Project Site, Honouliuli, 'Ewa, O'ahu*. Cultural Surveys Hawai'i, Kailua, Hawai'i.

Hammatt, Hallett H., David Shideler, and William Folk

- 1990b *Archaeological Reconnaissance of the 'Ewa Villages Project Site, Honouliuli, 'Ewa, O'ahu*. Cultural Surveys Hawai'i, Kailua, Hawai'i.

Handy, E.S. Craighill

- 1940 *The Hawaiian Planter, Volume 1. His Plants, Methods and Areas of Cultivation*. Bernice P. Bishop Museum Bulletin 161, The Museum, Honolulu.

Handy, E.S. Craighill, and Elizabeth G. Handy

1972 *Native Planters in Old Hawai'i: Their Life, Lore, and Environment*. Bernice P. Bishop Museum Bulletin 233, Honolulu.

Ī'i, John Papa

1959 *Fragments of Hawaiian History*. Bernice P. Bishop Museum, Honolulu.

Immisch, George B.

1964 *Land Reclamation and the Role of the Hydrosseparator at Ewa Plantation: A Case Study of Some of the Effects of Mechanized Harvesting in the Hawaiian Sugar Industry*. Master's thesis, University of Hawai'i at Mānoa, Honolulu.

Indices of Awards

1929 *Indices of Awards Made by the Board of Commissioners to Quiet Land Titles in the Hawaiian Islands*. Commissioner of Public Lands. Star Bulletin Press, Honolulu.

Jarrett, L.

1930 *A Source Book in Hawaiian Geography*. M.A. Thesis, University of Hawai'i, Honolulu.

Jensen, Peter M., and James Head

1997 *Archaeological Reconnaissance Survey, Naval Magazine Lualualei, NAVMAG-West Loch, Lands of Pu'uloa, Honouliuli, Waikele, and Waipi'o, District of Ewa, Island of O'ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Juvik, Sonia P., and James O. Juvik (ed.)

1998 *Rainfall Atlas of Hawai'i*. Third Edition. University of Hawai'i Press, Honolulu.

Ka Hōkū o Hawai'i

1927 He Mo'olelo Ka'ao no Hi'iaka- i-ka poli-o-Pele. *Ka Hōkū o Hawai'i*, February 15, 1927.

1927 He Mo'olelo Ka'ao no Hi'iaka- i-ka poli-o-Pele. *Ka Hōkū o Hawai'i*, February 22, 1927.

Ka Loea Kālai'āina

1899 Na Wahi Pana o Ewa. *Ka Loea Kālai'āina*, July 8, 1899.

1900 Na Wahi Pana o Ewa. *Ka Loea Kālai'āina*, Jan. 13, 1900.

Kahiolo, G. W.

1998 *He Mo'olelo no Kamapua'a*. Hale Kuamo'o, Ka Haka 'Ula O Ke'eliokōlani, Hilo, Hawai'i.

Kamakau, Samuel M.

1976 *The Works of the People of Old, Nā Hana a Ka Po'e Kahiko*. Bernice P. Museum Special Publication 61. Originally published 1869-1870. Bishop Museum Press, Honolulu.

1991a *Tales and Traditions of the People of Old; Nā Mo'olelo a Ka Po'e Kahiko*. Originally published 1865-1869. Bishop Museum Press, Honolulu.

1991b *Ka Pō'e Kahiko; The People of Old*. Originally published 1869-1870. Bishop Museum Press, Honolulu.

Kame'eleihiwa, Lilikala

- 1992 *Native Land and Foreign Desires. Pehea La E Pono Ai?* Bishop Museum Press, Honolulu.

Kelly, Marion

- 1985 Notes on the History of Honouliuli. Appendix A In, *An Archaeological Survey of the Naval Air Station, Barbers Point O'ahu, Hawai'i*, by Alan E. Haun. Department of Anthropology, Bernice P. Bishop Museum, Honolulu.
- 1991 Notes on the History of Honouliuli. In A.E. Haun, *Archaeological Survey of the Naval Air Station, Barbers Point O'ahu, Hawai'i, Appendix A*. Applied Research Group, Bernice P. Bishop Museum, Honolulu.

Kennedy, Joseph

- 1988 *Archaeological Reconnaissance Report Concerning the Proposed 'Ewa Gentry Project in Honouliuli, O'ahu*. Archaeological Consultants of Hawai'i, Haleiwa, Hawai'i.

Kennedy, Joseph, James Berlin, and Tim Denham

- 1992 *Archaeological Data Recovery Report for the Pu'uloa Golf Course Located at 'Ewa, Island of O'ahu, TMK 9-1-01:27 & 6, Revised*. Archaeological Consultants of Hawai'i, Inc., Hale'iwa, Hawai'i.

Kuykendall, Ralph S.

- 1967 *The Hawaiian Kingdom, Vol.III*. University of Hawai'i Press, Honolulu.

Landrum, James, Robert Drolet, and Katharine Bouthillier

- 1997 *Cultural Resources Overview Survey, Naval Magazine Lualualei, Island of O'ahu, Hawai'i*. Ogden Environmental and Energy Services Co., Inc. Honolulu, Hawai'i.

McAllister, J.G.

- 1933 *Archaeology of O'ahu*. Bernice P. Bishop Museum Bulletin 104, Honolulu.

McDermott, Matthew, David Shideler, John Winieski, and Hallett H. Hammatt

- 2000 *Archaeological Data Recovery Report for the Archaeological sites in the Proposed Barbers Point Harbor Expansion Area, Kalaeloa, Ahupua'a of Honouliuli, District of 'Ewa, Island of O'ahu (TMK 9-1-14:2)*. Cultural Surveys Hawai'i, Kailua, Hawai'i.

McIntosh, James, and Paul L. Cleghorn

- 2003 *Archaeological Survey for the Proposed 'Ewa Gentry Makai Development 'Ewa District, Ahupua'a of Honouliuli, Island of O'ahu (TMK 9-1-10:7 and 9-1-69-5)*. Pacific Legacy, Inc., Kailua, Hawai'i.

Maly, Kepā

- 1992 Historical Documentary Research. In Berdena Burgett and Paul H. Rosendahl *Archaeological Inventory Survey, Contaminated Soil Stockpile/Remediation Facility*, Appendix E. Paul H. Rosendahl, Ph. D., Inc., Hilo, Hawai'i.

Maly, Kepā

- 1997 Historical Documentary Research. In *Archaeological Reconnaissance Survey, Naval Magazine Lualualei, NAVMAG-West Loch, Lands of Pu'uloa, Honouliuli, Waikele, and Waipi'o, District of 'Ewa, Island of O'ahu*, By Peter M. Jensen, and James Head, pp. 7-59 Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Nakuina, Emma M.

- 1904 *Hawai'i - Its People and Their Legends*. Hawai'i Promotion Committee, Honolulu.

Nakuina, Moses K.

- 1992 *The Wind Gourd of La'amaomao, The Hawaiian Story of Pāka'a and Kūapāka'a, Personal Attendants of Keawenuia'umi, Ruling Chief of Hawai'i and Descendants of La'amaomao*. Collected, edited, and expanded by Moses K. Nakuina, translated by Esther T. Mookini and Sarah Nākoa. Kalamakū Press, Honolulu.

NRCS

- 2006 Natural Resources Conservation Service, Hawai'i Soils. Text from, *Soil Survey of the Islands of Kaua'i, O'ahu, Maui, Molokai and Lanai, State of Hawai'i*, by Donald E. Foote, E.L. Hill, S. Nakamura and F. Stephens, 1972. U.S. Dept. of Agriculture, U.S. Government Printing Office, Washington, D.C. Online text and maps at <http://www.ctahr.hawaii.edu/soilsurvey/soils.htm>, downloaded July 19, 2006.

Pagliari, Penny

- 1987 *Ewa Plantation: An Historical Survey 1890 to 1940*. Manuscript, Historic Preservation Program, University of Hawai'i at Mānoa, Honolulu.

Pantaleo, Jeffrey, and Aki Sinoto

- 1993 *Archaeological Inventory Survey For the Proposed Off-Site Drainage System 'Ewa Gentry, East Honouliuli, 'Ewa, O'ahu Island*. Aki Sinoto Consulting, Honolulu.

Paradise of the Pacific

- 1902 *Paradise of the Pacific*, March 1902:17.
1902 *Paradise of the Pacific*, Dec. 1902:19-22.

Pukui, Mary Kawena

- 1983 *Ōlelo No'eau: Hawaiian Proverbs and Poetical Sayings*. Bernice P. Bishop Museum Special Publication No.71, Bishop Museum Press, Honolulu.

Pukui, Mary Kawena, and Samuel H. Elbert

- 1986 *Hawaiian Dictionary*. 2nd Edition, University of Hawai'i Press, Honolulu.

Pukui, Mary K., Samuel H. Elbert, and Esther Mookini

- 1974 *Place Names of Hawai*. University of Hawai'i Press, Honolulu.

Rosendahl, Paul H.

- 1987 *Archaeological Reconnaissance Survey for Environmental Impact Statement, West Loch Estates - Residential Increments I and II, Land of Honouliuli, 'Ewa District, Island of O'ahu*. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

R.M. Towill

1990 *Ewa Villages Master Plan, Ewa, Oahu, Hawaii*. R. M. Towill Corporation, Honolulu.

Saturday Press

1883 Dictionary of Hawaiian Localities. *Saturday Press*, Aug. 11, 1883.

Schmitt, Robert C.

1968 *Demographic Statistics of Hawai'i: 1778-1965*. University of Hawai'i Press, Honolulu.

1973 *The Missionary Censuses of Hawai'i*. Bernice P. Bishop Museum: Honolulu.

Silva, Carol

1987 Historical Documentary Research – West Loch Estates Project Area. In *Archaeological Reconnaissance Survey for Environmental Impact Statement, West Loch Estates Golf Course and Parks, Honouliuli, 'Ewa, O'ahu*, by Merrill A. Dicks, Alan E. Haun, and Paul H. Rosendahl, Appendix A. Paul H. Rosendahl, Ph.D., Inc., Hilo, Hawai'i.

Sinoto, Akihiko

1978 *Archaeological Reconnaissance Survey and Salvage of Burial at NAVMAG Lualualei, West Loch Branch, O'ahu, Hawai'i*. Bernice P. Bishop Museum, Department of Anthropology, Honolulu.

Souza, Kehaulani, Constance R. O'Hare, and Hallett H. Hammatt

2006 *Cultural Impact Assessment for the 'Ewa Industrial Park Project, Honouliuli Ahupua'a, 'Ewa District, O'ahu Island*. Cultural Surveys Hawai'i, Inc., Kailua, Hawai'i.

Spear, Robert L.

1996 *Archaeological Reconnaissance and Assessment of the H.F.D.C-East Kapolei Development Project*. Scientific Consulting Services, Honolulu.

Sterling, Elspeth P., and Catherine C. Summers (comp.)

1978 *Sites of O'ahu*. Bernice P. Bishop Museum, Department of Anthropology, Honolulu.

Thrum, Thomas G.

1886 Great Land Colonization Scheme. *Hawaiian Almanac and Annual* for 1887:73-80. Thos. G. Thrum, Honolulu.

1906 Heiaus and Heiau Sites Throughout the Hawaiian Islands. *Hawaiian Almanac and Annual* for 1907. T. G. Thrum, Honolulu.

1917 List of Heiaus and Sites. *Hawaiian Almanac and Annual* for 1918. Pacific Commercial Advertiser, Honolulu.

1923 *More Hawaiian Folk Tales*. A.C. McClurg & Co., Chicago.

Treiber, Gale

2005 Oahu's Railways since WWII. *TRP, The Railroad Press*, Issue #66:10-29. (Issue available at Hawai'i Railway Museum, Ewa Station, O'ahu, Hawai'i.)

Tuggle, H. David, and Myra J. Tomonari-Tuggle

- 1997 *Synthesis of Cultural Resource Studies of the 'Ewa Plain, Task 1a: Archaeological Research Services for the Proposed Cleanup, Disposal and Reuse of Naval Air Station Barbers Point, O'ahu, Hawai'i*. International Archaeological Research Institute, Inc., Honolulu.

Vancouver, George

- 1798 *A Voyage of Discovery to the North Pacific Ocean...performed in the years 1790, 1791, 1792, 1793, 1794, and 1795, in the Discovery . . . and . . . Chatham . . .* Vols. I-III. Amsterdam, N. Israel, London.

Westervelt, William D.

- 1963 *Legends of Old Honolulu*. Collected and Translated from the Hawaiian by W. D. Westervelt. Press of George H. Ellis Co., Boston.

Wilkes, Charles

- 1970 *Narrative of the U.S. Exploring Expedition, Volume IV*. Republished by The Gregg Press, Upper Saddle River, New Jersey.

Wolforth, Thomas R., and Warren Wulzen

- 1997 *Archaeological Data Recovery at West Loch Estates, Residential Increment I, and Golf Course and Shoreline Park, Land of Honouliuli, 'Ewa District, Island of O'ahu*. Paul H. Rosendahl, Ph.D., Inc, Hilo, Hawai'i.

Yoklavich, Anne K., Robert Drolet, and Patricia Drolet

- 1995 *Preliminary Report Cultural Resources Management Overview Survey Naval Air Station, Barbers Point, O'ahu Hawai'i*. Ogden Environmental and Energy Services Co., Inc., Honolulu.

APPENDIX XII

BOTANICAL RESOURCES ASSESSMENT STUDY

BOTANICAL RESOURCES ASSESSMENT FOR THE
EWA INDUSTRIAL PARK PROJECT
HONOULIULI, OAHU

Prepared by:

Maya LeGrande
LeGrande Biological Surveys Inc
68-310 Kikou Street
Waialua HI 96791

Prepared for:

EWA INDUSTRIAL PARK
99-880 Iwaena Street
Aiea, Hawaii 96701

AUGUST 8, 2006

TABLE OF CONTENTS

	PAGE
INTRODUCTION.....	2
GENERAL SITE DESCRIPTION.....	2
SURVEY METHODS.....	2
DESCRIPTION OF THE VEGETATION.....	3
DISCUSSION AND RECOMMENDATIONS.....	3
LITERATURE SITED.....	4
PLANT SPECIES LIST.....	5

INTRODUCTION

This report includes the findings of a botanical study conducted at TMK: 9-1-069:003 within the Honouliuli Region on the island of Oahu, Hawaii. LeGrande Biological Surveys Inc. carried out a botanical field survey of the above location on August 8, 2006. The primary objectives of the field studies were to:

- 1) provide a general description of the vegetation on the project site;
- 2) inventory the flora; and
- 3) search for threatened and endangered species as well as species of concern.

Federal and State of Hawaii listed species status follows U.S. Fish and Wildlife (USFWS) (1999a and 1999b, 2004) and Federal Register (2002).

GENERAL SITE DESCRIPTION

The area proposed for development includes one parcel (TMK: 9-1-069:003) located in the Ewa District of Oahu. The parcel is bordered by the Honouliuli Sewage Treatment Plant and Geiger Road to the south and portions of the OR&L Railway to the north. Ewa by Gentry Golf Course is located to the east and the Oahu Railway Museum to the west. The entire property encompasses a little over 48 acres.

The majority of the property is either being used for storage of equipment; trucks, tractors, metal shipping containers or for keeping livestock such as goats and chickens. The majority of the parcel is characterized by kiawe scrub with weedy plant species dominating the area. The subject property is at about 40 ft elevation throughout. It appears that the parcel has been disturbed historically and alteration of native plant habitat has been in place for some time with very few of the natural plant elements remaining.

SURVEY METHODS

Prior to undertaking the field studies, a search was made of the pertinent literature to familiarize the principal investigator with other botanical studies conducted in the general area. The 2004 Habitat Conservation Plan for *Abutilon menziesii* at Kapolei was reviewed for possible endangered plant locations within the survey area. Information from the Hawaii Biodiversity and Mapping Program database was reviewed. Topographic maps were examined to determine terrain characteristics, access, boundaries, and reference points.

A walk-through survey method was used. The parcel boundaries were surveyed by foot. Roads through the subject property were driven and most were walked as well to survey for roadside plants. Transects through the interior of the property were walked at 20 foot intervals. Notes were made on plant associations and distribution, disturbances, topography, substrate types, exposure, drainage, etc. Plant identifications were made in the field; plants that were not positively identified were collected for later determination, and for comparison with the recent taxonomic literature.

DESCRIPTION OF THE VEGETATION

The entire survey area is dominated by Kiawe Scrub vegetation. A total of 39 plant species were observed within the survey area. 37 are alien (introduced) and two are indigenous (native to the Hawaiian Islands and elsewhere). Therefore, 95% of the plant species observed were alien and 5% native.

An inventory of all the plants observed within the survey site is presented in the species list at the end of the report.

Kiawe trees (*Prosopis pallida*) dominate the subject property with 90% coverage. Opiuma (*Pithecellobium dulce*), koa haole (*Leucaena leucocephala*), and African tulip (*Spathodea campanulata*) trees are scattered throughout the parcel and along the boundary fences. Shrub species include boerhavia (*Boerhavia coccinea*), Australian saltbush (*Atriplex semibaccata*), slender mimosa (*Desmanthus pernambucans*), Christmas berry (*Schinus terebinthifolius*), sourbush (*Pluchea carolinensis*), castor bean (*Ricinus communis*), Ipomoea obscura, spiny amaranth (*Amaranthus spinosus*), golden crown-beard (*Verbesina encelioides*), and cucumber (*Cucumis sativus*). Grass species include sourgrass (*Digitaria insularis*), buffelgrass (*Cenchrus ciliaris*), and swollen fingergrass (*Chloris barbata*).

In actively tended areas in and around the chicken farm and at the eastern and western ends of the property trees such as mango (*Mangifera indica*), Chinese banyan (*Ficus microcarpa*), Coconut (*Cocos nucifera*), and horseradish tree (*Moringa oleifera*) were observed.

Two indigenous plant species were observed infrequently in the area; uhaloa (*Waltheria indica*) and kauna`oa pehu (*Cassytha filiformis*). The kauna`oa pehu is a greenish-orange parasitic climber that was observed draped in a few of the larger kiawe trees on the property.

DISCUSSION AND RECOMMENDATIONS

None of the plant species observed on the project site is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service, 1999a, 1999b, 2004; Wagner et. al., 1999). A concerted effort was made in surveying for *Abutilon menziesii* within the subject property. The present known locations for this endangered Hawaiian plant are clustered on the south-west side of Palehua Road outside the boundaries of the study site. No plants of *A. menziesii* were observed during the survey.

No wetlands were encountered during this survey. None of the three essential criteria for defining a federally recognized wetland were present within the study site. Those being; hydrophytic vegetation, hydric soils, and wetland hydrology.

The proposed development of the Ewa Industrial Park is not expected to have significant negative impacts on the botanical resources of the site or the general region.

Literature Cited

- Evehuis, N.L. and L.G. Eldredge, editors. 1999-2002. Records of the Hawaii Biological Survey. Bishop Museum Occasional Papers Nos. 58-70.
- Federal Register. 2002. Department of the Interior, Fish and Wildlife Service, 50 CFR 17. Endangered and Threatened Wildlife and Plants. Review of Species That Are Candidate or Proposed for Listing as Endangered or Threatened; Annual Notice of Findings on Recycled Petition; Annual Description of Progress on Listing Actions. *Federal Register*, 67 No. 14 (Thursday, June 13, 2002): 40657-40679.
- Staples G. W. and D. R. Herbst. 2005. A Tropical Garden Flora: Plants cultivated in the Hawaiian Islands and other tropical places. Bishop Museum Press.
- State of Hawaii, Department of Transportation. Habitat Conservation Plan for *Abutilon menziesii* at Kapolei. March 2004.
- U.S. Fish and Wildlife Service. 1999a. U.S. Fish and Wildlife Service species list, plants. March 23, 1999. Pacific Islands Office, Honolulu, HI.
- U.S. Fish and Wildlife Service. 1999b. Endangered and threatened wildlife and plants. 50 CFR 17.11 and 17.12. December 31, 1999.
- U.S. Fish and Wildlife Service. 2004. Hawaiian Islands Plants: Updated June 15, 2004, Listed and Candidate Species, as Designated under the U.S. Endangered Species Act. 17pp.
- Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. Manual of the flowering plants of Hawaii. 2 vols. University of Hawaii Press and Bishop Museum Press, Honolulu. Bishop Museum Special Publication 83.
- Wagner, W.L. and D.R. Herbst. 1999. Supplement to the Manual of the flowering plants of Hawaii, pp. 1855-1918. In: Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. Manual of the flowering plants of Hawaii. Revised Edition. 2 vols. University of Hawaii Press and Bishop Museum Press, Honolulu.

PLANTS SPECIES LIST – East Industrial Park, Oahu, Hawaii

The following checklist is an inventory of all the plant species observed within the survey site for the proposed Ewa Industrial Park development. The plant names are arranged alphabetically by family and then by species into each of two groups: Monocots and Dicots. The taxonomy and nomenclature of the flowering plants (Monocots and Dicots) are in accordance with Wagner *et al.* (1990), Wagner and Herbst (1999) and Staples and Herbst (2005). Recent name changes are those recorded in the Hawaii Biological Survey series (Evehuis and Eldredge, eds, 1999-2002).

For each species, the following name is provided:

1. Scientific name with author citation.
2. Common English and/or Hawaiian name(s), when known.
3. Biogeographic status. The following symbols are used:

I= indigenous= native to the Hawaiian Islands and elsewhere.

X=introduced or alien = all those plants brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact, that is Cook's arrival in the islands in 1778.

EWA INDUSTRIAL PARK PLANT SPECIES LIST
AUGUST 2006

SCIENTIFIC NAME	COMMON NAME	STATUS
MONOCOTS		
ARECACEAE		
<i>Cocos nucifera</i> L.	coconut	X
POACEAE		
<i>Cenchrus ciliaris</i> L.	Buffelgrass	X
<i>Chloris barbata</i> (L.) Sw.	Swollen fingergrass	X
<i>Cynodon dactylon</i> (L.) Pers	manienie	X
<i>Digitaria insularis</i> (L.) Mez ex Ekman	sourgrass	X
<i>Eragrostis tenella</i> (L.) P.Beauv. Ex Roem.&Schult.		X
DICOTS		
AMARANTHACEAE		
<i>Alternanthera pungens</i> Kunth	Khaki weed	X
<i>Amaranthus spinosus</i> L.	Spiny amaranth	X
ANACARDIACEAE		
<i>Mangifera indica</i> L.	mango	X
<i>Schinus terebinthifolius</i> Raddi	Christmas berry	X
APOCYNACEAE		
<i>Plumeria rubra</i> L.	plumeria	X
ASTERACEAE		
<i>Bidens pilosa</i> L.	Spanish needle	X
<i>Emilia fosbergii</i> Nicolson	Red pualele	X
<i>Pluchea carolinensis</i> (Jacq.) G. Don	sourbush	X
<i>Pluchea indica</i> (L.) Less.	Indian fleabane	X
<i>Synedrella nodiflora</i> (L.) Gaertn.	nodeweed	X
<i>Verbesina encelioides</i> (Cav.) Benth. & Hook	Golden crown-beard	X
<i>Xanthium strumarium</i> L. var. <i>canadense</i> (Miller)	kikania	X
BIGNONIACEAE		
<i>Spathodea campanulata</i> P. Beauv.	African tulip	X
CHENOPODIACEAE		
<i>Atriplex semibaccata</i> R.Br.	Australian saltbush	X

SCIENTIFIC NAME	COMMON NAME	STATUS
CONVOLVULACEAE		
<i>Ipomoea obscura</i> (L.) Ker Gawl.		X
CUCURBITACEAE		
<i>Coccinea grandis</i> (L.) Voigt	Ivy gourd	X
<i>Cucumis dipsaceus</i> ehrenb. Ex Spach	Hedgehog gourd	X
EUPHORBIACEAE		
<i>Ricinus communis</i> L.	Castor bean	X
FABACEAE		
<i>Acacia farnesiana</i> (L.) Willd.	Klu, aroma, kolu	X
<i>Desmanthus pernambucanus</i> (L.) Thell.	Slender or virgate mimosa	X
<i>Leucaena leucocephala</i> (Lam.) de Wit	Koa haole	X
<i>Macroptilium lathyroides</i> (L.) Urb.	Wild bean	X
<i>Peltophorum pterocarpum</i> (A.P. de Candolle) K. Heyne	Yellow poinciana	X
<i>Pithecellobium dulce</i> (Roxb.) Benth.	opiuma	X
<i>Prosopis pallida</i> (Humb. & Bonpl. Ex Willd.) Kunth	Kiawe, algaroba	X
LAMIACEAE		
<i>Leonotis nepetifolia</i> (L.) R.Br.	Lion's ear	X
LAURACEAE		
<i>Cassytha filiformis</i> L.	Kauna`oa pehu	I
MALVACEAE		
<i>Malvastrum coromandelianum</i> (L.) Garcke	False mallow	X
MORACEAE		
<i>Ficus microcarpa</i> L.f.	Chinese banyan	X
MORINGACEAE		
<i>Moringa oleifera</i> Lamark	Horseradish tree	X
NYCTAGINACEAE		
<i>Boerhavia coccinea</i> Mill.		X
SOLANACEAE		
<i>Nicotiana glauca</i> R.C. Graham	Tree tobacco	X

SCIENTIFIC NAME	COMMON NAME	STATUS
STERCULIACEAE		
<i>Waltheria indica</i> L.	uhaloa	I

APPENDIX XIII

AVIFAUNAL AND FERAL MAMMAL FIELD SURVEY

**AVIFAUNAL AND FERAL MAMMAL FIELD SURVEY FOR THE
PROPOSED EWA INDUSTRIAL PARK IN EWA, OAHU**

Prep. for:

**Ewa Industrial Park
c/o Valentine Peroff, Jr.**

By

**Phillip L. Bruner
Environmental Consultant – Faunal (Bird & Mammal) Surveys
#1775 BYUH
55-220 Kulanui Street
Laie, HI 96762**

(Revised)

8 September 2006

INTRODUCTION

This report provides the findings of a faunal (bird and mammal) field survey of the area involved in the proposed Ewa Industrial Park at Ewa, Oahu. The survey was conducted on 8 July 2006.

The objectives of the survey were:

- 1- Document the birds and mammals found on or near the site.
- 2- Supplement the field data with unpublished reports and pertinent literature.
- 3- Focus the report on native and migratory species, particularly any that are listed as threatened or endangered.
- 4- Note any natural resources important to native or migratory birds.

GENERAL SITE DESCRIPTION

The site of the proposed Ewa Industrial Park is located on Parcel 3 of TMK: (1) 9-1-69. Portions of the site have existing structures and cleared space. The majority of the land is covered in dry grass/weeds and scattered Kiawe (*Prosopis pallida*) trees. No wetlands were found on the property. Surrounding lands contain a mix of developed residential property, Honouliuli Sewage Treatment Plant, golf course, and Kiawe thickets at Kalaeloa.

FIELD METHODS

The site was surveyed by driving the perimeter, walking the railroad right-of-way, and by walking the east end of the property by accessing the site through a hole in the fence line. All species seen or heard were recorded. Mammal observations were based on direct sightings or tracks.

Scientific names used in this report follow (Pyle 2001, Hawaii Audubon Society 2005, Honacki et al. 1982, and Pratt 1998). These sources use the common (vernacular) and scientific names found in the current scientific literature.

RESULTS AND DISCUSSION

Birds:

Table One lists the alien (introduced) species recorded on the survey. This list does not include all the species that potentially could occur in the area but does account for the more common species that would be expected (Hawaii Audubon Society 2005, Bruner 2004, 2005). No native land birds were detected. The only species currently known from the area around this site is the Hawaiian Owl or Pueo (*Asio flammeus sandwichensis*) (Bruner 2004). This species is listed by the State of Hawaii as endangered on Oahu. Pueo forage in a variety of habitats including forests, parklands and agricultural fields (Pratt et al. 1987, Hawaii Audubon Society 2005).

No migratory shorebirds were observed on the survey. The only migrant that would be expected to “winter” in the open patches on the site is the Pacific Golden-Plover or Kōlea (*Pluvialis fulva*). This species is the most abundant and well studied migratory shorebird in Hawaii (Johnson et al. 1981, 1989, 1993, 2001). They migrate to their arctic breeding grounds at the end of April and return to Hawaii in August. Kōlea are not listed as threatened or endangered.

Mammals:

The only feral mammal seen on the survey was the ubiquitous Small Indian Mongoose (*Herpestes auropunctatus*). One was seen on the east end of the property. The endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*) was not found. They are relatively rare on Oahu (Kepler and Scott 1990). This species roosts solitarily in trees. They forage for flying insects at dusk and as well as after dark using echolocation (Tomich 1986). The chances of seeing a bat on Oahu are low due to their small numbers. They forage over native forest, disturbed habitats (fields and agricultural lands) and in urban settings (Bruner 2004, 2005).

CONCLUSIONS

The site of the proposed Ewa Industrial Park is mostly disturbed by past and present human activity. The endangered (State of Hawaii listed) Pueo have been seen makai of the Honouliuli Sewage Treatment Plant as recently as 2004 (Bruner 2005) but would likely find this proposed development site a relatively unprofitable foraging ground. Much of the site is cleared and better foraging habitat can be found on nearby Barbers Point property. The absence of the migratory Kōlea was not unexpected since they are in the arctic on their breeding grounds at this time of year. A few will “over-summer” (fail to migrate) but none were observed at this site. Alien birds and mammals found on the survey are those commonly seen in similar habitats in this area of Oahu. The endangered Hawaiian Hoary Bat was not observed and I know of no published records for this species at this site.

TABLE 1

List of alien (introduced) species recorded on 8 July 2006 at Parcel 3 of TMK (1) 9-1-69 at the proposed Ewa Industrial Park site in Ewa, Oahu.

COMMON NAME	SCIENTIFIC NAME
Spotted Dove	<i>Streptopelia chinensis</i>
Zebra Dove	<i>Geopelia striata</i>
Common Myna	<i>Acridotheres tristis</i>
Red-crested Cardinal	<i>Paroaria coronata</i>
Red-vented Bulbul	<i>Pycnonotus cafer</i>
Japanese White-eye	<i>Zosterops japonicus</i>
House Finch	<i>Carpodacus mexicanus</i>
Java Sparrow	<i>Padda oryzivora</i>

SOURCES CITED

- Bruner, P. 2004. Avifaunal and feral mammal field survey of lands proposed for an Instrument Landing System and Approach Lighting System at Kalaeloa Airport, Oahu, Hawaii. Unpubl. ms. Prep. for Char & Associates, Honolulu.
- _____. 2005. Avifaunal and feral mammal field survey of lands involved in the University of Hawaii – West Oahu (UH West Oahu) Project, Kapolei, Oahu, Hawaii. Unpubl. ms. Prep. for PBR-Hawaii.
- Hawaii Audubon Society. 2005. Hawaii's Birds. 6th Ed., Hawaii Audubon Society. Island Heritage Publishing. 141pp.
- Johnson, O.W., P.M. Johnson, and P.L. Bruner. 1981. Wintering behavior and site-faithfulness of Golden-Plovers on Oahu. 'Elepaio 41(12):123-130.
- Johnson, O. W., M.L. Morton, P.L. Bruner, and P.M. Johnson. 1989. Winter range and fat cyclicality in Pacific Golden-Plovers (*Pluvialis fulva*) and predicted migratory flight ranges. Condor 91:156-177.
- Johnson, O.W., P.L. Bruner, P.G. Connors, and J.L. Maron. 1993. Breeding ground fidelity and mate retention in the Pacific Golden-Plover. Wilson Bull. 105(1):60-67.
- Johnson, O.W., P.L. Bruner, J.J. Rotella, P.M. Johnson, and A.E. Bruner. 2001. Long term study of apparent survival in Pacific Golden-Plovers at a wintering ground on Oahu, Hawaiian Islands. The Auk 118(2):342-451.
- Kepler, C.B., and J.M. Scott. 1990. Notes on the distribution and behavior of the endangered Hawaiian Hoary Bat (*Lasiurus cinereus semotus*). 'Elepaio 50(7):59-64.
- Pratt, H.D. 1998. Hawaii's trees and shrubs. Mutual Publishing, Honolulu. 136pp.

Pratt, H.D., P.L. Bruner and D.G. Berrett. 1987. A field guide to the birds of Hawaii and the tropical Pacific. Princeton University Press.

Tomich, P.Q. 1986. Mammals in Hawaii. Bishop Museum Press. Honolulu. 375pp.

APPENDIX XIV

COMMUNITY MEETINGS AND CORRESPONDENCE

COMMUNITY MEETINGS AND CORRESPONDENCE

1. The applicant and team members meet with the Ewa Villages Owners' Association to discuss the proposed project and to request their support. The meetings dates were as follows:

January 22, 2007

April, 16, 2007

Attached is a support letter from the Ewa Villages Owners' Association to Mayor Mufi Hannemann dated July 10, 2007.

2. The applicant and team members presented the proposed project to the Ewa Neighborhood Board on the evening of July 12, 2007. A motion was made not in favor of the project at this time as more information is needed. The motion failed with a 5 to 4 vote (need 6 votes to pass).



Ewa Villages

Owners Association

c/o Certified Management, Inc.
3179 Koapaka St.
Honolulu, HI 96819-5199
Contact# 478-9170

Action Memorandum

Date: July 10, 2007

To: Mayor Mufi Hannemann
Director Henry Eng, Department of Planning and Permitting
Council Member Todd Apo
Richard Hargrave, Ewa Neighborhood Board Chairperson

From: William S. Gonsalves, EVOA President

Subject: Ewa Industrial Park, LLC dba. Ewa Commercial Park

Over the last 6 months this developer has been working diligently with the communities that will be impacted by the project specifically the EVOA and we are pleased to report all issues raised has been addressed satisfactory.

The agreed upon items are as follows:

- Zoning for the project will not allow for demolition, metal recycling/vehicle storage, chemical/gas storage, hazard material, or that type of businesses.
- No traffic from the project will be entering onto Renton Road until Renton Road is developed to C&C standards as described in the Ewa DPP.
- The Project area will be secured, buffered, with set operating times that will fall within the range of 5 am-10 pm. To minimize noise impact on neighboring communities. Security from 6:00 p.m. to 5:00 a.m.
- Architecture will be consistent with area buildings, landscaping and maintenance will screen project perimeter from view of the surrounding streets.
- As all other development projects along the Ewa plain the owner is committed to partnering with the EVOA resulting in a binding agreement for the future EVOA community center. Details are on file with the property management company and the board of directors.

We look forward to benefiting from the success of this project and all the jobs, commercial space, and other opportunities it will bring to the Ewa plain.

Sincerely,

William S. Gonsalves

William Gonsalves
President

Poyer Gau
Vice President

Aaron Ali Tampos
Secretary & LG Director

Melvon Ahlo-Pinera
Treasurer & TV Director

Reggie Castanares
Director (LV)

Annette Dano Abcede
Director At-Large

Glenn Maeda
Director (C&C)

Tesha H. Malama
Association Manager

Ronna Price
Account Executive
837-5238

Jackie Horiuchi
Admin. Asst.

Motooka Yamamoto
& Revere
Attorney
532-7900

Insurance Associates
Inc.
Insurance
538-6938

[Government](#) | [Kama'aina](#) | [Business](#) | [Visitors](#) | [Kids World](#) | [Seniors World](#) | [On-Line Services](#) | [Economic Development](#)

Quick Find: Select One:

Search:

GO

You are here: [Main](#) / [Neighborhood Commission Office](#) / [nb23](#) / [07](#) / [Ewa NB October Minutes](#)

Printable version (copy and paste into browser):

 <http://www.honolulu.gov/nco/nb23/07/23200710Min.PDF>

EWA NEIGHBORHOOD BOARD

MINUTES OF REGULAR MEETING THURSDAY, OCTOBER 11, 2007 EWA BEACH PUBLIC LIBRARY

CALL TO ORDER: Chair Hargrave called the meeting to order at 7:05 p.m.; a quorum was present. Chair Hargrave announced that the Ewa Neighborhood Board No. 23 members have imposed a time limit policy for all issues presented to the Board. One-minute time limits are imposed for all public input per person, per subject is allowed.

MEMBERS PRESENT: Scott Belford, Jeff Alexander, Charles Beamer, Mitchell Tynanes, Gary Bautista, Thomas Berg, Philip Dowland, Rich Hargrave, Anne Atkinson.

MEMBERS ABSENT: Garry Smith and Clay Ah Soon.

MEMBERS' SEATS VACANT: None

GUESTS: Ron Ogokori (Kobayashi, Sugita, & Goda), Lloyd Sueda (Sueda & Association), LtCMDR LaConta Coleman (NAVMAG Pearl Harbor), Hana Thompson (JCHS S.C.C), Taetuli Tafai, Valentine Peroff, Jr. (Ewa Industrial Park), John M. Gollner III (Representative Pine's Office), Joyce Oliveira (Mayor's Office), Russ Fukushima (Ewa Industrial Park), Tesha Malama (Ewa Villages), Lisa Enanoria (Haseko), Dee White, Captain Bruce Carvalho and Firefighter Mark Yoder (Honolulu Fire Department – Ewa Beach), Steve Ford, Cal Sueoka (Board of Water Supply), Mark Lester Hernandez (Department of Education), Issac Fujikawa, Erickson B. and Oscar Ramiscal (JCHS Saber Media), C.M. Lynn (Lions B&6's), Sgt. Ron Ige (Honolulu Police Department – Weed & Seed), Lt. Michael Johnson (Honolulu Police Department, Kapolei – District 8), Kurt Fevella, Gary Omori (HHCTCP), Gale Bracerros (Weed & Seed Ewa), Celeste Lacueste, Mary K. Serrao (Pu'uloa Outrigger Canoe Club), Chanel Bumanglag (Hui o Pupu Ao Ewa), Hans Apisaloma, Tommy Johnson (Governor's Office), Representative Kimberly Pine, Keith Kurahashi (Kusao & Kurahashi), Glenn Oamilda, Scott Ishikawa (State Department of Transportation), Senator Will Espero, Nola Frank (Neighborhood Commission Office Staff).

INTRODUCTION OF BOARD MEMBERS: The roll call of Board members was administered with nine members present (Belford, Alexander, Beamer, Tynanes, Bautista, Dowland, Hargrave, Berg, and Atkinson).

Without objections item 5.A – Reconfirmation of Ewa, Ewa Beach, & Zip Code Area 96706 Statement under Announcements will be moved to Unfinished Business item 7.B. and item 10.D Committee Reports Legislative & Capital Improvement Program will be moved to Announcements.

Discussion – Alexander questioned if the original resolution was available along with the new resolution this evening for review. Chair Hargrave replied no and explained that the Parks Board had denied the original resolution that was submitted. He asked if Alexander would like the item deferred until next month's meeting. Alexander replied that the issue should be discussed this evening.

Vice Chair Berg reminded Board members and guests about conduct of the meeting, Board's time limit policy, and announced that Board member Tynanes would be tonight's timekeeper.

BOARD BUSINESS:

Review and Acceptance of the Regular Meeting Minutes for September 13, 2007: Chair Hargrave asked if there were any additions or corrections to the minutes of September 13, 2007. **Alexander moved, seconded by Bautista to accept the regular meeting minutes of the September 13, 2007 as written. The motion was adopted unanimously, 9-0-0.**

Treasurer's Report – Treasurer Belford report for the month of September expenditures in the Operating Account were \$59.75 leaving the balance at \$3,675.66; Publicity Account expenditures were \$11.28 leaving the balance at \$2,188.72; No expenditures were incurred in the Refreshment Account leaving the balance at \$120. The Treasurer's report was accepted, subject to audit. In response to an audience member, follow up will be done if the Board's financial statement is public information.

REPORTS:

Honolulu Fire Department (HFD) – Captain Carvalho reported:

- Statistics for the month of September included 4 brush, 1 rubbish fire and 2 vehicle fires, 64 medical, 1 search/rescue, and 11 miscellaneous (assist, cancel enroute, odor of smoke, activated alarms) emergency responses; major incidents were 2 brush fires with 5 companies responding to each in the area of North Road and Iroquois Point; no unusual incidents.
- Fire Safety Tip: When selecting Halloween costumes, ensure they are flame-resistant, made of lightweight fabric, brightly colored, and clearly visible to motorists. Decorate costumes and bags with reflective tape. Keep the length of costumes short to prevent tripping. A natural mask of cosmetics is better than a mask that may restrict breathing or obscure vision. Children should carry flashlights to light their way.
- The Honolulu Fire Department would like to remind the community that HFD provides assistance to the Honolulu Emergency Services Department (20 units) by responding cooperatively when the need for emergency care arises. Due to the HFD's 42 fire stations and the HESD's ambulance units, we are able to provide quality patient care and protect the citizens of the City and County of Honolulu.

Questions, answers, and comments followed: Two acres were affected from the fire, one from a stolen auto and the other is still under investigation. The community can assist by calling 911 if they see smoke in an unusual area or criminal activity. Captain Carvalho was thanked for his report.

Honolulu Police Department (HPD) – Lt. M. Johnson reported statistics for September included robbery 1, burglary 46, thefts 36, auto theft 19, theft from vehicle 21, ID theft 1, MVC (motor vehicle collision) 58, DUI 3, property damage 19, and drugs 2; total calls for the area was 1,792.

Crime Tip of the Month: The Live and Let Live Program is a community traffic awareness safety program that combines community resources with The Honolulu Police Department in making our communities a safer place to live. This will be the first year that the program will be branching out from Waianae to Kapolei and Ewa areas. A traffic poster contest, sign waving and traffic awareness activities are combined to alert the community to drive safely during the holiday season and throughout the year. Crash car displays will be placed at the Kapolei Fairgrounds and Fort Weaver Road and Aawa Drive. Community members interested in participating in this program should contact Officers Michael Kahikina or Halani Barboza at the Kapolei Police Station at 692-4250.

Questions, answers, comments:

1. In response to Bautista, there is a present law allowing minors (14 years old and above) to ride mopeds with a helmet. Weight requirements are for children in car seats.
2. Bautista once again raised concerns regarding 16 wheeler trucks that should not be allowed to use Renton Road that is substandard. In response to LT. M. Johnson's knowledge there are no restrictions to road usage including substandard roads, but roads will be torn up quicker with heavy truck usage. Bautista suggested permits be issued for a fee to trucking companies using Renton Road.
3. Lynn commended HPD for information relative to the "Live and Let Live" campaign. For clarification Lt. Johnson said to "just drive safely."
4. Lacueste thanked the officers who responded to the accident on Fort Weaver Road where a teenager fell asleep at the wheel and hit and killed a construction worker. She noted more officers like them would be appreciated by the community.
5. Chair Hargrave noted the receipt of several email concerns about graffiti and asked how the problem is addressed by HPD. In response, if a tagger is caught for CPD (criminal property damage), the items (spray paint etc.) are confiscated, the suspect charged and prosecuted, the rest is up to the courts. The community should call 911 if they witness tagging; parents should keep track of their children. Regarding business getting tagged, those are targets of opportunity. Lt. Johnson was thanked for his report.

Ewa Weed & Seed Unit (HPD) – Gale Bracerros, representing Weed & Seed Ewa, said that the crime statistics would be provided next month and was available for questions.

Questions, answers, comments: 1) There were no particular issues. 2) White thanked Weed & Seed for their assistance and support not allowing food truck vendors entering the school boundaries because of safety for the students. 3) Officers Muraoka and Ramos were commended for addressing the traffic issue within the school area. It was mentioned that Officer Muraoka also spoke at an assembly of students in grades K-6 regarding pedestrian safety. 4) White announced the Ewa Christmas Parade on December 16. 5) Belford announced that Bracerros was McGruff the Crime Dog; Bracerros and Eileen Lynn were two out of 118 nationally recognized for their work with the Weed & Seed. Bautista suggested certificates of appreciation from the Board at the next meeting.

Bracero was thanked for attending the meeting.

Board of Water Supply (BWS) – Cal Sueoka reported:

- There were no water main breaks for September.
- October is "Make a Difference Month," and BWS would like to encourage everyone to make a difference by helping to preserve and protect our precious water resources.
- Per the recent news, a man was recently sentenced to five years in prison for stealing copper from a BWS facility. BWS was able to prosecute this thief thanks to the help of a surrounding resident who witnessed the thief in action and called 911. If you see any sort of suspicious activity (illegal dumping, vandalism, etc.) contact 911 immediately. These criminal acts not only

impact our facilities, but as ratepayers, it cost you money.

Questions, answers, comments: 1) Regarding recycled water, BWS is targeting large businesses such as golf courses and industrial customers. Haseko will soon be online using recycled water. The recycled water is currently for commercial use only because it needs dual piping, and may be available for residents in the future. 2) Regarding illegal situations at BWS sites, BWS is asking the public to call 911 if witnessing illegal activity for a quicker response and HPD will notify BWS. 3) Regarding the safety of the water in area where copper thefts has occurred, since 9-11 private security has been hired to patrol the BWS sites.

Sueoka was thanked for his report.

Military – Lt.CMD. Coleman reported the Iroquois Board with the Navy is doing evaluation and coordination with Pearl Harbor and Ford Island regarding ships entering/exiting the harbor. Regarding Iroquois Point Housing public access, Steve Cullen is coordinating a meeting with City and State officials and Coleman will check if residents would be allowed to attend this meeting.

Questions, answers, comments:

1. Belford commented that there are two levels of discussion taking place regarding the Iroquois Point public access, the community and the Navy. Coleman responded that the Navy Command is discussing harbor security, parking in the housing area, and looking for a food vendor for the area. West Loch provides services for that facility with a contract with the Navy Exchange. Interested vendors may contact Coleman at 368-3141.
2. Follow up will be done if watercrafts, such as the ferry, are part of the discussion.
3. Oamilda relayed that the community's access concerns dialog was not concluded to the government, and that residents of Iroquois Point are part of the community. The community is trying to get rational and equal beach access. There seems to be a division between the community and Iroquois Point residents. He asked the Chair if the Board could have a Special Meeting with the Iroquois Point residents. Chair Hargrave agreed. Tuli stated that it is not a good idea to use the word division; instead of waiting for the Iroquois Point people it is a good idea that the Board goes to them. Chair Hargrave asked for suggestion and input if a meeting could be created.
4. Alexander suggested waiting for the proposals from the Navy before having the special meeting.
5. Chair Hargrave asked Coleman if the input from the community would have any impacts on the decision. Coleman replied that all input should be sent to Lynn Tanaka, Base Commander's Secretary, to give to the Commander.
6. An Iroquois Point comment sheet was suggested with the results sent back to the Board for follow up.
7. Suggestions/input from a special meeting submitted from the Board may be helpful to the decision making body and may be taken into consideration.

8. Chair Hargrave commented that meetings are going without community input. Coleman replied they are looking only at Navy issues not community.
9. Favella commented that this issue has been going in circles for four years. He reminded Board members if a meeting is held only two could attend due to the sunshine law. He is against the gate as others but agreed with submitting findings and that the Board sponsor a special meeting.
10. Lynn noted a special meeting would be in the Board's best interest, and asked if there is actual documentation that could be provided to the Board.
11. Lacueste wanted to know how many civilian residents live at Iroquois Point
12. Oamilda added that foresight issues should be discussed at the special meeting and asked that an agenda be set in the next couple of weeks. Chair Hargrave reminded all that a special meeting agenda must be noticed six days prior to the meeting.
13. Lynn added to his understanding it is up to the management company to gain access, even for a meeting.
14. Bautista was in support of a meeting and suggested using the Iroquois Point Elementary School for the meeting. Chair asked Board members Belford and Bautista to work as a team and welcome community assistance with the agenda. Oamilda noted a list of recommendations is available.
15. Consensus was to hold a special community meeting with the Iroquois Point residents for their input relative to public access.

Coleman was thanked for his report.

ANNOUNCEMENTS:

- The Pearl City Neighborhood Board No. 21 is having an all Committees' Meeting, Tuesday, October 16, Highlands Intermediate School at 7:00 p.m., and on the agenda to be discussed is the 2007 Revised Neighborhood Plan Draft.
- The Neighborhood Commission will be holding public hearings on the 2007 Revised Neighborhood Plan Draft: 1) Saturday, November 3, 2007, Kapolei Hale Conference Rooms A-C from 10 a.m. to 12 p.m. 2) Saturday, November 3, 2007 Windward Community College Hale Akoaka Building, from 2 to 4 p.m. 3) Monday, November 5, 2007, Mayor's Conference Room 3rd Floor at Honolulu Hale from 6 – 9 p.m.
- The Ewa Neighborhood Board No. 23 will be shown at 9:00 p.m. Saturday evenings on Channel 49 `Olelo Cable Television.

Other:

1. Ewa Beach McDonald's World Children's Day, Friday November 16; interested volunteers may contact Marilyn Furuta by October 15 at 676-7730.
2. PBR Hawaii Planning Workshop, October 18 from 7:30 to 9 p.m. regarding the Villages of Kapolei (Fort Barrett Road and Farrington Highway), 91-111 Kamaaha Loop.
3. Campbell High School – School Community Council's Community Meeting #1, Thursday November 15, 2007 from 6 – 8 p.m. Campbell High School Cafeteria; free spaghetti dinner and babysitting provided. Call Rowena Martinez at 689-1200 ext. 2226 to RSVP by Monday, November 12. Walk-ins welcome.
4. Halloween Bash – Dee White announced the City Department of Parks and Recreation is sponsoring a Halloween Bash on October 26, from 6-9 p.m. at the Ewa Beach Community Center; for more information call White at 368-6206.

PUBLIC GENERATED ISSUES/COMMUNITY CONCERNS:

Fort Weaver Road Widening Update – Scott Ishikawa, of the State Department of Transportation, circulated the project phasing map for the Fort Weaver Road widening and reported:

The drainage design has had a slight change with DOT working out a rent agreement with one owner regarding entry. Survey crews are on the road doing temporary restriping, concrete barriers, and will dig two inches down to build the foundation. The project will be done in three phases, and each phase opened as completed and as the phase's progresses. A possible camouflage hedge will be planted fronting the median. Contractor Klewitt Pacifica started on September 13. Phase 2 will commence next month.

Questions, answers, comments:

1. Berg asked if the project includes the reconfiguration of Renton Road. Follow up will be done.
2. The North/South Road /Farrington Highway overpass is a City road.
3. Per the map handed out, Alexander suggested it included the East direction.
4. Berg clarified that in September 2006 the Board took a position and passed a motion that the State take care of the East/West connector road.
5. Bautista noted that the DOT put delineators on Renton Road. The answer was that Renton Road is City owned. Bautista add that the road should be extended closer to the stoplight.
6. Oamilda expressed offense to the report because at a meeting in the spring a list from the community relative to improvements, it has yet to hear the responses, asked for responses. Berg replied that elected officials were at that meeting and DOT Director Barry Fukunaga responded to all questions to the elected officials. Belford added that letters of response were sent to Representative Cabanilla's office, and read the responses. Oamilda commented that it

was previously requested that this matter be placed on the Board's agenda, which did not happen; and communications between government and community is not working. Ishikawa said he did report at the June meeting.

7. Scheduled construction hours will be from 10:30 a.m. to 3:00 p.m., Monday-Friday in both directions with single shoulder lanes. Concrete barriers will be put in place to separate the workers from the traffic. No night work is anticipated.
8. It was suggested that Renton Road be pushed back further because cars are cutting through the gas station cutting other drivers off to beat the traffic light.
9. The bus shelters would remain where they are situated; and project timeframe is two years.
10. A suggestion was made to move the medial strip to create a lane, thus not intruding the neighbors with an increase of noise from the traffic.
11. In response to a question arose if the North/South Road would benefit the Ewa Beach residents, it currently takes about a half hour from Ewa Beach to the H-1, and this road would provide another in and out of the area to alleviate traffic. Other fixes are also being explored.
12. Concern was expressed regarding head-on collisions and it was asked if the median would have landscaping. A comment was made to lower the speed limit to 35 miles per hour.
13. A comment was made that the North/South Road is no benefit to the Ewa Beach community and a waste of money.
14. Favella commented that the North/South Road was, and is still in Ewa Beach.

Scott Ishikawa was thanked for his report.

UNFINISHED BUSINESS:

8:43 Hargrave relinquished the gavel to Vice chair Berg and left the room (8 members present).

COMMITTEE REPORTS:

Legislative & Capital Improvement Program - Berg reported at the All Committees' Meeting earlier this evening, members voted to bring to the Board the request of drafting a letter from to OMPO regarding support of HB70 HD3, relating to public private partnerships.

A request to the November agenda was made to discuss the North/East Road.

HB 1547, Relating to International Affairs (legislative protocol fund) and HB 1549, relating to motor vehicle accident investigation (highway safety accident investigation money) was supported. Discussion followed: 1) Berg explained that the draft letter be submitted to the OMPO CAC Policy Committee prior to their meeting on October 22 for consideration.

Berg moved, seconded by Alexander that a letter be drafted by Chair Hargrave on behalf of the Board to OMPO Policy Committee Chair Senator Espero requesting the committee to urge the Senate Transportation Committee to hold a hearing on House Bill 70 House Draft 3. The motion was adopted unanimously, 9-0-0.

8:46 p.m. Hargrave resumed order of the agenda (9 members present).

Board December Recess – Alexander moved, seconded by Bautista that the Board not recess in December. The motion carried unanimously, 9-0-0.

Reconfirmation of Ewa, Ewa Beach, & Zip Code Area 96707 Statement – Discussion followed:

1. Chair Hargrave explained that the original Board resolution was rejected by the City Parks Board because the Parks Board felt that the community was not united at that time and deferred the action until a later date. As mentioned at the Board's August meeting he offered to do a draft resolution and submitted to the City Parks Board; there were no objections. The draft resolution was emailed to all Board members for review and the City Parks Board meeting on October 2. The item is on tonight's agenda for Board comments, if any or amendments to the draft resolution and for Board action. Alexander asked for clarification in which Chair Hargrave replied that timing was important due to the City Parks Board meeting; and noted if there are any amendments to the resolution a revised copy would be resubmitted to the Parks Board.
2. Berg suggested the draft resolution regarding Geiger Park closure be changed to 11 p.m. noting that reference to change by one hour does not warrant tax payers dollars. Also, if the park closes at 7 p.m. people with park permits may remain in the park.

Berg moved seconded by Bautista amending the resolution that Geiger Park retain the 11 p.m. closure, but include those with permit the 7 p.m. The motion was adopted unanimously, 9-0-0.

Discussion: 1) Chair Hargrave added that the resolution was a Board and community effort with members of the ad-hoc committees. 2) Belford noted that he voted with reservations. 3) In response to a comment that the Board should follow up on issues especially with developers, Chair reiterated that written concerns are always helpful.

NEW BUSINESS:

Proposed Ewa Industrial Park – Ron Ogokori gave an update reporting that a copy of the final Environmental Assessment (EA) was given to the Board. The proposed site for this project is located at 91-1343 Fort Weaver Road with the wastewater treatment facility to the south, the golf course to the east, and an open area and Hongwanji to the west. Phase II of the project should start in 2010 creating about 1700 local jobs. Phase 1 = 23.3 acres and the Ewa Developmental Plan designates this area as industrial; requires rezoning from AG-1 Restricted Agricultural District To I-2 Industrial; Anticipated Start Date – 4th Quarter 2008. Owners Operations Restricted through I-2 Zoning, CC&R's - business hours and noise control. Prohibited businesses are petroleum processing plants, explosives and chemical manufacturing or storage plants, agricultural products processing plants, salvage yards, waste disposal plants, composting plants, recycling plants, and demolition plants. The buildings will be plantation style with green metal pitched roofs and canopies. The walls will have a Hawaiian motif with earth colors. Phase 2 = 25.095 Acres, Ewa Developmental Plan designates this area as Industrial requires State Land Use Boundary Amendment from agriculture to Urban; then rezoning from AG-1 Restricted Agricultural District to I-2 Industrial.

A traffic study completed June 2007 concluded that the timing of the project and planned road improvements would not impact traffic. The developer will help with area traffic by participating in Geiger Road improvements

Berg moved, seconded by Dowland in support of the proposed Ewa Industrial Park project.

Discussion followed:

1. Alexander opposed the height limit variance and said there is not enough parking. He added a copy of the traffic study was requested several months ago and did not receive one. Kurahashi replied that the EA is complete. The developer is proposing only 20 percent of the density allowed by the county. The roof top would be thirty-six feet high with an architectural design;

one parking stall is allowed per 1500 square feet, but more parking stalls are being increased to 2100 parking stalls.

2. Berg commented that the final impact analysis report is the most extensive and intensive report he has read.
3. Atkinson asked what types of jobs are being proposed. In response, local businessmen, contractors, architects, etc. Regarding the widening of roads, the City Department of Transportation Services will determine how many feet the existing road could be widened..
4. Belford noted that the developer proactively exceed the City's expectations and put the roads in first. In answer, two developers are responsible for changes to Geiger Road and they are open to recommendations from the Board. Regarding having no recycling, follow up will be done as to the Land Use Ordinance in the process.
5. An audience member said the development abuts her property, is welcome, but there are concerns about two large buildings next to the wall. The response was that it is anticipated that a pitch roof (36 feet) with 22-foot eaves would be built on the buildings. She asked that the business use adjacent to the neighbors be limited to exclude bars, businesses using chemicals, audio installation shops, etc., for the safety of the children living next to the property.
6. The road widening would start from the wastewater treatment plant to Kapolei Parkway with a bike path, drain system, and increase from two to four lanes.
7. All surrounding walls will be six-feet high of concrete for the perimeters.
8. Resident Chanel asked if the developer would be willing to share the waterline because it is difficult in getting water meters through the neighboring properties. The engineer replied that there are waterlines on Geiger Road.
9. Oamilda expressed concern relative to traffic and jobs. He thinks that the project would not increase jobs; stated that Verona Villages are dilapidated. The developer should give back to the community as a good neighbor.
10. Atkinson asked if the developer would assist the Rail Road Historic Society if they are impacted. In answer the owners are in support and would help the main historical site.
11. With an additional 1390 vehicles entering Geiger Road entrance, Alexander wanted to know if a traffic light would be installed. Kurahashi replied that DTS decides if a traffic light is installed.
12. Lynn was in support of the project.
13. Malama, President of the Ewa Villages Association, relayed that the EA is complete and that

the consultants went out into the community and were willing to make changes. She asked that the Board support the project.

14. Bautista raised a point of order regarding Alexander's verbal abuses on the speakers. Chair acknowledged the point of order asking all Board members to address remarks to the Chair and exercise order and decorum.
15. Multiple points of orders were raised regarding Oamilda speaking out of turn. Chair acknowledged the point of orders and reminded attendees to address all remarks to the chair and exercise order and decorum.

Bautista moved for a recess. The motion failed for lack of a second.

9:50 p.m. Bautista left the meeting room (eight members present).

16. Favella and Taetuli were in support of the project.
17. Board members and attendees were reminded of the time limits and order and decorum.
18. Atkinson noted that she did not see the copy of the final EA and may have to abstain from voting. Berg reminded all that a copy of the EA is available at public libraries.

9:55 p.m. Bautista returned to the meeting (nine members present).

19. Belford raised concern with Board and audience members being allowed to verbally attack the developers. He noted that the development for 1,000 proposed new homes cannot be stopped. He added the proposed development is a critical area commercial property. He questioned if it fear, uncertainty, or doubt cause the insults to the developers. He asked that the one-minute time limit be enforced and to move on with the vote.
20. It was stated that Board members and guests be courteous.

The motion was adopted 6-1-2; Aye – Belford, Beamer, Tynanes, Berg, Dowland, Hargrave; **Nay** – Alexander; **Abstention** – Bautista and Atkinson.

Access Medical Clinic in Ewa – There was no representative present.

10:02 p.m. Alexander left the meeting (eight members present).

REPORTS BY ELECTED OFFICIALS:

Mayor's Representative – Joyce Oliveira, representing Mayor Hannemann, reported:

1. The Second Annual Transit Symposium will be held on Tuesday, November 13, 2007, Neal S. Blaisdell Center, from 8:00 a.m. – 5:00 p.m.
2. Regarding having the fixed guideway to fully serve the Ewa community by the bus, most of

Ewa and Ewa Beach is well served by the trunk circulator, and express routes 41, 42, 44 91, and 101. Specific areas of this region are not served at this time are Iroquois Point – unable to serve due to limited access, distance, and time constraints; Ocean Pointe will be served when sufficient roadways are dedicated to City, pending available resources; West Loch Estates – Circulator service can be budgeted for in anticipation of High Capacity Transit implementation.

3. The Department of Transportation Services (DTS) will be issuing a work order to install a marked crosswalk and appropriate pedestrian warning signs on Manawai Street at Haumea Street. They will also install painted median islands in conjunction with the marked crosswalk to improve the safety of the crossing. The median will provide a refuge area for pedestrians, whereby they would only need to look out for one direction of traffic at a time. Furthermore, the distance pedestrians are required to cross in conflict with motorist will be reduced. DTS would also like to inform the community that with the installation of the painted median, parking will be restricted on the northeastern side of Manawai Street in the vicinity of the marked crossing. This action is necessary to ensure the safe and proper movement of traffic and pedestrians. The work order will be issued after the required legal notice has been published.

Questions, answers, comments: 1) Berg inquired if Farrington Highway will be constructed at any point in time be able to fly-over overpass over the North/South Road. Follow up will be done. 2) Bautista raised concerns about 16 wheeler trucks using Renton Road, which is substandard. He asked if a possibility issuing paid permits for large truck using this road. Follow up will be done. 3) Regarding the trees needing trimming on Renton Road, Oliveira replied she will check with the City Department of Parks and Recreation; possible date is November or December. 4) Favella commented there is no reason for semi-trucks to use Renton Road, and suggest a Board motion prohibiting large trucks from Renton Road. 5) Lacueste wanted to know the cost of the bins for curbside recycling. Chair Hargrave reiterated that concerns in writing would help. Oliveira was thanked for her report.

Councilmember Todd Apo – The monthly newsletter was available for interested persons to review.

Governor's Representative – Tommy Johnson reported:

Governor Lingle and chairman of Walt Disney Parks & Recreation announced Disney's plans to build a family resort on the Leeward Coast of O'ahu. Delegates at the Department of Health's 2007 Physical Activity and Nutrition Summit to "turn ideas into action and just get moving," as part of her Administration's commitment to promoting healthy lifestyles among Hawaii residents. Alvin Takanuma will correct the left turn lane on Roosevelt Road.

Questions, answers, comments: Berg asked if the State Department of Transportation has identified the right-of-way/easement for the public (alternative to augment route to town), noting rail may prohibit any elevated roads. Johnson was thanked for his report.

Senator Will Espero – Senator Espero circulated his written report and noted:

1. Thanked all those who participated with the Children's Fun Day that was held at Holomua Elementary School on October 6.
2. The earliest date for a special session regarding the Superferry would be October 22, 2007.

Questions, answers, comments: 1) Favella stated he supports the Superferry. 2) Yes, there will be busses to serve the rail stations. Espero was thanked for his report.

Representative Rida Cabanilla – The monthly newsletter was available for interested persons to review.

Representative Kimberly Pine – Representative Pine reported:

A poll is being conducted within the district asking Ewa and Ewa Beach residents how they would like her to vote on the superferry issue. Previous legislation requiring an Environmental Assessment died. A question was posed, if an Environmental Impact Statement (EIS) is be required for the superferry, would all ships then have the same requirement. In answer, a special session would be useful for further discussion.

The State Department of Transportation (DOT) and the Federal Aviation Administration (FAA), selected precise locations for two FAA approved noise monitors in Ewa Beach to monitor aircraft noise.

The representative apologized that no representative from the Board were invited to the Iroquois Point meeting.

Regarding opening of TheBoat, parking at the pier is inadequate and there are access issues.

Questions, answers, comments: 1) Favella mentioned that the Iroquois Point developer took space designated for parking, asked if there are alternatives for the community, and requested the gate be opened. In response a map of the area would be requested to find out what portion is being used by the developer. 2) It was suggested that commercial aircrafts use the reef runway. 3) Regarding the DOT and FAA taking noise readings, it was suggested that air quality reading be included. Gollner added that readings would be available in about two weeks if the noise is at acceptable levels. The monitors would remain for approximately a year. 4) Favella raised concern that federal money is being used for the monitors, but could be put to better use. Pine was thanked for her report.

Board of Education Member – No representative was present.

COMMITTEE REPORTS: There were no committee reports.

ADJOURNMENT - The meeting adjourned at 10.41 p.m.

Submitted by Nola Frank,
Neighborhood Assistant

Review by Rich Hargrave,
Chair

Friday, November 02, 2007

© Copyright 2002-2008 City and County of Honolulu, Hawaii

[Privacy Statement](#) | [Technical Support](#) | [Customer Service](#) | [Policy](#) | [Accessibility](#) | [Diversity Statement](#)


[Government](#) | [Kama'aina](#) | [Business](#) | [Visitors](#) | [Kids World](#) | [Seniors World](#) | [On-Line Services](#) | [Economic Development](#)

Quick Find:

Search:

You are here: [Main](#) / [Neighborhood Commission Office](#) / [nb23](#) / [07](#) / [Ewa NB July Minutes](#)

Printable version (copy and paste into browser):

 <http://www.honolulu.gov/nco/nb23/07/23200707Min.PDF>

EWA NEIGHBORHOOD BOARD

MINUTES OF REGULAR MEETING THURSDAY, JULY 12, 2007 EWA BEACH PUBLIC LIBRARY

Chair Hargrave apologized for not picking up the key to the library. He announced that the Board decided to have a short meeting fronting the library.

CALL TO ORDER: Chair Hargrave called the meeting to order at 7:10 p.m. a quorum of ten members was present.

MEMBERS PRESENT: Garry Smith, Scott Belford, Jeff Alexander, Charles "Dick" Beamer, Clay Ah Soon, Mitchell Tynanes, Gary Bautista, Thomas Berg, Philip Dowland, Rich Hargrave.

MEMBERS ABSENT: All Board members were present. Sub district 2 Vacancy-One Seat (Honouliuli, Ewa, Ewa Mauka, Ewa Villages, Geiger Road).

GUESTS: Wendy Sefo (Councilmember Todd Apo's Office Staff), Susana Helm (U.H. Manoa), Breene Harimoto (Board of Education), Lt. Commander LaConta D. Coleman (U.S. Navy Magazine Pacific), John Gollner (Representative Kimberly Pine's Office), Ross Tanimoto (City Department of Environmental Services), Henry Chang Wo, Jayne Kelley Uyeoka and Lee Carson (Hale Kipa), L. Taipan, Chanell Sabala-Bumanlag (Hui o Pupa'o Ewa), Hans Apisaloma, Jr., Keith Kurahashi (Kusao & Kurahashi, Inc.), Matt Pickens and Nate Chanchareon (Wilber Smith & Associates), Anne Kusao (Kusao & Kurahashi, Inc.), Ron Ogomori, Ralph Fukushima, Lloyd Sueda, Val Peroff (Ewa Industrial Park), Tommy Johnson (Department of Public Safety/Governor's Representative), Debra Lining (Gentry Homes, Joyce Oliveira (Mayor's Office), Luis A. Parker, Kurt Fevela, Cindy Ramirez (Councilmember Todd Apo's Office Staff), Cliff Ahona (Hui Pupu A'o Ewa), Gale Bracerros (Ewa Weed & Seed), Frances Rivero (Boys and Girls Club), Lisa Enanoria (Haseko), Cecelia Chang (Honolulu Community Prosecutors), Glennon T. Gingo, Pauline C. Espero, Senator Will Espero, Celeste Lecurt, Mary K. Serrao (Pu'uloa Outrigger Canoe Club, Sgt. E. Namoca (Honolulu Police Department - Weed & Seed), Captain Ray Ancheta, Assistant Chief Bryan Wauke, Major William Chur, Major Clayton Saito, Lt. Mark Ward, Lt. Aaron Correia (Honolulu Police Department-Homeland Security), Diane Reece (Child and Family Services), Earl Arakaki, Nola Frank (Neighborhood Commission Office staff).

INTRODUCTION OF MEMBERS – The roll call of Board members was administered with a quorum of ten members present.

BOARD BUSINESS:

REVIEW AND ACCEPTANCE OF THE REGULAR MEETING MINUTES OF JUNE 14, 2007 – Chair Hargrave asked if there were any corrections/additions to the minutes:

- Page 5 after 9:05 p.m. Chair Hargrave called a recess add, "...HPD was called at 9:06 p.m.

Without objections the regular meeting minutes of June 14m, 2007 was accepted as corrected.

TREASURER'S REPORT – Deferred.

VICE CHAIR - ESTABLISH CONDUCT OF MEETING – Deferred.

FILLING OF BOARD VACANCY, SUBDISTRICT 2, ONE SEAT FOR TERM ENDING MAY 31, 2009

– Bautista nominated John Gollner to fill the vacancy. Gollner declined saying he just recently moved out of the Subdistrict. Berg suggested Subdistrict clarification for all nominees. There were no other persons present interested in filling the vacancy.

In response to a question the Board's committees have been formed.

REPORTS:

Honolulu Fire Department (HFD) – HFD was present earlier, but left on an emergency call.

Honolulu Police Department (HPD) – Chair Hargrave reported:

1. Statistics for the month of May compared with June were burglaries 46/39, thefts 40/43, and thefts from vehicles 22/24.
2. Sgt. Namoca relayed the Safety Tip for the Month: Unauthorized Entry into a Motor Vehicle (U.E.M.V) – A UEMV , commonly know as a vehicle break in occurs daily within the district. UEMV's happen at beach parks, shopping centers, business establishments, along roadways and next to our homes. Tips to avoid falling victim to a vehicle break in: a) Do not leave valuables in plain view in unattended parked vehicles. The items will attract criminals, if seen. b) Vehicle alarms are a good deterrent to UEMV's. Criminals don't want attention. c) When going to any of the beaches on Oahu, try to park close enough to hear and see your vehicle. d) Call **911** to report suspicious people or activities when driving or walking in parking areas. For information regarding a Neighborhood Security Watch for your area call the Kapolei Community Police Team at 692-4247.
3. Weed and Seed statistics were circulated for interested persons to review.

Questions, answers, comments followed:

1. A concern was raised about a hazardous situation near the bus stop on Roosevelt Road across from the railway station. Lane striping was done by the State, but not in the area of the bus stop. He suggested a left hand turn be created and the bus stop be moved; HPD was asked to monitor the area.
2. Excessive speeding was reported on Hailipo Street from Kapolei Parkway to Papipi Road to Pohakupuna Road to Fort Weaver Road. Sgt. Namoca replied the area will be monitored and a report given at next month's meeting.

HPD Storage Facility – Captain R. Ancheta and Lt. M. Ward from the HPD Homeland Security reported: The Honolulu Police Department has been looking for a storage facility since 2001 and a site offered to the department is the old Ewa Mill property off of Renton Road. The purpose for the facility is to use it for equipment storage and maintenance. It is a win - win situation for HPD and the community having more police presence in the area. Building 22 (large one) will be utilized by HPD. Ancheta mentioned that the Records Division is in need of a bulk evidence storage facility. HPD is

currently meeting with the City Departments of Facility Maintenance and Design and Construction for a long-term storage facility. Little activity would be taking place at the facility with work being done during the day hours. An adjacent structure is also being considered. Ancheta reiterated that the new structure would be built next to the existing building. The Ewa Villages Homeowners Association is yet to be approached; it was decided to come to the Board first. HPD is aware that the area is in preservation. Plans are to introduce themselves to the community. Ancheta emphasized the need for this storage facility. Chair Hargrave reiterated that there will be more police presence in the area. Due to the preservation area, Assistant Chief Wauke said that several alternate sites were looked at. The Records Division is also in need of a storage facility and possibly another building could be erected on the site.

Ewa Weed & Seed Unit (HPD) – Sgt. Namoca circulated the monthly statistics and was available for questions.

Board of Water Supply (BWS) – Cal Sueoka reported:

1. No water main breaks for the month of June. While Oahu has experienced a dryer than normal winter and rainfall totals are expected to remain lower than normal, there is no current cause for concern. Unlike other islands, Oahu does not rely on surface water or catchment systems that react quickly to rainfall to supply our water. Everyone was reminded to use water wisely, use what you need but don't waste. If drought conditions continue, conserving now will help to prolong the need to call for more stringent conservation measures.
2. As a reminder, please be careful during brushfire season. Brush fires not only put a strain on the Honolulu Fire Department, but it also puts a strain on our water resources.
3. The 19th annual "Unthirsty Plant" sale, Saturday, August 4, 2007 at the Halawa Xeriscape gardens, 99-1268 Iwaena Street from 9:00 a.m. to 3:00 p.m. For more information contact BWS at 478-5041.

Questions, answers, comments followed:

1. A request was made if water level comparisons to last year could be reported at the next meeting.
2. A resident wanted to know what is the City and State doing regarding new development relating to water consumption. She stated that consumers are being penalized not the developers. Another resident noted it seem as though there are two entities competing for the water.
3. Chair Hargrave asked resident Oamilda to Chair a committee relating to the Iroquois Point access issues and report back to the Board. Oamilda accepted.

Military – Lt. Commander Coleman reported the Navy has been meeting to find an equitable solution for the residents and community having access to Iroquois Point, which is leased by the navy to Hunt Development. Currently, visitors must sign in and be accompanied by a resident. A guest stated that he would like to have the signing in procedure eliminated. Senator Espero added that per the Department of Land and Natural Resources Hunt Development and the Navy will schedule a meeting for all parties involved, which he plans to attend. He believes the community will have limited access to the beach. A report of the meeting will be given at the August meeting. Oamilda noted in the past several years when the property was under the Navy the community had access to the beach. Chair asked Oamilda what he would like. He responded a letter from the Governor to the developer

regarding public access. Fevela commented that the community is only asking now because the public access has been taken away. In previous years when access was available the beach was not used much by the community. He raised concern about construction equipment being stored on the beach. Belford relayed that the issue was brought to the community a year ago. He questioned why license plates of people entering is being photographed by Hunt and what is its purpose, as well as the access issues. A resident of that area expressed concern that a fire occurred and the people had no way of leaving the area due no access road; he wanted to know if a possibility could be to have Hunt provide an access in emergencies. Berg informed all that the Governor previously passed a bill pertaining to cane hall road landowners (in time of emergencies) and asked if this bill would be applicable to this jurisdiction.

ANNOUNCEMENTS: Chair Hargrave once again apologized for the meeting not being held in the meeting room. He noted there were several presenters present this evening and offered those who wished to do a five minute presentation. Those who chose not to present this evening would be put on the August agenda and could do their presentations then.

Ewa Child and Family Services – Diane Reece circulated a flyer with the Construction of a Transitional Home update. She announced that the public hearing for their application for a Conditional Use Permit is scheduled for Tuesday, July 31, 2007, at the Mission Memorial Auditorium, 550 .S. King Street, Honolulu, HI 96813.

Questions, answers, comments:

1. A guest said that Board members have changed since last year and requested a presentation relative to the plans, layout and the widening of Fort Weaver Road. Reece replied she did not know if that would be possible because the Department of Planning and Permitting has scheduled the hearing for July 31. She offered to show him the plans privately.
2. Smith noted that on February 9th the Board voted for an access. Reece replied that Schuler Homes is in the process for the development plans. Smith added it seems like a no to him. Reece mentioned Schuler is in favor but no specifics are available.

Ewa Industrial Park – Ron Ogomori introduced the consultant team, circulated a handout, and noted: Ewa Industrial Park, LLC. proposes to develop the property located at 91-1343 Fort Weaver Road into a light industrial park site, known as the Ewa Industrial Park. They are in the process of preparing a Draft and Final Environmental Assessment for Phase I and Phase II, zone change for Phase I; State Land Use Boundary Amendment from Agriculture to Urban for Phase II; and zone change for Phase II Tax Map Key 9-1-069:003. The property is bounded by the Honouliuli Sewage Treatment Plant to the south and west, Geiger Road to the south and portions of the OR&L Railway right-of-way to the north. Coral Creek Golf Course is located to the east and the Oahu Railway Museum to the west. This 48.395 acre property currently houses a number of farm buildings and outbuildings including two tenants' houses and a number of metal shipping containers used for storage of farm equipment. The project is also expected to include a small amount of retail space; provide employment and nearby residences and businesses an opportunity to live, work and play in the Ewa area. The proposed development will require either subdivision of the property or an industrial lot development under a condominium property regime for industrial lots (CPR), limited grading for building pads and foundations and building permits for construction.

Questions, answers and comments followed:

1. Effects of traffic were of concern. In response, the developer plans to widen the road fronting the Honouliuli Sewage Treatment Plant. The project owner does not plan to create a second Campbell Industrial Park.
2. There will be rules and regulations to follow, the project area secured, and noise and activities will be monitored. Visual aides were available for interested persons to review. Building height

limits will be fifty feet, trees planted at every sixth parking stall and a cement wall encircling the project. 3) In summary the project is a positive and Ogomori asked for Board support.

Alexander moved seconded by Bautista not to support the project at this time because of the need for more information.

Discussion followed:

1. Smith noted that the project is too big.
2. Belford asked if the current owner has good intentions and asked if the Board could be provided with more information.
3. Bautista commented that theoretically, the consultants can go to the Department of Planning and Permitting (DPP) stating that they did attend a Board meeting and technically it is a done deal.
4. Belford added it is nice to collaborate and cooperate.
5. An audience member relayed that ten years ago Gentry planned an industrial area and still plans on constructing one. He noted people of the area would get the lowest paying jobs.

The motion failed to carried by a vote of 5-4-0 (six votes are needed for a motion to pass). A comment was made that the whole intent was to make a presentation to the Board and answer questions. Chair Hargrave responded there is no offense here, the consultant was given an option to do the presentation or not, and was accommodated by the Board. He offered the consultant to come back to the August meeting and do a full presentation.

U.H. Project at Campbell High School – Susana Helm distributed a flyer regarding the State Department of Health, Alcohol and Drug Abuse Division funding an evaluation at Campbell High School of youth substance use prevention and treatment services within the geographic area as defined by the Campbell School Complex Area.

Request for Letter of Board Support to Family Court – Earl Arakaki asked for a letter of support from the Board to the Family Court Juvenile Division requesting in the interest of safety of residents of the Ewa community the suspect in the murder case of Karen Ertell in her home to be charged as an adult. **Smith moved seconded by Alexander to draft a letter of support to Family Court Juvenile Division trying the suspect in the murder of Karen Ertell as an adult. The motion carried unanimously, 10-0-0.** Chair Hargrave will draft the letter.

ANNOUNCEMENTS:

- Tom Berg announced the Transit Oriented Development (TOD) "Get On Board" meeting, Saturday, July 14, 2007 at Leeward Community College from 8:30 a.m. to noon.
- The next Oahu Metropolitan Planning Organization (OMPO) meeting is scheduled for Wednesday, July 18, 2007, Honolulu Hale at 3:30 p.m.
- Tom Berg circulated copies of the Hawaii Dealer magazine and encouraged everyone to read page 6 regarding traffic.

ADJOURNMENT - Alexander moved seconded by Belford to adjourn the meeting. There were no objections. All other agenda items were deferred.
Chair Hargrave adjourned the meeting at 8:20 p.m.

Submitted by Nola Frank
Neighborhood Commission Office staff
Chair

Reviewed by,
Rich Hargrave,

Thursday, August 02, 2007

© Copyright 2002-2008 City and County of Honolulu, Hawaii

[Privacy Statement](#) | [Technical Support](#) | [Customer Service](#) | [Policy](#) | [Accessibility](#) | [Diversity Statement](#)

EWA INDUSTRIAL PARK

TMK: 9-1-69:3

**MAILING LABELS TO
ADJOINING PROPERTY
OWNERS' - June 2007**

TMK: 9-1-069:4 TMK: 9-1-13:7

City and County of Honolulu
Budget & Fiscal Services
530 S. King St. 2nd Floor
Honolulu, Hawaii 96813

TMK: 9-1-069: 002

Hui O Pupu A' O' Ewa
c/o 91-1009C Renton Road
Ewa, Hawaii 96706

TMK: 9-1-069: 002

Hui O Pupu A' O' Ewa
c/o 91-1009F Renton Road
Ewa, Hawaii 96706

TMK: 9-1-069: 002

Hui O Pupu A' O' Ewa
c/o 91-1009J Renton Road
Ewa, Hawaii 96706

TMK: 9-1-069: 006

Gentry Investment Properties
560 North Nimitz Highway
Suite 210, Honolulu, Hi. 96817

Ewa Industrial Park
c/o Mr. Val Peroff
99-880 Iwaena Street
Honolulu, Hawaii 96701

TMK: 9-1-017: 68,69

City and County of Honolulu
Budget & Fiscal Services
530 S. King St. 2nd Floor
Honolulu, Hawaii 96813

TMK: 9-1-069: 002

Hui O Pupu A' O' Ewa
c/o 91-1009A Renton Road
Ewa, Hawaii 96706

TMK: 9-1-069: 002

Hui O Pupu A' O' Ewa
c/o 91-1009D Renton Road
Ewa, Hawaii 96706

TMK: 9-1-069: 002

Hui O Pupu A' O' Ewa
c/o 91-1009G Renton Road
Ewa, Hawaii 96706

Mr. Ernest Molins, Environmental
Protection Specialist, U.S. Housing &
Urban Development, 600 Harrison St.
3rd Floor, San Francisco, CA 94107

Tax Map Key: 9-1-013: Parcel 016

Mr. Rich Hargrave, Chair
Ewa Neighborhood Board No. 23
c/o Neighborhood Commission Office
530 S. King Str. #400
Honolulu, Hi. 96813

Tax Map Key: 9-1-017: 68 and 69

Ewa Villages Owners' Association
c/o Certified Management Corporation
3179 Koapaka Street
Honolulu, Hawaii 96819

TMK: 9-1-069: 002

Hui O Pupu A' O' Ewa
c/o 91-1009B Renton Road
Ewa, Hawaii 96706

TMK: 9-1-069: 002

Hui O Pupu A' O' Ewa
c/o 91-1009E Renton Road
Ewa, Hawaii 96706

TMK: 9-1-069: 002

Hui O Pupu A' O' Ewa
c/o 91-1009H Renton Road
Ewa, Hawaii 96706

TMK: 9-1-069: 010 and 011

Coral Creek Golf Inc.
91-1111 Geiger Road
Ewa Beach, Hawaii 96706

OR&L Railway
P.O. Box 60369
Ewa Station
Ewa, Oahu 96706

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.m.com

July 2, 2007

**Subject: Proposed Ewa Industrial Park - Draft and Final Environmental Assessment for Phase I and Phase II; Zone Change for Phase I; State Land Use Boundary Amendment from Agricultural to Urban for Phase II; and Zone Change for Phase II
Tax Map Key 9-1-069: 003**

Dear Property Owner:

We are in the process of preparing a Draft and Final Environmental Assessment to cover Phases I and II of the proposed Ewa Industrial Park property (48.395 acre). Phase I consisting of 23.3 acres will require a Zone Change Application from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District. Phase II consisting of 25.095 acres will require a State Land Use Boundary Amendment from Agricultural to Urban, followed by a Zone Change Application from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District. The Environmental Assessment and Zone Change applications will be processed by the Department of Planning and Permitting of the City and County of Honolulu, and the State Land Use Boundary Amendment will be processed by the State Land Use Commission. Prior to submittal of the applications to the City and State we have requested an opportunity to appear before the Ewa Neighborhood Board No. 23 on the evening of July 12, 2007.

As an adjoining property owner, and in accordance with the requirements of the City and County of Honolulu, we are notifying you of this upcoming presentation so that we may respond to your questions and/or concerns.

Date: July 12, 2007
Time: 7:00 p.m.
Location: Ewa Beach Public Library
91-1001 North Road
Ewa, Hawaii

We have enclosed a summary of the proposed project, a location map and a master plan phasing map for your review. In the meantime should you have questions, please do not hesitate to call our office at 988-2231.

Very truly yours,

A handwritten signature in black ink, appearing to read "Keith Kurahashi". The signature is written in a cursive style with a large, stylized initial "K".

Keith Kurahashi

cc: Ewa Industrial Park
Ewa Neighborhood Board No. 23

SUMMARY

PROPOSED EWA INDUSTRIAL PARK

The applicant, Ewa Industrial Park, LLC., proposes to develop the property located at 91-1343 Fort Weaver Road in Ewa, Oahu, Hawaii into a light industrial park site known as the Ewa Industrial Park. The property consists of one 48.395-acre parcel and is planned for development in two phases. Phase I will include 23.3 acres of the overall site and Phase II will include the remaining 25.095 acres. The property is bounded by the Honouliuli Sewage Treatment Plant to the south and west, Geiger Road to the south and portions of the OR&L Railway right-of-way to the north. Coral Creek Golf Course is located to the east and the Oahu Railway Museum to the west.

This 48.395 acre property currently houses a number of farm buildings and outbuildings including two tenants' houses and a number of metal shipping containers. It is also used for storage of farm equipment such as trucks and tractors and for keeping livestock such as goats and chickens with cleared areas for livestock pastures and paddocks. Kiawe scrub with weedy plant species dominate the area as agricultural uses were phased out. The project area is entirely bounded by a chain-link fence.

The project is planned for development with light industrial uses to include light manufacturing, warehousing, and distribution. The project is also expected to include a small amount of retail space such as a convenience store. The proposed industrial development will provide employment and provide Ewa and nearby residences and businesses an opportunity to live, work and play in the Ewa area of Oahu. This employment is expected to reduce the need

for residents in the surrounding area and along the travel corridor into town to travel in the peak hour direction towards downtown Honolulu to work.

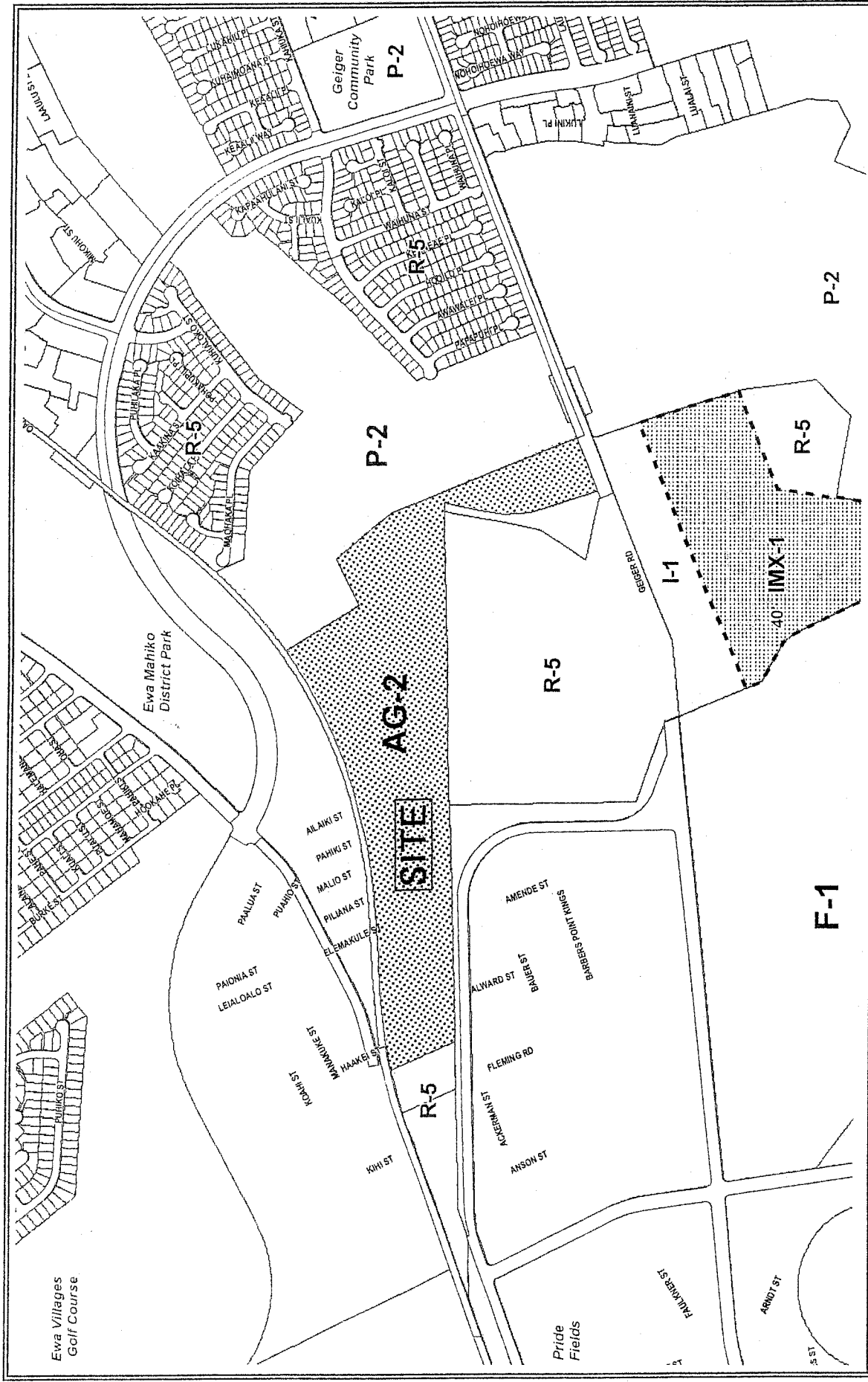
The proposed industrial development is consistent with the Ewa Development Plan Land Use Map that designates this area as Industrial.

As agent for the applicant we are preparing a Draft and Final Environmental Assessment Report for Phases I and II of the proposed 48.395 acre Ewa Industrial Park pursuant to and in accordance with the requirements of Chapter 343 HRS and Chapter 200 of Title 11, Administrative Rules - Environmental Impact Statement Rules. The action that triggers this assessment is the proposed zone change from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District for the overall development.

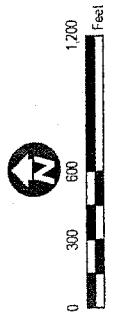
Phase I consisting of 23.3 acres will require a Zone Change Application from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District.

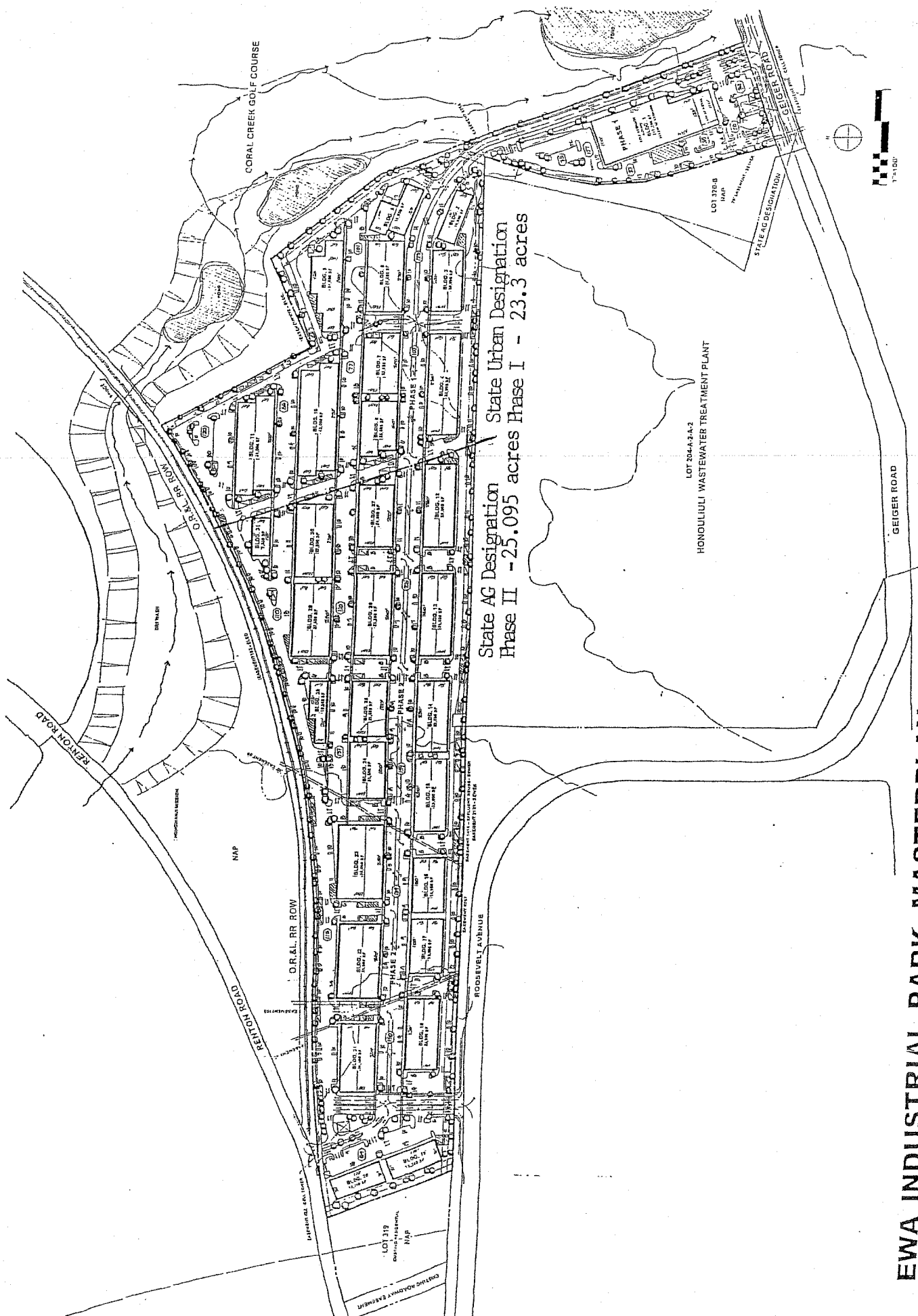
Phase II consisting of 25.095 acres will require a State Land Use Boundary Amendment from Agriculture to Urban, followed by a Zone Change Application from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District

The proposed development will require either subdivision of the property or an industrial lot development under a CPR (condominium property regime for industrial lots), limited grading for building pads and foundations and building permits for construction.



**EXHIBIT 1
LOCATION AND ZONING MAP**





State AG Designation
 State Urban Designation
 Phase II - 25.095 acres Phase I - 23.3 acres

EWA INDUSTRIAL PARK MASTERPLAN

HONOLULU, EWA, OAHU, HAWAII TMK: 9-1-65-03
 LOT 431B - 91-102D GEIGER ROAD

SITE PLAN A

330-2906

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANDA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231

FAX. (808) 988-1140

E-Mail: kkurahashi@hawaii.rr.com

December 4, 2006

Mr. Kurt Fevella, Chair
Ewa Neighborhood Board
c/o 94-941 Ikulani Street
Ewa, Hawaii 96706

**Subject: Proposed Ewa Industrial Park - Environmental Assessment,
Zone Change from AG-1 Restricted Agricultural District to I-2
Intensive Industrial District and State Land Use Boundary
Amendment from Agricultural to Urban -Tax Map Key: 9-1-69: 3**

Dear Chair Fevella:

Per your telephone call and instruction to our office last Friday, we have cancelled our planned presentation to your Neighborhood Board on the evening of December 14, 2006. We have also sent out a cancellation notice to all the adjoining property owners who were sent written notification of your December meeting. A copy of that cancellation notice is attached for your records.

As you instructed, I contacted Ms. Tesha Malama, Chair of the Ewa Historical Villages and requested an appearance before her Board prior to our presentation to the Ewa Neighborhood Board. Ms. Malama is putting us on the agenda for their January 22, 2007 Board of Directors meeting. The meeting will be held at the D.E. Thompson Senior Center at 6:30 p.m.

At this time we would like to again request an opportunity to appear before your Ewa Neighborhood Board so that we can explain the proposed project to the your Board and the community at large. We look forward to hearing from you in the very near future. Should you have questions please do not hesitate to call Keith Kurahashi or me at 988-2231.

Very truly yours,



Anne Kusao

cc: Ms. Tesha Malama
Ewa Industrial Park

Ewa Industrial Park Mailing Labels

TMK: 9-1-069: 003

November, 2006

TMK: 9-1-069: 002

Hui O Pupu A' O' Ewa

91-1009A Renton Road

Ewa, Hawaii 96706

TMK: 9-1-069: 006

Gentry Investment Properties

560 North Nimitz Highway

Suite 210, Honolulu, Hi. 96817

TMK: 9-1-017: 68,69

City and County of Honolulu

Budget & Fiscal Services

530 S. King St. 2nd Floor

Honolulu, Hawaii 96813

TMK: 9-1-013: 016

United State of America

Mr. Kurt Fevella, Chair

Ewa Neighborhood Board No. 23

c/o Neighborhood Commission Office

530 S. King Str. #400

Honolulu, Hi. 96813

TMK: 9-1-069:4 TMK: 9-1-13:7

City and County of Honolulu

Budget & Fiscal Services

530 S. King St. 2nd Floor

Honolulu, Hawaii 96813

TMK: 9-1-069: 010 and 011

Coral Creek Golf Inc.

91-1111 Geiger Road

Ewa Beach, Hawaii 96706

KUSAO & KURAHASHI, INC.

Planning and Zoning Consultants

MANOA MARKET PLACE
2752 WOODLAWN DRIVE, SUITE 5-202
HONOLULU, HAWAII 96822

BUS. (808) 988-2231
FAX. (808) 988-1140
E-Mail: kkurahashi@hawaii.rr.com

November 20, 2006

**Subject: Proposed Ewa Industrial Park - Draft and Final Environmental Assessment for Phase I and Phase II; Zone Change for Phase I; State Land Use Boundary Amendment from Agricultural to Urban for Phase II; and Zone Change for Phase II
Tax Map Key 9-1-069: 003**

Dear Property Owner:

We are in the process of preparing a Draft and Final Environmental Assessment to cover Phases I and II of the proposed Ewa Industrial Park property (48.395 acre). Phase I consisting of 21.1 acres will require a Zone Change Application from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District. Phase II consisting of 27.3 acres will require a State Land Use Boundary Amendment from Agricultural to Urban, followed by a Zone Change Application from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District. The Environmental Assessment and Zone Change applications will be processed by the Department of Planning and Permitting of the City and County of Honolulu and the State Land Use Boundary Amendment will be processed by the State Land Use Commission. Prior to submittal of the applications to the City and State we have requested an opportunity to appear before the Ewa Neighborhood Board No. 23 on the evening of December 14, 2006.

As an adjoining property owner, and in accordance with the requirements of the City and County of Honolulu, we are notifying you of this upcoming presentation so that we may respond to your questions and/or concerns.

Date: December 14, 2006
Time: 7:00 p.m.
Location: Ewa Beach Public Library
91-1--1 North Road
Ewa, Hawaii

We have enclosed a summary of the proposed project, a location map and a master plan phasing map for your review. In the meantime should you have questions, please do not hesitate to call our office at 988-2231.

Very truly yours,

A handwritten signature in black ink, appearing to read "Keith Kurahashi". The signature is written in a cursive style with a large, stylized initial "K".

Keith Kurahashi

cc: Ewa Industrial Park

SUMMARY

PROPOSED EWA INDUSTRIAL PARK

The applicant, Ewa Industrial Park, LLC., proposes to develop the property located at 91-1343 Fort Weaver Road in Ewa, Oahu, Hawaii into an industrial park site known as the Ewa Industrial Park. The property consists of one parcel of 48.395 acres - Tax Map Key 9-1-069: 003 and is planned for development in two phases. Phase I will include 21.1 acres of the overall site and Phase II will include the remaining 27.3 acres. The property is bounded by the Honouliuli Sewage Treatment Plant and Geiger Road to the south and portions of the OR&L Railway to the north. Ewa by Gentry Golf Course is located to the east and the Oahu Railway Museum to the west.

This 48.395 acre property currently houses a number of farm buildings and outbuildings including two tenants' houses and a number of metal shipping containers. It is also used for storage of farm equipment such as trucks and tractors and for keeping livestock such as goats and chickens with cleared areas for livestock pastures and paddocks. As a temporary use a small area of the property is cleared and rented out for Bon Dances once a year and for private parties throughout the year. Kiawe scrub with weedy plant species dominate the area. The project area is entirely bounded by a chain-link fence.

The project is planned for development with light industrial uses to include light manufacturing, warehousing, and distribution. The project is also expected to include a small amount of retail space such as a convenience store. The proposed industrial development will provide employment and provide Ewa and nearby residences and businesses an opportunity to live, work and

play in the Ewa area of Oahu. This employment is expected to reduce the need for residents in the surrounding area and along the travel corridor into town to travel in the peak hour direction towards downtown Honolulu to work.

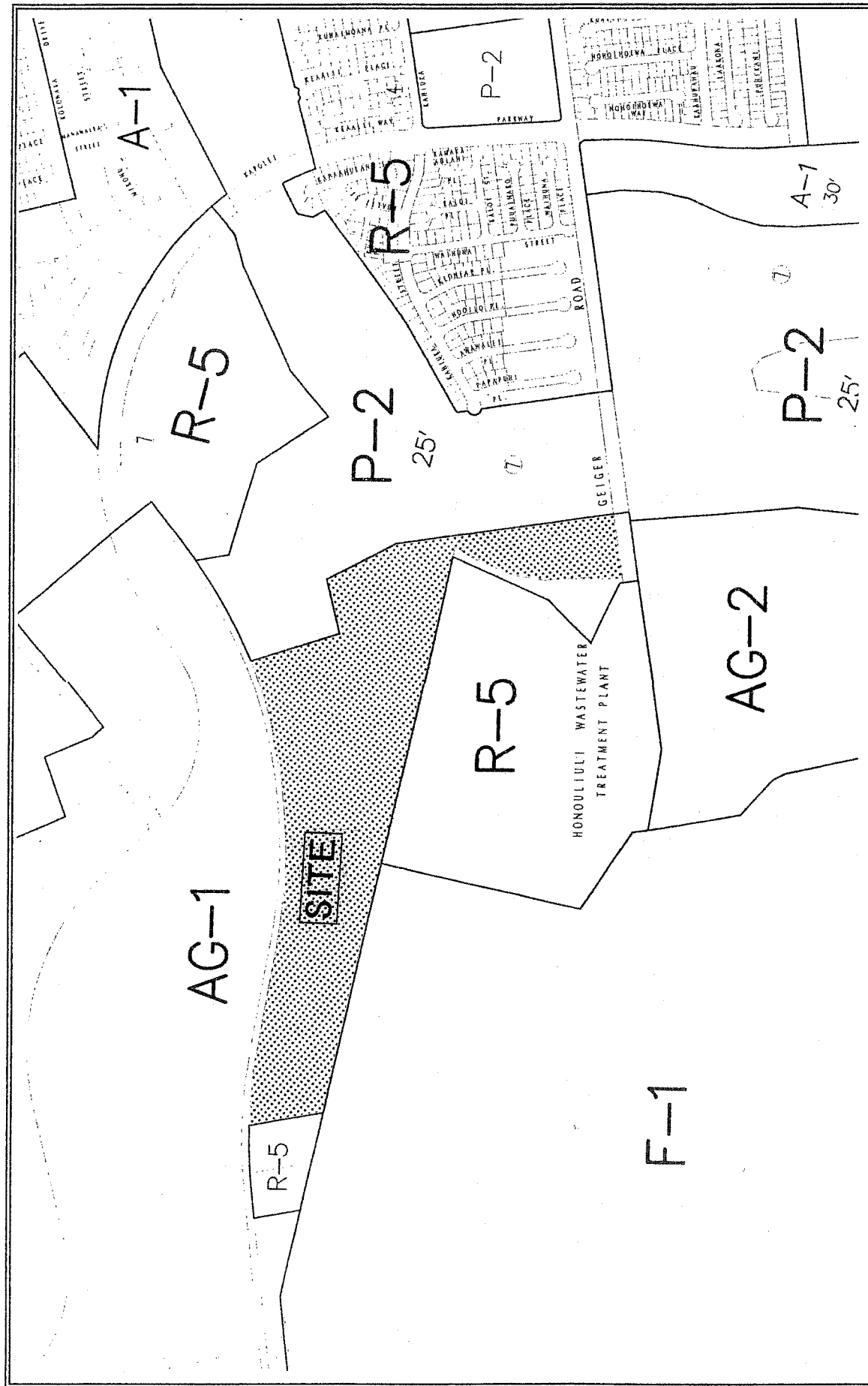
The proposed industrial development is consistent with the Ewa Development Plan Land Use Map that designates this area as Industrial.

As agent for the applicant we are preparing a Draft and Final Environmental Assessment Report for Phases I and II of the proposed 48.395 acre Ewa Industrial Park pursuant to and in accordance with the requirements of Chapter 343 HRS and Chapter 200 of Title 11, Administrative Rules - Environmental Impact Statement Rules. The action that triggers this assessment is the proposed zone change from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District for the overall development.

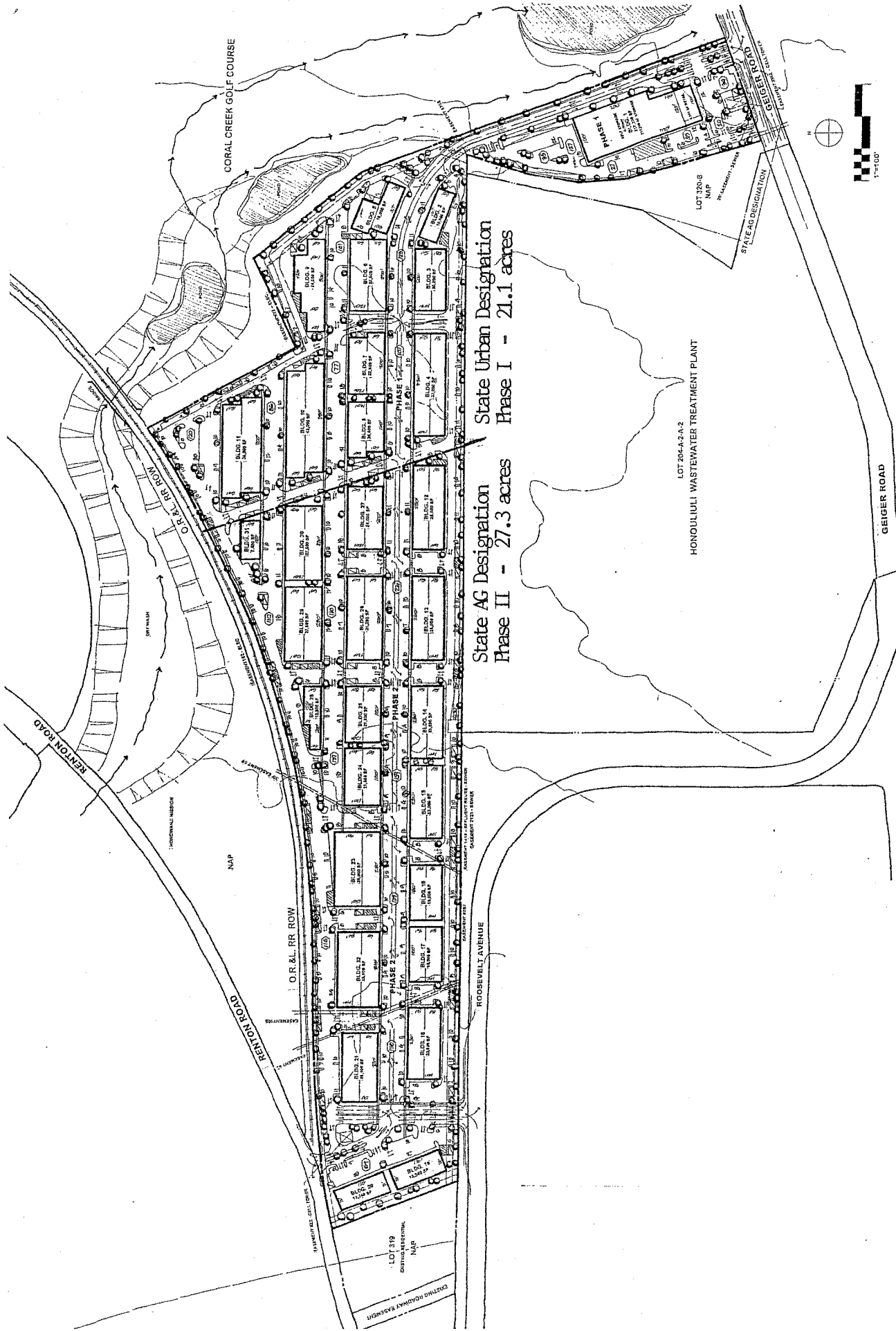
Phase I consisting of 21.1 acres will require a Zone Change Application from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District.

Phase II consisting of 27.3 acres will require a State Land Use Boundary Amendment from Agriculture to Urban, followed by a Zone Change Application from AG-1 Restricted Agricultural District to I-2 Intensive Industrial District

The proposed development will require either subdivision of the property or an industrial lot development under a CPR (condominium property regime for industrial lots), limited grading for building pads and foundations and building permits for construction.



**EXHIBIT 1
LOCATION AND ZONING MAP**



EWA INDUSTRIAL PARK MASTERPLAN

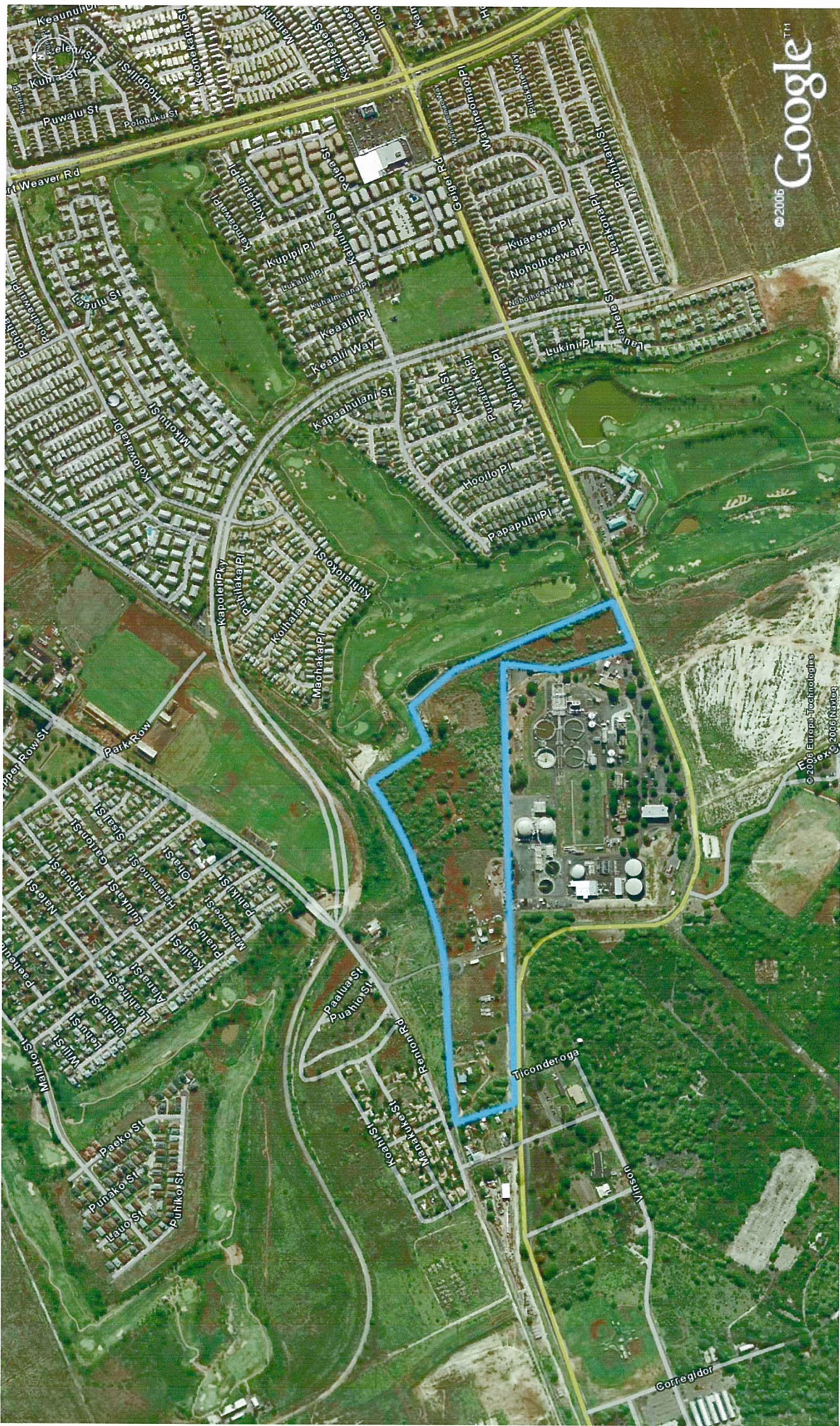
HONOLULU, EWA, OAHU, HAWAII, TMK: 9-1-69-03
 LOT 437B, 91-1020, GEIGER ROAD

SITE PLAN A

3-20-2009

APPENDIX XV

AERIAL PHOTOGRAPH



© 2006 Google™

© 2006 Earthstar Technologies

Corregidor

