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DEPARTMENT OF TRANSPORTATION
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JUL 26 2006

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TO: THE HONORABLE GENEVIEVE SALMONSON
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FROM: *for* BRENNON T. MORIOKA *Brennon T. Morioka*
DEPUTY DIRECTOR-HIGHWAYS

SUBJECT: **FINDING OF NO SIGNIFICANT IMPACT (FONSI) FOR
KALANIANA'OLE HIGHWAY IMPROVEMENTS
VICINITY OF HAWAII KAI DRIVE TO KEAHOLE STREET
HONOLULU DISTRICT, O'AHU
TMK (1) 3-9-17:20 AND WITHIN STATE ROW**

The State of Hawai'i, Department of Transportation, has reviewed the comments received during the 30-day public comment period which began on April 23, 2006. The agency has determined that this project will not have significant environmental effects and has issued a FONSI. Please publish this notice in the next edition of The Environmental Notice.

We have enclosed a completed OEQC Publication Form, four copies of the Final EA, and the project summary on disk. Please call Reid Tokuhara at 692-7691 if you have any questions.

Enclosure

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OFC. OF ENVIRONMENTAL
QUALITY CONTROL

FINAL ENVIRONMENTAL ASSESSMENT

KALANIANA'OLE HIGHWAY IMPROVEMENTS

**Vicinity of
Hawai'i Kai Drive
to Keahole Street**

Federal-Aid Project
NH-072-1(52)

Prepared for:
State of Hawaii
Department of Transportation

July 2006

Final
ENVIRONMENTAL ASSESSMENT

**KALANIANA'OLE HIGHWAY
IMPROVEMENTS**

**VICINITY OF HAWAI'I KAI DRIVE
TO KEAHOLE STREET**

Federal-Aid Project NH-072-1(52)

Prepared for:

State of Hawaii
Department of Transportation

Prepared by:

Kimura International Inc.

July 2006

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- A. Acoustic Study for the Kalaniana'ole Highway Improvements at Keāhole Street and Hawaii Kai Drive. Y. Ebisu & Associates. April 2006.
- B. Botanical Letter Report. Morden & Associates. 6 October 2005.

- C. A Survey of Avian and Terrestrial Mammalian Species for the Kalaniana'ole Highway Widening from Keāhole Drive to Hawai'i Kai Drive Project, Honolulu District, O'ahu. August 2005.
- Section 7, Endangered Species Act Consultation, Letter from Kimura International to U.S. Fish and Wildlife Service, dated January 30, 2006
- Email from U.S. Fish and Wildlife Service, May 30, 2006
- D. Archaeological Literature Review and Field Inspection for a Highway Improvement Project on Approximately 305-Peter Long Section of Kalaniana'ole Highway Between Keāhole Street and Hawai'i Kai Drive. Cultural Surveys Hawai'i. July 2005.
- Cultural Impact Evaluation for a Highway Improvement Project on Approximately 305-Peter Long Section of Kalaniana'ole Highway Between Keāhole Street and Hawai'i Kai Drive. Cultural Surveys Hawai'i. July 2005.
- Section 106, National Historic Preservation Act Consultation, Letter from Federal Highway Administration to State Historic Preservation Division, dated February 15, 2006.
- Letter from State Historic Preservation Division to Federal Highway Administration, dated April 3, 2006 (LOG NO: 2006.0885, DOC NO: 0603CM101)

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1 DESCRIPTION OF THE PROPOSED ACTION

1.1 INTRODUCTION AND ORGANIZATION OF THIS ENVIRONMENTAL ASSESSMENT

This Environmental Assessment (EA) for the Kalaniana'ole Highway Improvements, Vicinity of Hawai'i Kai Drive to Keāhole Street project has been prepared in accordance with State of Hawai'i environmental regulations and requirements. This EA meets the requirements of Chapter 343, Hawai'i Revised Statutes (HRS), Act 241, Session Laws of Hawai'i (SLH) 1992, and Chapter 200 of Title 11, Department of Health (DOH) Administrative rules, "Environmental Impact Statement Rules."

Federal funds are also being utilized for the proposed improvements, and a federal Categorical Exclusion (CATEX) is being prepared for the project.

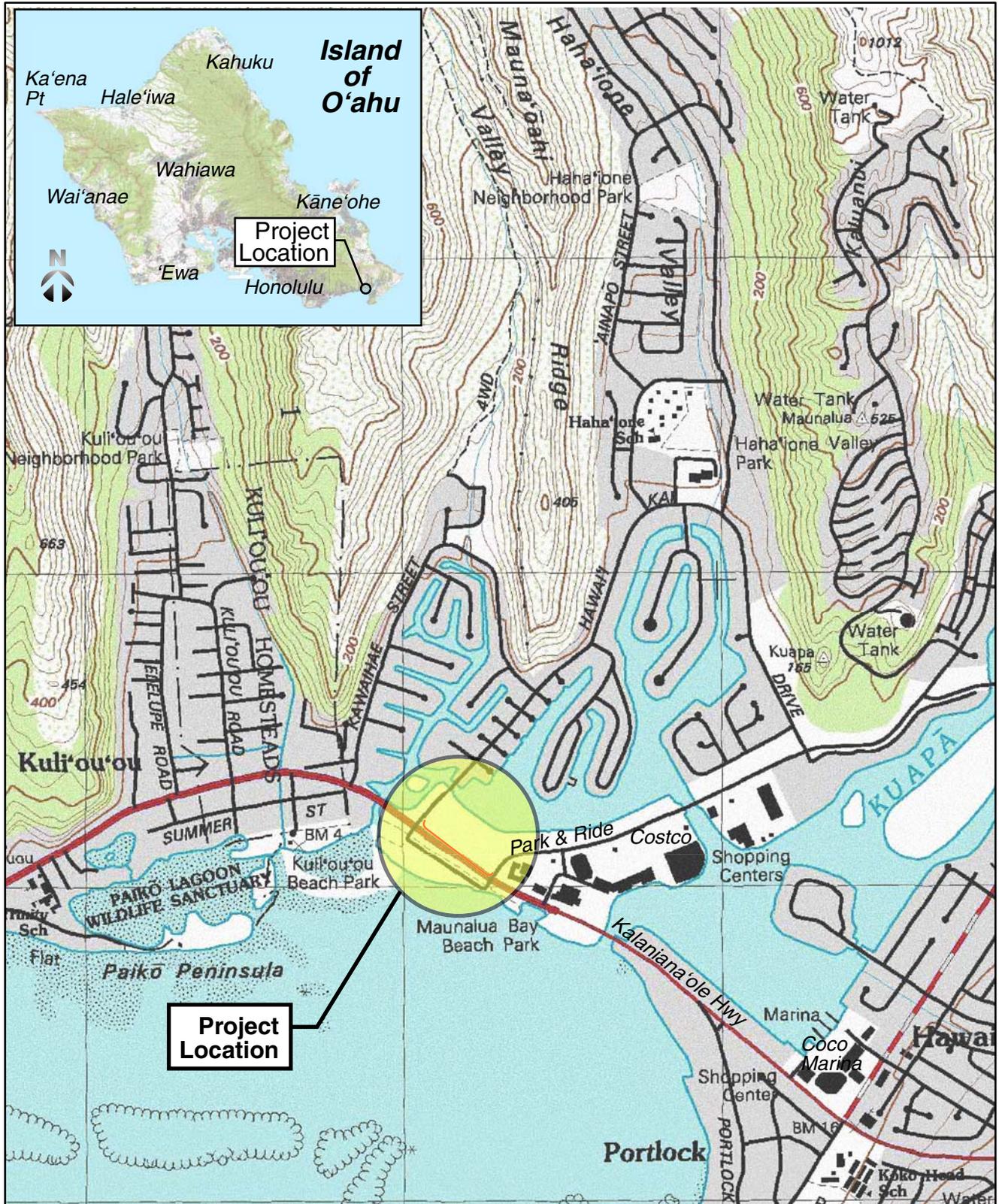
Because some of the improvements will be located outside the State right-of-way (ROW) and within the County's Special Management Area (SMA), a SMA use permit will be obtained from the City and County of Honolulu Department of Planning and Permitting.

This document is organized into the following chapters:

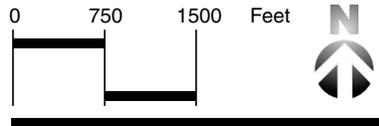
- Chapter 1 Description of the Proposed Action
- Chapter 2 Affected Environment, Impacts and Mitigation
- Chapter 3 Consistency with Existing Plans, Policies and Controls
- Chapter 4 Findings and Reasons Supporting the Anticipated Chapter 343 HRS Determination
- Chapter 5 References
- Chapter 6 Persons and Agencies Involved in the Preparation of this Environmental Assessment

1.2 PROJECT DESCRIPTION AND LOCATION

Kalaniana'ole Highway Improvements, Vicinity of Hawai'i Kai Drive to Keāhole Street, Federal-Aid Project No. HWY-O-04-04, is proposed by the State of Hawai'i Department of Transportation. The project is located in east Honolulu, across Maunalua Bay Beach Park in Hawai'i Kai (Figures 1 and 2). The project area encompasses the section of highway between Keāhole Street on the east and Hawai'i Kai Drive on the west. It includes the State highway right-of-way, and a portion of TMK parcel (1) 3-9-17:20, owned by B.P. Bishop Estate (Figure 3).



Source: U.S. Geological Survey



1 Mile

Figure 1
Location

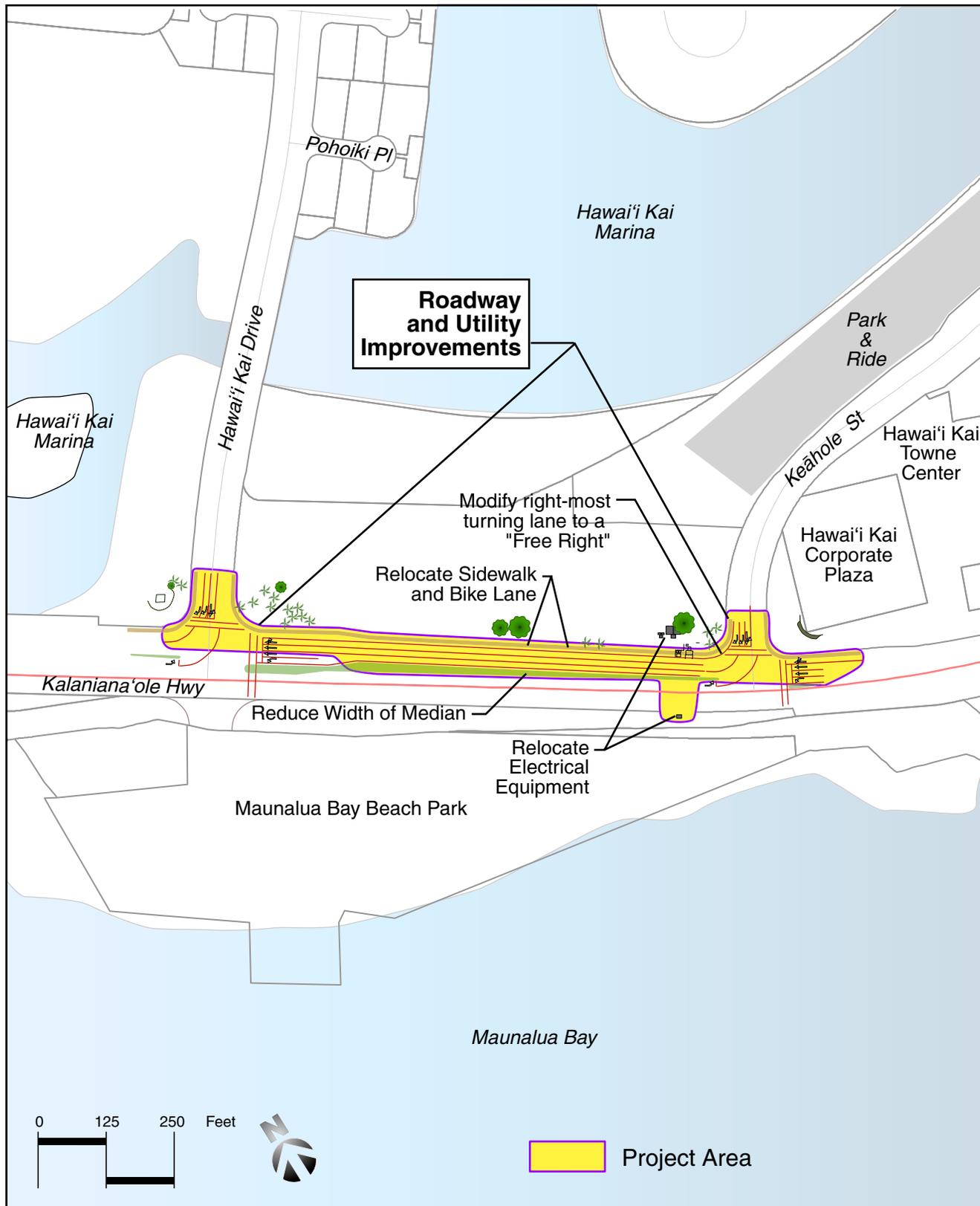


Figure 2
Study Area

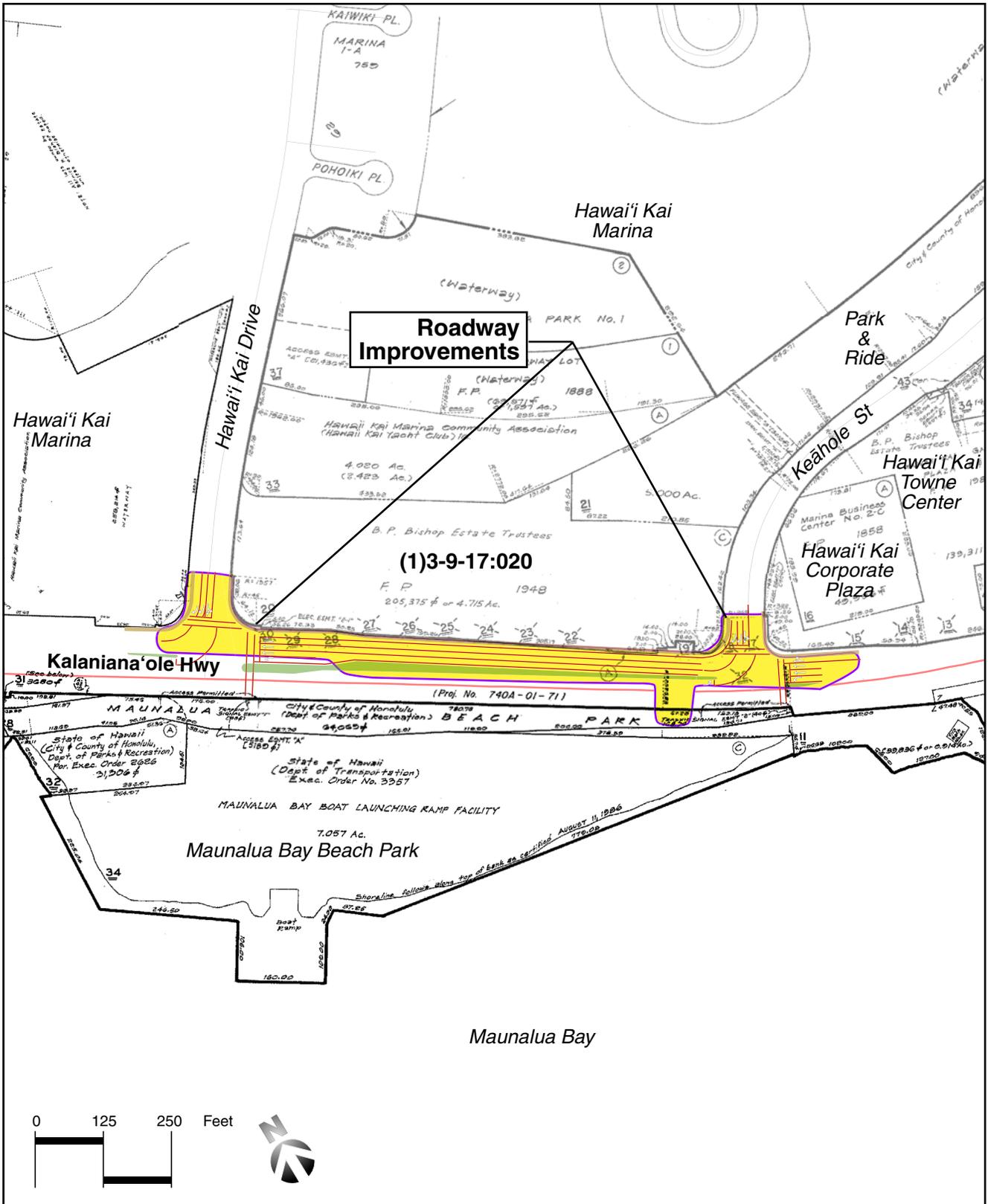


Figure 3
Tax Map

The project will convert one of the two right-turn lanes from Keāhole Street onto Kalaniana'ole Highway into a "free right" turn lane. The turning lane will be extended until the Hawai'i Kai Drive intersection. This will improve the operation of the intersection and facilitate traffic flow. The project will involve the relocation of the existing mauka sidewalk, bike lane, and utilities.

The estimated project construction cost is \$3.0 million. Right-of-way acquisition costs are an additional \$100,000. The project will be 80% federally-funded and 20% state-funded. The project is expected to commence construction in January 2009, with project completion seven (7) months later.

1.3 PROJECT PURPOSE AND NEED

The purpose of the project is to improve the operational efficiency of the Kalaniana'ole Highway and Keāhole Street intersection. Currently, traffic turning right from Keāhole Street onto the highway must stop and merge with westbound traffic. During morning peak hours, when westbound traffic volumes are high, vehicles back up on Keāhole Street. The creation of a free right turn condition will allow vehicles to continuously enter Kalaniana'ole Highway regardless of the traffic signal condition. This will improve traffic flow on Keāhole Street without slowing traffic on Kalaniana'ole Highway.

1.4 PROJECT ALTERNATIVES

1.4.1 Proposed Action

The project will create an exclusive right turn lane from Keāhole Street onto Kalaniana'ole Highway, and extend the lane to the Hawai'i Kai Drive intersection. From there, the traffic lane will meet an existing third lane on Kalaniana'ole Highway.

Roadway improvements will be made within an 800-foot stretch on the mauka side of Kalaniana'ole Highway (Honolulu-bound), between Hawai'i Kai Drive and Keāhole Street. The project will require relocation of the mauka sidewalk and bike lane. Electrical utility connections and relocations will extend slightly beyond Keāhole Street (on Kalaniana'ole Highway), as well as about 170 feet along Keāhole Street (Figure 4). Some land outside the existing highway right-of-way will be acquired from the Bishop Estate. Figure 5 shows a typical roadway section for the project improvements.

1.4.2 No Action

The no-action alternative would not make improvements to the Keāhole and Kalaniana'ole Highway intersection. Existing conditions would remain, and traffic turning right onto Kalaniana'ole Highway would need to wait for the light or stop and merge with oncoming traffic. Existing traffic volumes would continue to cause back ups at this intersection, particularly during the morning peak hours.

1.5 PROJECT SUMMARY

Table 1-1: Project Summary

Item	Description
Project Name	Kalaniana'ole Highway Improvements, Vicinity of Hawai'i Kai Drive to Keāhole Street, Federal-Aid Project No. NH-072-1(52)
Applicant	State of Hawai'i, Department of Transportation
Location	Maunalua Ahupua'a, Kona District, O'ahu
Tax Map Key	TMK (1) 3-9-17:20 and within State ROW
Existing Uses	Grassed highway right-of-way, open space
Landowner	State of Hawai'i (highway ROW), B.P. Bishop Estate (area outside ROW)
Project Description	Create a "free right" turn lane from Keāhole Street onto Kalaniana'ole Highway (Honolulu-bound), and continue the lane to the Hawai'i Kai Drive intersection. Relocate mauka sidewalk and bike lane, and electrical utility connections and relocations on Kalaniana'ole Highway and Keāhole Street.
Estimated Cost	\$3.0 million construction, \$100,000 ROW acquisition (80% federal, 20% state funding)
State Land Use	Urban
East Honolulu Sustainable Communities Plan	Open Space Map: Kalaniana'ole Highway corridor identified as having "Panoramic View" looking makai. Urban Land Use Map: Kalaniana'ole Highway ROW designated for highway use; area mauka of highway designated "Preservation." Public Facilities Map: Identifies Kalaniana'ole Highway as highway and major street, and identifies bike lane along highway
Zoning	P-2 General Preservation
Flood Insurance Rate Map	Zone A (Special flood hazard area, no Base Flood Elevations determined) and Zone AE (Special flood hazard area, elevations 5 to 6 feet)

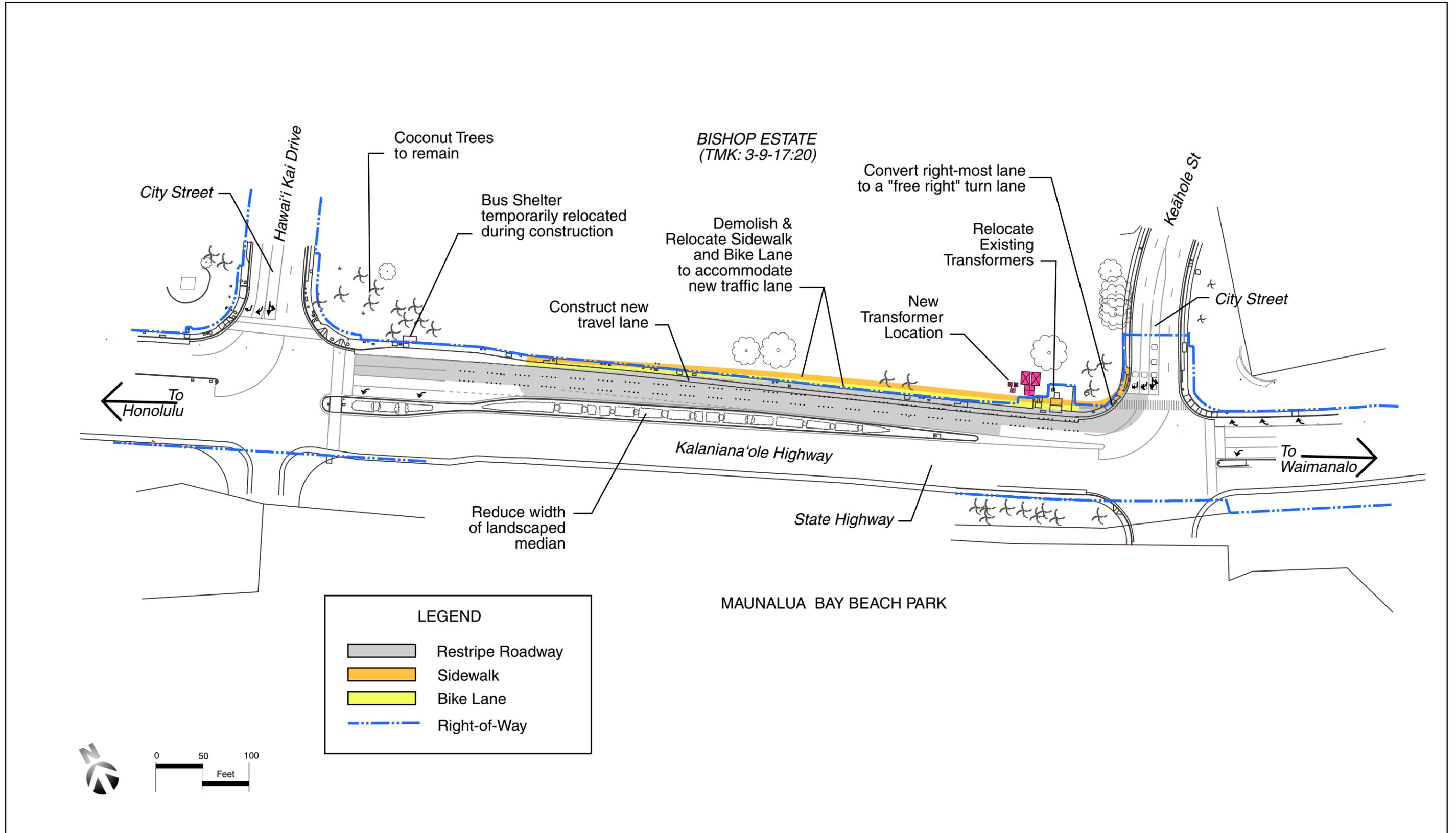


Figure 4
Proposed Action

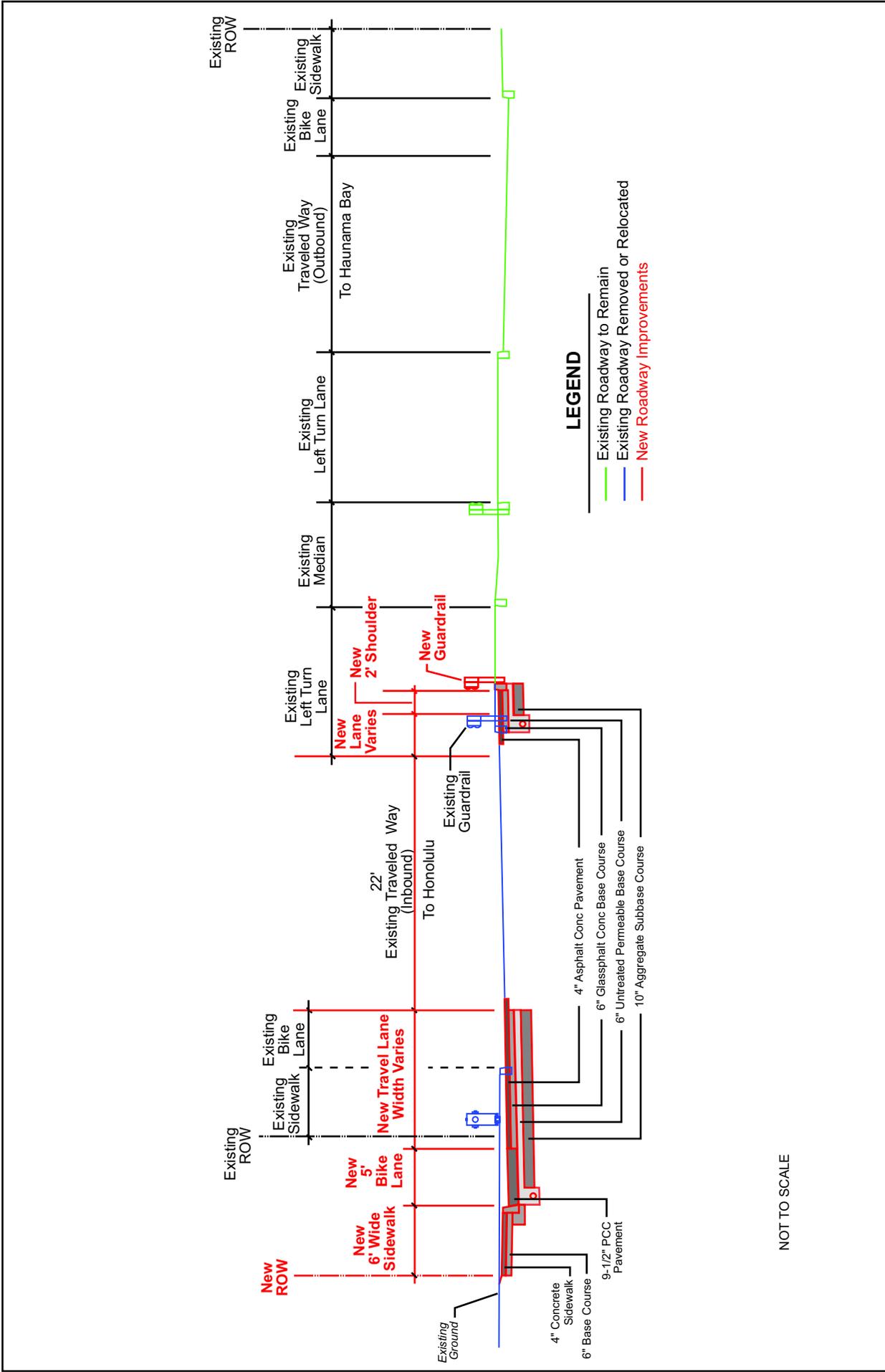


Figure 5
Roadway Section

1.6 POSSIBLE ENVIRONMENTAL PERMITS AND APPROVALS

The following is a summary of environmental approvals and consultations that may be required for the proposed action. Chapter 3 includes a more detailed discussion of the project's consistency with federal, State and local land use plans, policies and controls.

Table 1-2: Possible Environmental Permits and Approvals

Approval/Consultation	Agency
Federal	
National Environmental Policy Act, Categorical Exclusion (CATEX)	U.S. Department of Transportation, Federal Transit Administration
State of Hawai'i	
Chapter 343 Hawai'i Revised Statutes	Office of Environmental Quality Control
Section 106, National Historic Preservation Act consultation and HRS Chapter 6E review	Department of Land and Natural Resources, State Historic Preservation Division
Noise Permit	Department of Health
Disability and Communication Access Board Approval	Department of Health, Disability and Communication Access Board
City and County of Honolulu	
Special Management Area Use Permit (Major)	Department of Planning & Permitting
Various Building and grading permits	Department of Planning & Permitting

2 AFFECTED ENVIRONMENT, IMPACTS AND MITIGATION

2.1 INTRODUCTION

This chapter describes the existing environment, potential project impacts and proposed mitigation. This chapter is organized by resource area, and is generally divided into: 1) physical environment, 2) biological environment, 3) socio-economic environment, 4) utilities and infrastructure, 5) traffic, and 6) public services and facilities.

The discussion of environmental impacts includes both direct and indirect impacts. Direct impacts are those caused by the action and occur at the same place and time. Indirect effects may occur later in time or farther in distance, but are still reasonably foreseeable. The analysis in this chapter also identifies possible cumulative environmental impacts. Cumulative impacts are defined as the results from the incremental impact of the action when added to other past, present and reasonably foreseeable future actions. Cumulative impacts can result from individually minor but collectively significant actions taking place over a period of time.

2.2 PHYSICAL ENVIRONMENT

2.2.1 Geology and Topography

Existing Conditions

The project area consists of two distinct geologic-geomorphic environments, differing in age, lithography, structure, soils and erodability. The older, more mature landscape is the inland area consisting of basalt from the Ko'olau Volcanic Series. The younger is composed of pyroclastics and lavas of the Koko Volcanic Series which blanketed the area seaward of the exposed Ko'olau Mountains. The Ko'olau volcanics constitute the basement rock (or caprock) of southern O'ahu. The Koko volcanics, on the other hand, are a relatively recent geological phenomenon, having erupted and become dormant about 40,000 years ago.

The Hawai'i Kai area was originally developed by Henry J. Kaiser around the ancient Maunalua fishpond and wetlands known as Kuapā (meaning "fishpond wall"). The Hawai'i Kai or Koko Marina was dredged from Kuapā Pond starting around 1959. Dredging transformed the shallow coastal inlet and wetlands into a marine embayment, and was accompanied by considerable filling and clearing of the pond margins. In 1961, Kaiser entered into a lease agreement with the landowner, the B.P. Bishop Estate, to develop the fishpond into residential tracts with a marina and channels separated by fingers of land and islands. Nearly all of the low-lying lands surrounding the marine have since been developed, and the residential neighborhoods of Hawai'i Kai now extend back into the alleys and up the separating ridges.

The project site is located on the makai or ocean-side of the dredged marina, and the existing topography in this area is flat. The elevation is approximately three feet above mean sea level (msl).

Project Impacts and Mitigation

The proposed action will not have a significant impact on the geology or topography of the project area. The project will involve some excavation and grading to relocate the mauka sidewalk and add an additional travel lane, but current elevations will be maintained.

2.2.2 Soils and Geology

Existing Conditions

According to the U.S. Department of Agriculture Soil Conservation Service (1972), the project area is entirely on mixed fill land (FL) (Figure 6). This land type “occurs mostly near Pearl Harbor and in Honolulu, adjacent to the ocean. It consists of areas filled with material dredged from the ocean or hauled from nearby areas, garbage, and general material from other sources... This land type is used for urban development including airports, housing areas, and industrial facilities.”

Project Impacts and Mitigation

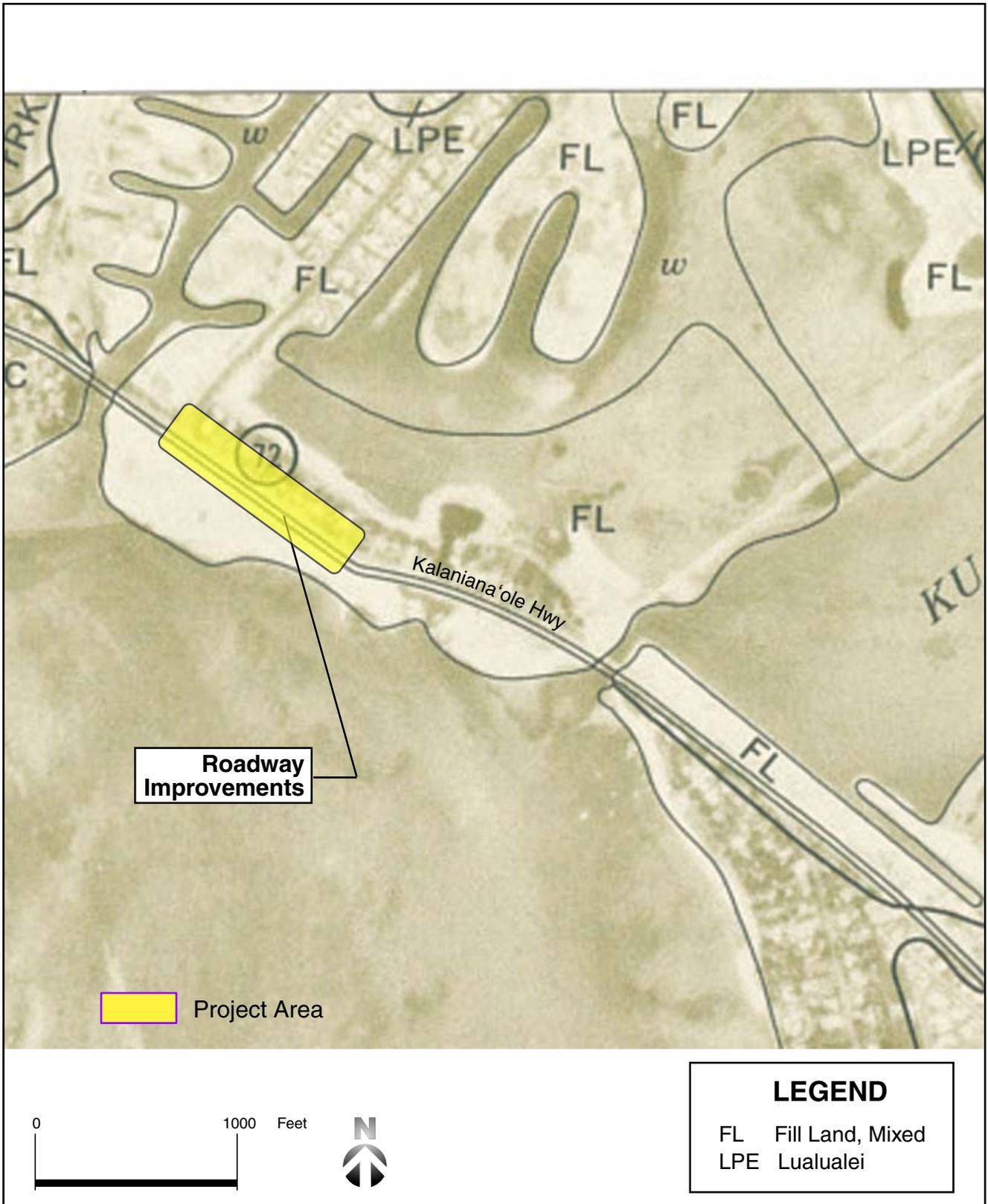
No adverse impact on soils in the project area is anticipated. After the proposed roadway improvements, any trenches will be backfilled, and the area will be restored to preexisting conditions.

Any impact of construction activities on soils will be mitigated by measures outlined in the following regulations:

- Chapter 14, Articles 13-16 as related to Grading, Soil Erosion and Sediment Control, of the Revised Ordinance of Honolulu, 1990, as amended.
- Department of Planning and Permitting, Rules relating to Soil Erosion Standards and Guidelines, (1999);
- USDA Soil Conservation Services Erosion and Sediment Control Guide for Hawai'i, (1968).

Best construction management practices will be employed to restrict stockpiling of construction material and properly dispose of construction debris. Regular watering will be used to reduce the amount of fugitive dust in the air.

There will be no indirect or cumulative impact on soils or geologic conditions.



Source: U.S. Dept. of Agriculture, Soil Conservation Service, 1972

Figure 6
Soils

2.2.3 Climate and Air Quality

Existing Conditions

Climate

Climate on the Island of O'ahu is influenced by its subtropical location, topography, and the surrounding Pacific Ocean. Precipitation is primarily associated with the prevailing northeasterly trade winds that are intercepted and forced upwards at the Ko'olau Mountain range. Prevailing winds are northeasterly trade winds, which occur approximately 70 percent of the time. Trade wind frequency ranges from about 45 percent in January to more than 90 percent in July. Normal trade winds tend to break down in the fall, giving way to light, variable wind conditions through the winter and early spring.

The Hawai'i Kai area has a semi-arid climate with an average annual rainfall of about 20 to 30 inches along the coastline, with higher mountain elevations receiving about 40 inches. Monthly rainfall averages less than two inches throughout most of the year. (Wanket, et al., 1996).

Air Quality

National Ambient Air Quality Standards (NAAQS) have been established for seven major air pollutants: carbon monoxide (CO), nitrogen oxides (NO_x), ozone (O₃), particulate matter smaller than 10 microns (PM₁₀), particulate matter smaller than 2.5 microns (PM_{2.5}), sulfur oxides (SO_x), and lead. Air pollutant levels are monitored by the State Department of Health at a network of sampling stations statewide. Based on ambient air monitoring data, the U.S. Environmental Protection Agency has classified the island of O'ahu and the State of Hawai'i as being in attainment of the federal standards.

Project Impacts and Mitigation

Climatic conditions are not expected to have a significant effect on the project. Project construction will have minor, short-term impacts on air quality in the immediate area. Construction activity such as grading and excavation will increase fugitive dust in the area. Equipment used during construction will emit exhaust and airborne particulates. Most of the work will occur within the roadway right-of-way or the undeveloped open space area immediately adjacent to the ROW. The nearest residences are on Hawai'i Kai Drive, over 600 feet from the Kalaniana'ole Highway intersection. Lands directly downwind from the construction area contain the ocean-front Maunalua Bay Beach Park. Office and commercial uses near the Keāhole Street intersection are away from the construction area and buildings are enclosed and air conditioned. Overall, construction activities should not significantly degrade air quality for adjacent land uses.

Construction activities will employ fugitive dust emission control measures in compliance with provisions of the State DOH Rules and Regulations (Chapter 43, Section 10) and Hawai'i

Administrative Rules (HAR) Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33 on Fugitive Dust.

During construction, the contractor will 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:

- Plan the different phases of construction, focusing on minimizing the amount of dust-generating materials and activities, centralizing on-site vehicular traffic routes, and locating potential dust-generating equipment in areas of the least impact;
- Provide an adequate water source at the site prior to start-up of construction activities;
- Landscape and provide rapid covering of bare areas, including slopes, starting from the initial grading phase;
- Minimize dust from shoulders and access roads;
- Provide adequate dust control measures during weekends, after hours, and prior to daily start-up of construction activities; and
- Control dust from debris being hauled away from the project site.

During construction, the contractor will sprinkle water, as necessary to control dust. Transported or stored soils will be covered. Areas graded and cleared of vegetation will be paved or revegetated as soon as possible to reduce dust. Construction equipment will be moved to and from the site during non-peak traffic periods, to the extent possible, in order to minimize disruption to Kalaniana'ole Highway traffic.

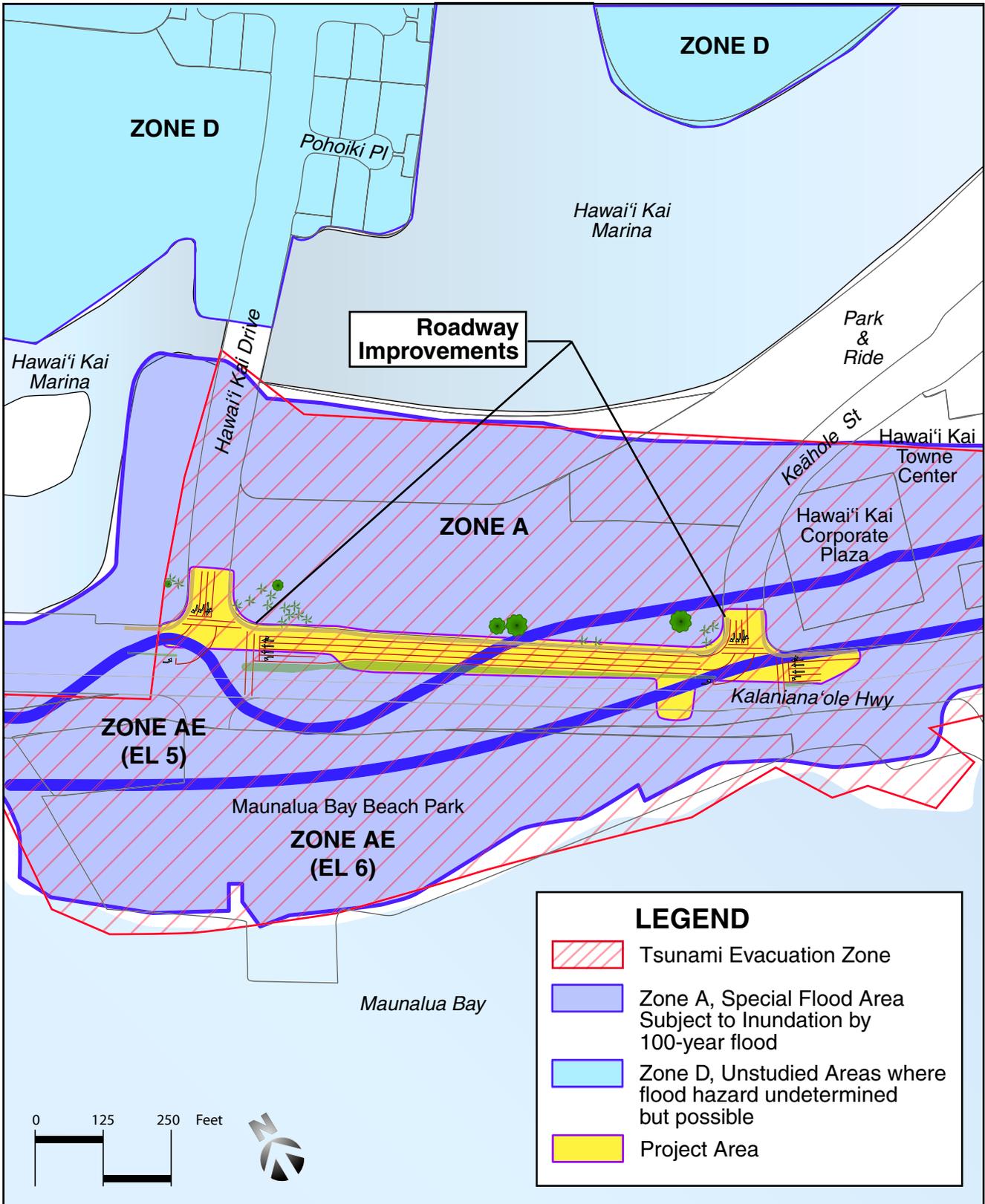
Long-Term Impacts

The project will not impact climate or have a long-term adverse affect on air quality. The proposed improvements will not cause an increase in traffic in the area, which could increase vehicle related emissions. There are expected to be future increases in traffic in the Hawai'i Kai region due to future residential and commercial development. However, growth will occur with or without the project. The roadway improvements will improve traffic flow, which may indirectly and cumulatively have a positive impact on air quality by reducing vehicle idling time and stop and go movements.

2.2.4 Natural Hazards

Existing Conditions

The Flood Insurance Rate Map (FIRM) for the island of O'ahu prepared by the Federal Emergency Management Agency (FEMA) identifies flood hazard and flood prone areas (Figure 7). The FIRM map for the area (Map Numbers 15003C0390F and 15003C0395F, revised September 30, 2004) indicates that Kalaniana'ole Highway in this area is designated as a Special



Source: Flood Insurance Rate Map, Maps 15003C0390F and 15003C0395F revised September 30, 2004.

Figure 7
**Flood Insurance Rate Map (FIRM)
 and Tsunami Hazard**

Flood Hazard Area, inundated by a 100-year flood. The highway straddles Zone A (No Base Flood Elevations determined) and Zone AE (Base flood elevations of 5 to 6 feet). All of Kalaniana'ole Highway is within the Tsunami Evacuation Zone. The nearest evacuation center is Hahaione Elementary School, which is located in Hahaione Valley, mauka of the project area.

The site is not particularly susceptible to other natural hazards.

Project Impacts and Mitigation

There will be no short-term construction-related impacts on natural hazards or on hazard preparedness. The improvements will be made to an existing coastal road, and is compatible with that existing use. No structures are proposed within the flood hazard area. There will be no adverse impact on flooding conditions or on emergency evacuation procedures. If anything, the roadway improvements will have a positive impact on emergency preparedness, by improving local traffic flow and emergency access in the event of a natural disaster.

Light poles and the traffic signal poles will be designed to withstand wind loads, in compliance with AASHTO Standard Specifications for Structural Supports for Highway Signs, Luminaires and Traffic Signals.

2.2.5 Hydrology

Existing Conditions

Groundwater

The underlying rock unit in the Hawai'i Kai area is tuff and basalt of the Koko volcanics. Groundwater may not occur in the Koko volcanics unless one reaches to below sea level. Mink and Yuen report that groundwater in the Koko formation drains directly to the Hawai'i Kai marina and coast. They also point out that at one time, low capacity wells provided brackish groundwater for farming and stock-raising, but currently, little, if any groundwater is utilized (Mink & Yuen, Inc. 1996).

The Kalaniana'ole Highway in this area is located near the shoreline across Maunalua Bay Beach Park. According to the Geologic Map of O'ahu (Stearns, 1930-32 in Wanket et al., 1996), the project area is underlain by unconsolidated calcareous marine sediments consisting chiefly of cream-colored beach sand. When Kuapā Pond was dredged to create the Hawai'i Kai Marina, the dredge material (gray calcareous silt and sand and coral rubble) was used to fill and create the land where the highway is located. The project area is mostly underlain by compacted, impermeable dredged coral fill material. Based on the regional geology of Hawai'i Kai, the area is underlain by deep deposits of impermeable coastal marine sediment. As a result, the site has no hydrogeologic connection with any of the brackish water aquifers in the valleys and basalt ridges located inland (Wanket et al., 1996).

Surface Water

There are no perennial streams in the project area. In the Hawai'i Kai area, the main drainage ways are Hahaione, Kamilonui, Kamiloiki, and Kalama. Flows in all watersheds are intermittent, responding only to substantial rain showers. Small showers ordinarily do not trigger direct runoff.

Project Impacts and Mitigation

The proposed project will add pavement to Kalaniana'ole Highway which will connect to the extreme right lane of Keāhole Street. This will slightly increase the amount of impervious surface in the area. However, the additional surface runoff resulting from this third lane is expected to be negligible. As with existing conditions, surface runoff from the road will be directed into the drainage catch basins and manhole, with runoff discharged into the marina.

The project area is underlain by dredged coral material and sedimentary marine deposits with little to no permeability. There are no potable groundwater sources in the vicinity. The project will have no impact on groundwater resources.

2.2.6 Noise

An Acoustic Study for the project was prepared by Y. Ebisu & Associates (Appendix A). Existing and future traffic noise levels in the project environs were studied to evaluate potential noise impacts associated with the project. Noise measurements were obtained, traffic noise predictions developed, and noise abatement alternatives evaluated.

The Acoustic Study in Appendix A describes the general study methodology. Existing AM and PM peak hour traffic noise levels were measured at two locations and used in the traffic noise model. The measurement locations were located in the grassy strip mauka of the highway, 100 and 200 feet from the highway centerline. The traffic noise model calculated base year (Calendar Year (CY) 2006) and future (CY 2026) noise levels. The measurements were used in conjunction with forecast noise levels to determine if future noise levels will “substantially exceed” existing background ambient noise at sensitive receptors and park lands.

The Hawaii Department of Transportation (HDOT) noise abatement threshold criteria of 66 Leq (h)⁴ and the HDOT “15 dB increase” criteria were applied to all noise sensitive buildings and park lands along the project corridor. Where noise mitigation measures were indicated for this project, the effectiveness of sound attenuating barriers and other possible noise mitigation measures were evaluated.

⁴ Equivalent (or Average) Hourly Sound Level noise descriptor for Activity Category B—“picnic areas, recreation areas, playgrounds, activity sports areas, parks, residences, motels, hotels, churches, libraries and hospitals.”

Existing Conditions

The year 2006 was used as the base year for calculating changes in traffic and background ambient noise levels. Base year noise along the project corridor was described by estimating Hourly Equivalent Sound Levels [Leq(h)] at receptor locations on the mauka and makai sides of Kalaniana'ole Highway during AM and PM peak hours. The Acoustic Study in Appendix A shows the locations of the receptors. Traffic noise levels were highest on the mauka side of the highway during the AM peak hour, and on the makai side during the PM peak hour.

Existing traffic noise levels exceed 66 Leq at mauka locations within 102 feet of the highway centerline, and at makai locations within 113 feet of the centerline. Noise at the nearest residential receptors (located about 600 feet away on Hawai'i Kai Drive) do not exceed the HDOT noise abatement level of 66 Leq, due to their distance from the project corridor.

The study notes that although portions of the open space area mauka side of the highway have noise levels above 66 Leq, the area functions as open space rather than a playground and picnicking area.

Project Impacts and Mitigation

Future Traffic Noise Levels

Future (CY 2026) traffic noise within the project corridor was evaluated with and without the project. The HDOT 66 Leq(h) noise abatement criteria for Activity Category B will be exceeded at all park lands fronting Kalaniana'ole Highway within 120 feet mauka of the highway centerline, and within 122 feet makai of the centerline.

The increase in noise levels due to the project are well below the 15 dB criteria. The noise increase over current conditions will be less than 1.6 dB on the mauka side of the highway and less than 0.7 dB on the makai side.

The Acoustic Study made the following conclusions about CY 2026 noise levels with build-out of the project:

- It is predicted that the HDOT's 66 Leq(h) criteria will be exceeded at existing park lands mauka and makai of the highway. No existing residences in the area will be exposed to Kalaniana'ole Highway traffic noise levels above the 66 Leq(h) noise abatement criteria.
- The project will not exceed the "15 dB increase" criteria for substantial change in traffic noise levels along the right-of-way or at noise sensitive receptors.
- Although the HDOT's 66 Leq(h) criteria will continue to be exceeded along the mauka and makai rights-of-way adjoining the highway, the affected park lands are not normally occupied and function primarily as open space.

- Existing public use facilities or commercial buildings within the limits of project construction should not be affected by project-related traffic noise.

Possible Noise Mitigation Measures

With the project improvements, future (CY2026) traffic noise levels are predicted to exceed the HDOT's "66 Leq(h)" but not the "15 dB increase" noise abatement criteria within the project area. The Acoustic Study included an evaluation of the effectiveness of sound attenuation walls, in order to determine if the construction and additional costs would be a reasonable and feasible traffic noise mitigation measure for this project.

Sound attenuation walls at various locations and of various heights were evaluated in the Acoustic Study. In order to meet HDOT criteria for acceptable noise mitigation, a sound attenuation wall must provide at least 5 dB of attenuation at the affected ground receptors. The analysis shows that the walls on both sides of the highway would need to be at least five feet in height in order to achieve this level of attenuation. The study noted that in the current situation, the negative aspects of a sound attenuating wall, such as the visual impact, potential for graffiti, and added maintenance costs should be considered. Because relatively few people typically occupy the park lands where noise levels would exceed 66 Leq(h), any noise reduction benefits from a wall may be outweighed by its negative attributes. No sound attenuation walls are currently proposed.

No development is currently planned for the area adjacent to the highway between Keāhole Street and Hawai'i Kai Drive, and therefore a sound attenuation wall is not needed as part of this project. In the event that these lands are developed in the future, impacts on any noise sensitive uses could be mitigated through the inclusion of sound walls or other noise mitigation measures such as adequate setbacks and air conditioning.

Short-Term Construction Impacts

Short-term noise impacts associated with construction activities along portions of the project area may occur, but are not expected to be severe. The nearest residences are on Hawai'i Kai Drive, located approximately 600 feet from the project area. As a result, adverse noise impacts during construction are considered to be unlikely. Noise exposure from construction activities at any one receptor location is not expected to be continuous during the total construction period.

Noise levels of diesel powered construction equipment typically range from 80 to 90 dB at 50 feet distance. Adverse impacts from construction noise are not expected to be in the "public health and welfare" category due to the temporary nature of the work and administrative controls regulating the work. Impacts will be limited to the temporary degradation of the acoustic environment in the immediate vicinity of the project site.

The State Department of Health currently regulates construction noise under a permit system. Under current procedures, noisy construction activities are restricted to hours between 7:00 AM and 6:00 PM, Monday through Friday, excluding certain holidays, and 9:00 AM and 6:00 PM on Saturdays. Construction is not permitted on Sundays. Because the construction of the project will

affect traffic during normal working hours, construction during the evening and night time hours would minimize traffic congestion. Construction activities during the evening and night time hours are possible, but require the issuance of noise variances by the State Department of Health.

The use of quieted portable engine generators and diesel equipment will be specified for use on this project. Heavy truck and equipment staging areas will be located at areas as far from noise sensitive properties as feasible. Truck routes will avoid residential communities wherever possible. The use of construction noise barriers may also be used where close-in construction work to noise sensitive structures is unavoidable.

2.3 BIOLOGICAL ENVIRONMENT

2.3.1 Flora

Existing Conditions

Vegetation

An assessment of the botanical resources on site was conducted in July 2005 (Morden & Associates), and is included as Appendix B. The objective of the study was to describe the existing vegetation, and to identify the presence of threatened or endangered species.

No native plants were found in the project corridor. Adjacent to the sidewalk is property that is largely covered with Bermuda grass (*Cynodon dactylon*) and is mowed regularly. Scattered throughout are a few trees, mostly coconut trees (*Cocos nucifera*) and a couple fig trees (*Ficus microcarpa*). Mixed with the Bermuda grass are an assortment of other “weedy” species of grass, herbs, and shrubs. The shrub (Indian fleabane-*Pluchea indica*) is mowed regularly along with the grass so that its presence at the site is not obvious. Other grasses include swollen fingergrass (*Chloris barbata*) and fuzzytop (*Bothriochloa barbinodis*). Common herbs include *Boerhavia coccinea*, coat buttons (*Tridax procumbens*), *Ipomoea obscura*, cheeseweed (*Malva parviflora*), and *Heliotropium procumbens*.



Vegetated area on mauka side of Kalaniana'ole Highway. Coconut trees will not be impacted by the project.



Project area near the intersection of Hawaii Kai Drive (looking west). Bus shelter and coconut trees will remain.

Project Impacts and Mitigation

The proposed road is not expected to have a significant negative impact on botanical resources. No threatened or endangered species will be affected. The trees found in the area are close to the project corridor, but not in it, and are not expected to be impacted by construction.

2.3.2 Terrestrial Fauna

A survey of avian and terrestrial mammalian species in the project area was conducted in August 2005 (Rana Productions, Ltd. 2005). The primary purpose of the survey was to determine if there were any federally or State listed endangered, threatened, proposed, or candidate avian or mammalian species on, or in the immediate vicinity of the site. The report is included as Appendix C.

Existing Conditions

Mammalian Species

All observations of mammalian species were of an incidental nature, limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), all terrestrial mammals currently found on O'ahu are alien species, most are ubiquitous.

Three mammalian species, the domestic dog (*Canis f. familiaris*), small Indian mongoose (*Herpestes a. auro punctatus*), and cat (*Felis catus*) were detected within the study site. Scat, tracks and sign of dog, cat and mongoose were encountered within the site. All of these introduced mammalian species are deleterious to native avian species.

The findings of the mammalian survey are consistent with the highly disturbed, urban nature of the site. It is likely that cat densities on the site are normally higher than recorded since there is a feral cat feeding station located at the commuter parking area just mauka of Keāhole Drive.

Avian Species

Due to the highly disturbed nature of the site and its immediate proximity to the very busy Kalaniana'ole Highway, standardized avian point counts were not practical. A walking survey was made of the entire site, and a list of all avian species detected was kept. The survey was conducted in the early morning hours, the time of day that bird activity is typically at its peak.

Thirteen different avian species representing 11 separate families were recorded during the survey. Two species, Great Frigatebird (*Fregata minor*) and Pacific Golden Plover (*Pluvialis fulva*) are indigenous. The remaining species detected during the survey are considered to be alien to the Hawaiian Islands. They include the Red Junglefowl (*Gallus gallus*), Rock Pigeon (*Columba livia*), Spotted Dove (*Streptopelia chenensis*), Zebra Dove (*Geopelia striata*), Red-vented Bulbuls (*Pycnonotus cafer*), Japanese White-eye (*Zosterops japonicus*), Common Myna (*Acridotheres tristis*), Red crested Cardinal (*Paroaria coronata*), Northern Cardinal (*Cardinalis cardinalis*), House Finch (*Carpodacus mexicanus*), and Java Sparrow (*Padda oryzivora*).

Avian diversity and densities were low, not surprising given the urban habitat of the site. Zebra Doves were the most numerous species bird. No species currently listed by either the U.S. Fish

and Wildlife Service under the Endangered Species Act of 1973, or the State of Hawai'i under its endangered species program were detected within the study area.

These findings are consistent with the highly disturbed, urban nature of the study site. The native Great Frigatebird is a seabird and was seen soaring over the site. There is no habitat on the site suitable for use as either foraging or nesting habitat for this species. The Pacific Golden Plover is one of the more frequently encountered indigenous migratory shorebirds found in Hawai'i during the late summer and winter months. The short grass present on the site provides foraging and loafing habitat for this species. This species does not breed in Hawai'i.

Project Impacts and Mitigation

The vegetation on the site is typical of that found in landscaped roadside area on O'ahu, and is planted and maintained in a park like fashion. It is not expected that the modification of the habitat currently found on site of the construction of the planned road improvements will have a negative impact on any listed or candidate avian or mammalian species.

Individual Pacific-Golden Plover may be disturbed or displaced by construction activity, though this disturbance will be of a temporary nature.

As part of the project's compliance with the federal National Environmental Policy Act and Section 7 of the Endangered Species Act, a letter dated January 30, 2006 was sent to the U.S. Fish and Wildlife Service (USFWS) indicating that the project will have "no effect" on any rare, threatened or endangered species or designated critical habitat. The USFWS has confirmed via e-mail that they reviewed the project and concur with the no effect determination. Documentation is included in Appendix C.

2.4 SOCIO-ECONOMIC ENVIRONMENT

2.4.1 Population and Employment

Existing Conditions

Year 2000 census data for the two census tracts that cover the project area are shown in Table 3-1 below.

Compared the City and County of Honolulu, both census tracts have a higher percentage of white (alone) residents. The percentage of Asian (alone) residents is very similar to the County wide average. The percentage of native Hawaiian and other Pacific Islanders is below the County average.

Table 2-2: 2000 Census Data for Hawai'i Kai Census Tracts 1.06 and 1.07
(in number of persons and percentage of total)

	Honolulu City & County	CT 1.06	CT 1.07
TOTAL	876,156	6,752	3,017
White alone	186,484 (21.3%)	2,395 (35.5%)	930 (30.8%)
Asian alone	403,371 (46.0%)	3,143 (46.5%)	1,407 (46.6%)
Native Hawaiian & other Pacific Islander alone	77,680 (8.9%)	215 (3.2%)	84 (2.8%)
Black or African American alone	20,619 (2.4%)	44 (0.6%)	3 (0.1%)
American Indian and Alaska native alone	2,178 (0.3%)	12 (0.2%)	2 (0.1%)
Other race alone	11,200 (1.3%)	41 (0.6%)	16 (0.5%)
Two or more races	174,624 (20.0%)	902 (13.4%)	575 (19.0%)

Source: U.S. Census Bureau, 2000

The Hawai'i Kai area includes a number of established residential communities including Kuliouou, Hahaione, Mariner's Ridge, Kuapā, and Portlock. Over the past few years, new residential development in the Hawai'i Kai area has boomed, adding over 1,000 new homes and condominiums, with plans for over 500 more units. Real estate experts attribute the recent growth to a changing economy and pent-up demand for new homes (Honolulu Advertiser, May 2, 2004). However, many residents have expressed concerns with the resulting increase in traffic on Hawai'i Kai roads, including Keāhole Street, Hawai'i Kai Drive, and Kalaniana'ole Highway. Citizen concerns have also been raised about the loss of open space, and proposed development of agricultural designated lands at the back of Kamilonui Valley.

As with most bedroom communities, Hawai'i Kai has a relatively small employment base. Most of the jobs in Hawai'i Kai are related to local-serving retail and service businesses in one of several large commercial areas, including the Hawai'i Kai Towne Center and Koko Marina Shopping Center.

The Hawai'i Kai Towne Center is located on Keāhole Street near the Kalaniana'ole Highway intersection. Major tenants of this retail shopping center include Costco, City Mill, and Ross Dress For Less. Other tenants include medical and dental offices, real estate, and financial services. A Hawai'i Kai Satellite City Hall is located in the complex.

Project Impact and Mitigation

The project construction will not cause an increase in development, population or traffic in the Hawai'i Kai area. Planned residential development in Hawai'i Kai will occur regardless of whether or not the proposed improvements are constructed.

Construction of the improvements will cause temporary traffic disruption near the Keāhole Street and Kalaniana'ole Highway intersection. Project construction will also cause an increase in noise and dust in the vicinity.

In the long term, the intersection improvements will have a positive socio-economic impact by improving traffic flow in the area, facilitating highway access for existing and future developments. The proposed improvements will not increase roadway capacity, and will not directly cause or encourage future population growth or an increase in vehicular traffic.

2.4.2 Archaeological, Historic, and Cultural Resources

Existing Conditions

An Archaeological Literature Review and Field Inspection for the project (Cultural Surveys Hawai'i, July 2005) and a Cultural Impact Evaluation (Cultural Surveys Hawai'i, July 2005) were done for the project, and both reports are included in Appendix D. The studies assessed the potential for significant historic properties and potential impacts to cultural practices.

Kalaniana'ole Highway between Keāhole Street and Hawai'i Kai Drive is constructed on landfill deposited in the 1960s within Kuapā Pond, a traditional Hawaiian fishpond. As discussed previously, the dredging of Kuapā Pond and creation of the marina was a major task in the creation of Hawai'i Kai, done by industrialist Henry J. Kaiser. The project area was created by landfill during this period. The project area between Keāhole Street and Hawai'i Kai Drive was constructed more recently in the 1990s during a Phase II Widening Project on Kalaniana'ole Highway. At that time, the current highway was built to replace the original highway constructed in the late 1920s.

The study area was the subject of archaeological monitoring during the Phase II Widening of Kalaniana'ole Highway in the mid 1990s. That highway widening project extended 1.4 miles between East Halemaumau Road and Keāhole Street.

Both human burial and non-burial sites were documented during the project. However, all the sites were encountered in Jaucus sand deposits in Kuliouou Ahupua'a, and none were encountered in the current project area.

It is thus unlikely that any subsurface historic properties are present beneath the highway. In light of the extensive dredging within the pond itself during the Hawai'i Kai development; it is unlikely that any of the original pond deposits remain undisturbed beneath the project area.

The Phase II widening of Kalaniana'ole Highway (East Halemaumau Road to Keāhole Street) completed in the mid 1990s included the current project area. During archaeological monitoring for that project, no historic properties were encountered between Keāhole Street and Hawai'i Kai Drive. All properties documented during that project—including human burials and non burial sites—were encountered in Jaucus sand deposits beneath the highway corridor to the northwest of the subject area.

The field inspection conducted for the 2005 Cultural Surveys Hawai'i study confirmed that Kalaniana'ole Highway between Keāhole Street and Hawai'i Kai Drive is a modern, multi-lane divided roadway. Construction of the current highway corridor in the 1960s and subsequent improvement projects have long eliminated any surface historic properties of archaeological concern within the right-of-way and vicinity. This includes any surface remnants of the original Kalaniana'ole Highway alignment.

As part of the Cultural Impact Evaluation, Cultural Surveys Hawai'i contacted Hawaiian organizations, agencies and community representatives in order to identify native Hawaiian resources, beliefs and practices associated with the project area that might be impacted by the project. Entities consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs, the O'ahu Island Burial Council, and Hui Malama I Na Kupuna O Hawai'i Nei. No contemporary or continuing cultural practices occur within the project area.

Project Impacts and Mitigation

Given the fact that the project area was created by fill in the 1960s and the negative results of past archaeological monitoring, it is unlikely that *in situ* human interments are present in the project area. The project will have minimal impact on native Hawaiian cultural resources, beliefs and practices.

Based on the findings of the Archaeological Literature Review and Field Inspection, no further archaeological investigation is warranted.

It should be noted, however, that historic properties such as traditional Hawaiian and historic artifacts, and human remains are occasionally encountered in landfill materials. As a precautionary measure, personnel involved in highway construction should be informed that the SHPD should be notified if any potential historic properties are encountered during the project.

Section 106, National Historic Preservation Act and HRS Chapter 6E Consultation

Consultation with the Department of Land and Natural Resources State Historic Preservation Division (DLNR/SHPD) in accordance with Section 106 of the National Historic Preservation Act has been initiated. Documentation is provided in Appendix D. The consultation also satisfies the requirements of HRS Chapter 6E, Hawaii's Historic Preservation Law.

A letter was sent by the Federal Highway Administration (FHWA) to the SHPD on February 15, 2006, requesting initiation of consultation in accordance with Section 106 of the National Historic Preservation Act. Section 106 consultation letters were also sent to Hui Mālama I Na Kūpuna O Hawai'i Nei and the Office of Hawaiian Affairs. The FHWA determined that the project will have "no effect" on archaeological or cultural resources. In a response letter dated April 3, 2006 (LOG NO: 2006.0885, DOC NO: 0603CM101), the SHPD concurred with the FHWA determination of "no effect" on historic properties for the proposed undertaking. Copies of these letters are included in Appendix D.

2.4.3 Visual Resources

Existing Conditions

The project area includes the highway right-of-way and a landscaped, open grassed area adjacent to the right-of-way. Important scenic resources in the project vicinity include the Maunalua Bay Beach Park and ocean, located immediately makai of the project area; the Hawai'i Kai Marina, and the Ko'olau Mountain range. The East Honolulu Sustainable Communities Plan (City and County of Honolulu, 1999) Open Space map identifies this stretch of Kalaniana'ole Highway as having panoramic views looking makai toward the ocean. Other important views are toward the mountains and marina. Keāhole Street and Hawai'i Kai Drive, which are situated perpendicular to Kalaniana'ole Highway, also offer views of these scenic resources.



Maunalua Bay Beach Park is located across Kalaniana'ole Highway from the project area.

Project Impact and Mitigation

During the construction period, the visual character of the immediate area will be modified with the presence of construction equipment and personnel. However, after completion, the highway improvements will not have a visual impact. The addition of a right-turn lane onto an existing highway is compatible with the existing use, and will not obstruct views of the beach park, ocean, marina or mountains.



Mauka views in the project area.

The visual environment of the area may change over the next 10 to 20 years, particularly if the adjacent privately-owned lands are developed. However, any future development would occur with or without the proposed project. The improvements do not affect the likelihood of future development in the area.

The project will have no long-term, indirect or cumulative development impacts that could affect the visual environment.

2.5 UTILITIES AND INFRASTRUCTURE

2.5.1 Drainage

Existing Conditions

The existing drainage system for Kalaniana'ole Highway, Hawai'i Kai Drive and Keāhole Street collects surface runoff and discharges it directly into the marina. A 1996 Environmental Impact Report for another proposed development on Kalaniana'ole Highway between Hawai'i Kai Drive and Keāhole Street estimated the 10-year and 50-year peak runoff rates in the area at 31 cubic feet per second (cfs) and 44 cfs, respectively (Wanket et al., 1996).

Project Impacts and Mitigation

The proposed Kalaniana'ole Highway Improvements project will add a turning lane to Kalaniana'ole Highway on its mauka side, and impact two Board of Water Supply fire hydrants and a water meter box in the sidewalk area. The fire hydrants are fed off of an existing 24-inch water main located in the outbound lane. The water meter serves the vacant land mauka of the highway right-of-way (owned by Kamehameha Schools/Bishop Estate) and is fed off of one of the 6-inch fire hydrant lines.

The proposed project will relocate three drain catch basins and one drain manhole during its relocation of the mauka sidewalk.

2.5.2 Potable Water

Existing Conditions

Potable water is provided by the Board of Water Supply. The Hawai'i Kai water system consists of five water service levels which are identified as the "170," "405," "500," "815," and "820" service levels. The numbers refer to a common spillway elevation. The project area is served by the 170 service system, which serves areas below the spillway elevation. The 170 service system consists of four large pipeline loops with transmission mains ranging in size from 12 to 36 inches in diameter. Water distribution lines are located in Kalaniana'ole Highway, Keāhole Street, and Hawai'i Kai Drive, among others.

Project Impacts and Mitigation

The project will not impact existing potable water lines or water demand.

2.5.3 Electrical and Telecommunications

Existing Conditions

Electrical service to the Hawai'i Kai area is provided by Hawaiian Electric Company (HECO). Telephone service is provided by Hawai'i Tel Com, and CATV service is provided by Oceanic Time Warner Cable. The roadway right-of-way also includes City and County traffic signal controls. Utility lines are located underground, primarily under sidewalks and streets.

Project Impacts and Mitigation

Some electrical and telecommunication facilities located in the Kalaniana'ole Highway mauka sidewalk and on Keāhole Street will need to be relocated when the turning lane is added. These include:

1. 3 HECO handholes
2. 2 Oceanic Time Warner Cable pull boxes
3. 4 Department of Transportation Services (DTS) traffic signal pull boxes
4. 3 State Department of Transportation (HDOT) street light pull boxes.
5. 2 street light standards along Kalaniana'ole Hwy
6. 1 street light standard on Keāhole St.
7. 1 type I traffic signal standard
8. 1 type III traffic signal standard
9. 1 DTS traffic signal controller
10. 1 DTS fiber optic cabinet for traffic cameras

11. 1 HECO meter enclosure for the DTS traffic signal controller

The following items are located on a concrete pad mauka of the existing sidewalk. These items will also be relocated to an area mauka of the new sidewalk to facilitate the widening of the road.

1. 2 HECO transformers
2. 2 HECO primary switches
3. 1 HECO switching vault
4. 1 HECO handhole

New underground ducts will be provided under the roadway to reconnect the relocated HECO primary facilities and Oceanic Time Warner Cable facilities. New underground ducts will be provided under the new sidewalk to reconnect the relocated HECO secondary facilities, DTS traffic signal facilities, and HDOT street light standards.

All project improvements will be coordinated with the applicable utility companies. There will be no disruption in service during the construction period.

2.5.4 Wastewater System

Existing Conditions

The project area is served by the privately owned East Honolulu Wastewater Treatment Plant, which opened in 1965 and is located on the mauka side of Kalaniana'ole Highway near Sandy Beach. The plant collects wastewater from residential sources in the Hawai'i Kai, Kuliouou, Paiko, and Portlock communities. Some wastewater is also received from commercial users around Koko Marina. Wastewater lines serving the general area range in size from 8 to 12 inches in diameter.

The East Honolulu WWTP is a partial-tertiary treatment facility. The plant's design capacity is 5.2 mgd with current flows at approximately 3.8 mgd. The treated effluent is discharged via a 36-inch outfall, 1,400 feet off Sandy Beach.

Under the State of Hawai'i's rules and guidelines for wastewater systems and the treatment and use of reclaimed water, recycled water from the wastewater facility can be used for irrigation purposes. A 2 million gallon per day (mgd) filtration and disinfection facility has been built to produce R-1 rated recycled water for irrigation purposes. In 1997, the State authorized the Hawai'i Kai Golf Course to use this recycled water from the East Honolulu WWTP for irrigation.

Project Impacts and Mitigation

The project improvements will not impact existing sewer lines, the wastewater collection system, or wastewater demand.

2.5.5 Solid Waste

The City and County of Honolulu's Department of Environmental Service is responsible for refuse pick up, hauling and disposal from residential areas. Commercial establishments and multi-family residential development contract with private haulers. Refuse is disposed at the City's H-POWER refuse to energy plant located at Campbell Industrial Park and the Waimanalo Gulch Landfill in leeward O'ahu.

The project will not have short or long-term impacts due to hazardous materials, waste or petroleum products. Construction activities will utilize hazardous materials including paints, metal, tar, petroleum products and cleaners. All construction materials will be properly used, transported, stored and disposed. All construction debris and waste will be removed from the project area. The construction contractor will dispose of all debris at DOH-approved City and County disposal or recycling facilities, and in accordance with City requirements. No construction waste materials will be buried on site.

The contractor will develop a contingency plan to control accidental spills of petroleum products. Material and equipment necessary for spill clean up will be kept on site.

The contractor will comply with Hawai'i Revised Statutes Chapter 103D-407, which stipulates that all highway and road construction and improvement projects funded by the State or County (or roadways that will be accepted as public roads) use a minimum of ten percent crushed glass aggregate in all base course (treated or untreated) and sub base, when the glass is available to the quarry or contractor at a price no greater than that of the equivalent aggregate.

2.6 TRAFFIC

2.6.1 Existing Conditions

Kalaniana'ole Highway is the primary roadway corridor linking east Honolulu communities with the H-1 Freeway and central Honolulu. Between the H-1 Freeway eastbound to Hawai'i Kai Drive, Kalaniana'ole Highway is a divided six lane highway with a landscaped median. However, in the project area between Hawai'i Kai Drive and Keāhole Street, Kalaniana'ole Highway narrows to a four-lane roadway. Double left-turn lanes are provided for eastbound traffic to accommodate the large volume of left turns at both Hawai'i Kai Drive and Keāhole Street. Kalaniana'ole Highway includes a bicycle lane in each direction between Lunalilo Home Road in Hawai'i Kai to the H-1 Freeway.

Hawai'i Kai Drive and Keāhole Street are feeder streets that serve the mauka residential and commercial areas of Hawai'i Kai. Both streets have three makai-bound lanes on the approach to Kalaniana'ole Highway, with two lanes designated for right-turns and the third lane for through and left turn traffic.



Existing Kalaniana'ole Highway and Keāhole Street intersection.



Kalaniana'ole Highway looking west (townbound) from Keāhole Street intersection.

2.6.2 Project Impacts and Mitigation

The proposed project will convert one of two existing right-turn lanes from Keāhole Street onto Kalaniana'ole Highway into a free right turn lane. This lane will continue to the Hawai'i Kai Drive intersection. Construction is estimated to take about a year.

During construction, the right-most lane (westbound) of Kalaniana'ole Highway between Keāhole Street and Hawai'i Kai Drive will be closed, and as a result, town bound traffic will be impacted. The existing bus stop just before Hawai'i Kai Drive will remain operational, but may need to be temporarily relocated. The HDOT will coordinate construction plans and phasing with the City and County Public Transit Division to avoid disruption to bus service.

Traffic patterns from Keāhole Street onto Kalaniana'ole Highway will remain unchanged, but the presence of construction equipment and personnel could cause minor inconvenience to motorists.

Upon completion of the project improvements, it is anticipated that traffic flow from Keāhole Street onto Kalaniana'ole Highway will improve, as the free right-turn lane will allow traffic to proceed onto the highway without stopping at the traffic signal.

2.7 PUBLIC SERVICES AND FACILITIES

2.7.1 Police

Existing Conditions

Hawai'i Kai is under the jurisdiction of the Honolulu Police Department's District 7 command, which covers the area from Punahou Street to Makapuu. Police officers serving the area operate out the departmental headquarters on Beretania Street.

Project Impacts and Mitigation

The Police Department has indicated that the project should have no significant impact on Police facilities or operations.

The contractor will provide, install and maintain all necessary signs, lights, barricades, markers, cones, and other safety facilities. These safety precautions will conform with the "Rules and Regulations Governing the Use of Traffic Control Devices at Work Sites on or Adjacent to Public Streets and Highways," as adopted by the Highway Safety Coordinator and the U.S. Federal Highway Administration.

Despite the above mitigation, dust, noise, odors and construction traffic are inevitable during the construction period. These may generate complaint calls to the local police station.

Once roadway improvements are completed, traffic flow in the area should be improved over current conditions.

2.7.2 Fire and Emergency Medical Services

Existing Conditions

The Honolulu Fire Department consists of four battalions with Battalion 2 servicing the east Honolulu District. The Hawai'i Kai Fire Station (Company 34) is located on Lunalilo Home Road. The station is equipped with an engine truck and ladder truck. About nine firefighters are on duty per shift. The next nearest station is the Wailupe Fire Station, located about three miles west on Kalaniana'ole Highway. An Emergency Medical Services (EMS) team is based at the Wailupe Fire Station.

Project Impacts and Mitigation

The project will not impede fire or emergency vehicle access on Kalaniana'ole Highway, Keāhole Street or Hawai'i Kai Drive. The project will require relocation of two fire hydrants. The contractor will coordinate with the Board of Water Supply and Fire Department to ensure that fire protection in the area is not disrupted during the construction period.

2.7.3 Parks

Existing Conditions

The project site is located directly across the Maunalua Bay Beach Park, a public beach park about 5.4 acres in size. The park includes picnic facilities, parking, and a boat ramp. The boat ramp is the only public boat ramp between Kailua and Waikiki, and the park is used primarily as a boat launch site. Other recreational activities at Maunalua Bay Beach Park include shoreline fishing, jet skiing, parasailing, kayaking, swimming, and diving (Wanket et al., 1996).

Other community and neighborhood parks are located within the residential areas mauka of Kalaniana'ole Highway. Kamiloiki Community Park is about 18.5 acres in size and is located at the corner of Hawai'i Kai Drive and Lunalilo Home Road. Neighborhood parks in the vicinity include the Kamiloiki Neighborhood Park in Kamiloiki Valley and Koko Head Neighborhood Park. Both are located on Lunalilo Home Road, east of the project area.

Project Impacts and Mitigation

The Department of Parks and Recreation has noted that the project will not impact any of its programs or facilities. There will be no short or long-term, direct, indirect or cumulative impact on parks or other recreational resources in the area.

2.7.4 Schools

Existing Conditions

There are five public schools serving students in the Hawai'i Kai area, including three elementary schools, one intermediate school, and one high school. The elementary schools include Hahaione Elementary, Koko Head Elementary, and Kamiloiki Elementary Schools. Niu Valley Intermediate School and Kaiser High School also serve students living between Aina Haina and Hawai'i Kai.

Project Impacts and Mitigation

The project will not impact school facilities or school enrollment. The project will not affect the population of the surrounding communities. Future growth in Hawai'i Kai will occur independent of the proposed project.

3 CONSISTENCY WITH EXISTING PLANS, POLICIES AND CONTROLS

3.1 FEDERAL

3.1.1 National Environmental Policy Act (NEPA)

The project will utilize federal funds and is subject to the provisions of the National Environmental Policy Act (NEPA) of 1969 as amended, and the regulation of the Council on Environmental Quality (CEQ), 40 CFR parts 1500 through 1508.

23 CFR Part 77, Environmental Impact and Related Procedures, prescribes the level of documentation required in the NEPA process. Projects that do not individually or cumulative have a significant environmental effect are excluded from the requirement to prepare an Environmental Assessment (EA) or Environmental Impact Statement (EIS), and qualifies as Categorical Exclusion (CATEX). The FHWA has determined that the proposed project qualifies as a CATEX, pursuant to 23 CFR §771.117(d). Appropriate CATEX documentation, in compliance with NEPA, is being prepared and will be submitted to the FHWA.

3.1.2 Section 106, National Historic Preservation Act

Section 106 of the National Historic Preservation Act of 1966 (NHPA) requires federal agencies to take into account the effects of their undertakings on historic properties. Consultation with the Department of Land and Natural Resources State Historic Preservation Division (DLNR/SHPD) and Native Hawaiian organizations have been conducted as part of the Section 106 process. The FHWA has determined, and the SHPD has concurred that this project will have “no effect” on archaeological or cultural resources. These issues are discussed in Chapter 2 of this Environmental Assessment, and reports and correspondence are included in Appendix D.

3.1.3 Section 7, Endangered Species Act

Section 7 of the Endangered Species Act requires federal agencies to ensure that any action they authorize, fund, or carry out is not likely to adversely affect a listed species or designated critical habitat. A letter was sent to the USFWS on January 30, 2006, providing copies of the botanical assessment and survey of avian and terrestrial mammals completed for this project. Based on the results of these studies, the FHWA and the HDOT determined that the project will have “no effect” on rare, threatened or endangered species or designated critical habitat. The USFWS has concurred with this determination.

3.1.4 Section 4(f) Department of Transportation Act

Section 4(f) of the Department of Transportation Act, 49 U.S.C. §303 states that it is national policy to preserve public parks, recreation areas, wildlife and waterfowl refuges and historic sites. It prohibits the use of federal funds for projects that have significant adverse impacts on the above resources unless there is no prudent and feasible alternative and the project includes all possible planning to minimize harm resulting from the use of such lands.

Compliance with Section 4(f) will be addressed in the CATEX document that is being prepared for this project. The project does not involve any use of Section 4(f) resources.

3.1.5 Executive Order 12898 Environmental Justice

Executive Order 12898, Environmental Justice, requires projects utilizing federal funds to identify and address potential for disproportionately high and adverse human health or environmental effects on minority and low-income populations. The CE document will address the project's compliance with E.O. 12898. The project will not have a disproportionate adverse environmental impact on low income or minority populations.

3.2 STATE OF HAWAI'I

3.2.1 Hawai'i State Plan

The 1996 Hawai'i State Plan (Chapter 226, HRS) is the umbrella document in the statewide planning system. It serves as a written guide for the future long-range development of the state by describing a desired future for the residents of Hawai'i and providing a set of goals, objectives, and policies that are intended to shape the general direction of public and private development.

State plan objectives for transportation facility systems are: 1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe and convenient movement of people and goods; and 2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State. (HRS §226-17). The State Plan's Transportation Functional Plan was prepared in 1991, and recommends specific strategies and policies to achieve the State Plan objectives.

The roadway improvements are consistent with the objectives and policies of the Hawai'i State Plan and Transportation Functional Plan.

3.2.2 State Land Use Classification

The State Land Use Commission, pursuant to Chapter 205 and 205A, HRS and Chapter 15-15, Hawai'i Administrative Rules, is empowered to classify all lands in the State into one of four land use districts: urban, rural, agricultural and conservation. The entire project area and immediately surrounding lands are all within the State's Urban District (Figure 8). The City and County of Honolulu regulates activities or uses within the Urban district. The proposed roadway improvements are consistent with this State Land Use designation.



Source: Hawai'i State Geographic Information Systems (GIS)

Figure 8
State Land Use

3.3 CITY AND COUNTY OF HONOLULU

3.3.1 County General Plan

General Plan Objectives and Policies

The project is in conformance with the following policies and guidelines of the City and County of Honolulu's *1992 General Plan Objectives and Policies*:

Chapter I. Population

Objective B: To plan for future population growth

Policy 2: Provide adequate support facilities to accommodate future growth in the number of visitors to O'ahu.

Chapter V. Transportation and Utilities

Objective A: To create a transportation system which will enable people and goods to move safety, efficiently, and at reasonable cost; serve all people, including the poor, the elderly, and the physically handicapped; and offer a variety of attractive and convenient modes of travel.

Policy 5: Improve roads in existing communities to reduce congestion and eliminate unsafe conditions.

Chapter VII. Physical Development and Urban Design

Objective F: To promote and enhance the social and physical character of O'ahu's older towns and neighborhoods.

Policy 3: Provide and maintain roads, public facilities, and utilities without damaging the character of older communities.

3.3.2 East Honolulu Sustainable Communities Plan

The project site is located in the East Honolulu Sustainable Communities Plan (SCP) area. The current East Honolulu Sustainable Communities Plan (1999) was the second of eight City and County of Honolulu Development Plans to be revised to reflect a 1992 City Charter amendment that called for conceptual, visionary plans to replace the parcel-specific, map oriented Development Plans adopted in the 1980s.

Where the Ewa and Primary Urban Center areas were targeted for major population growth and economic activity, the remaining six planning regions, including East Honolulu, were envisioned to remain relatively stable.

According to the East Honolulu SCP, the vision for East Honolulu's future was to be implemented through the following key element:

- Urban community, agriculture, and preservation boundaries
- The Koko Head-Makapuu scenic district
- Ridge and valley neighborhoods
- Mauka-makai recreational access
- Protection and preservation of natural areas
- Housing stability
- Hawai'i Kai Town Center; and
- Neighborhood-oriented services.

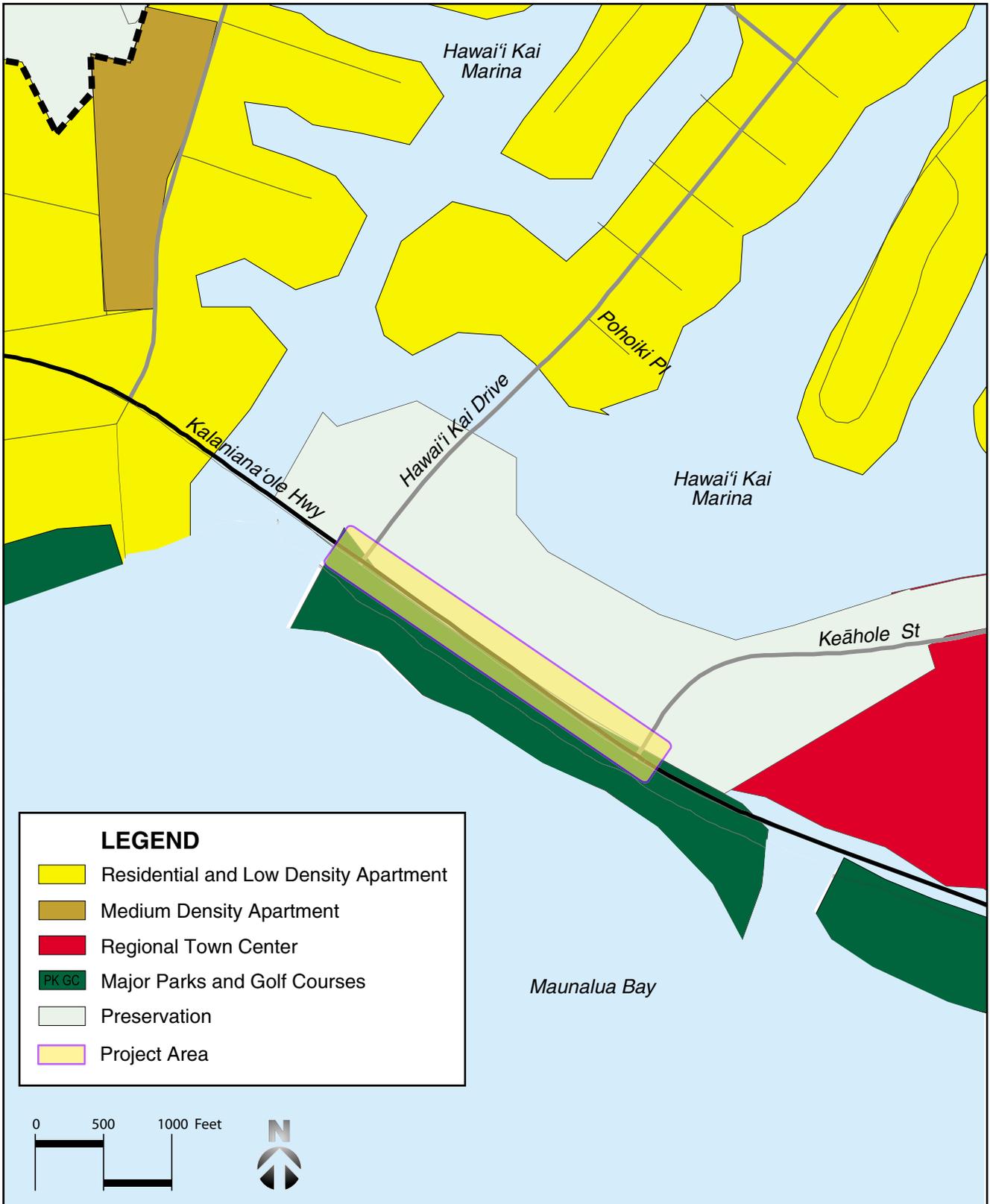
Chapter 4, Public Facilities and Infrastructure Policies and Principles, includes guidance for public facilities and infrastructure systems. One of the general policies relating to public facilities and infrastructure is to maintain "adequate person-carrying capacity for peak-period commuting to and from work in the Primary Urban Center." The proposed intersection improvements are consistent with this policy.

The East Honolulu SCP's Urban Land Use Map (Figure 9) identifies the mauka side of Kalaniana'ole Highway as "Preservation." Some land on the mauka side of the right-of-way will be affected by the project improvements. The project does not affect land on the makai side of the highway, designated as "Major Park." The addition of another traffic lane is compatible with the Urban Land Use Map, as it continues an existing public use (road), and work will take place mostly within the highway right-of-way.

The SCP's Open Space map identifies the view from the highway toward the ocean as a "Panoramic View." The project will not affect views toward the ocean or mountains. The SCP's Public Facilities Map identifies Kalaniana'ole Highway as a highway or major street, and indicates the presence of a bike lane along the highway. The project improvements will reconstruct the bike lane when the roadway is widened. Overall, the project improvements are consistent with the East Honolulu SCP.

East Honolulu SCP Five Year Review

The City and County is currently undergoing its five-year review of the 1999 East Honolulu SCP. Since early 2005, the City has held workshops, interviews, focus groups, and made presentations as part of the review process. A draft report of findings and recommendations is being prepared. This report will be reviewed at a public workshop. The revised five-year review report, with recommended revisions to the Development Plan, will be submitted to the Planning Commission and City Council.



Source: C & C Honolulu, Dept. of Planning & Permitting, April 1999

Figure 9

East Honolulu Sustainable Communities Plan, Urban Land Use Map

3.3.3 County Zoning

The City and County of Honolulu's Land Use Ordinance (Section 21, ROH) is its zoning ordinance, which regulates land use in a manner that will encourage orderly development in accordance with adopted land use policies.

As shown in Figure 10, the entire project corridor is zoned P-2, General Preservation. Lands immediately mauka and makai of the project corridor are also zoned P-2. The purpose of the Preservation zoning district is to preserve and manage major open space and recreation lands and lands of scenic and other natural resource value.

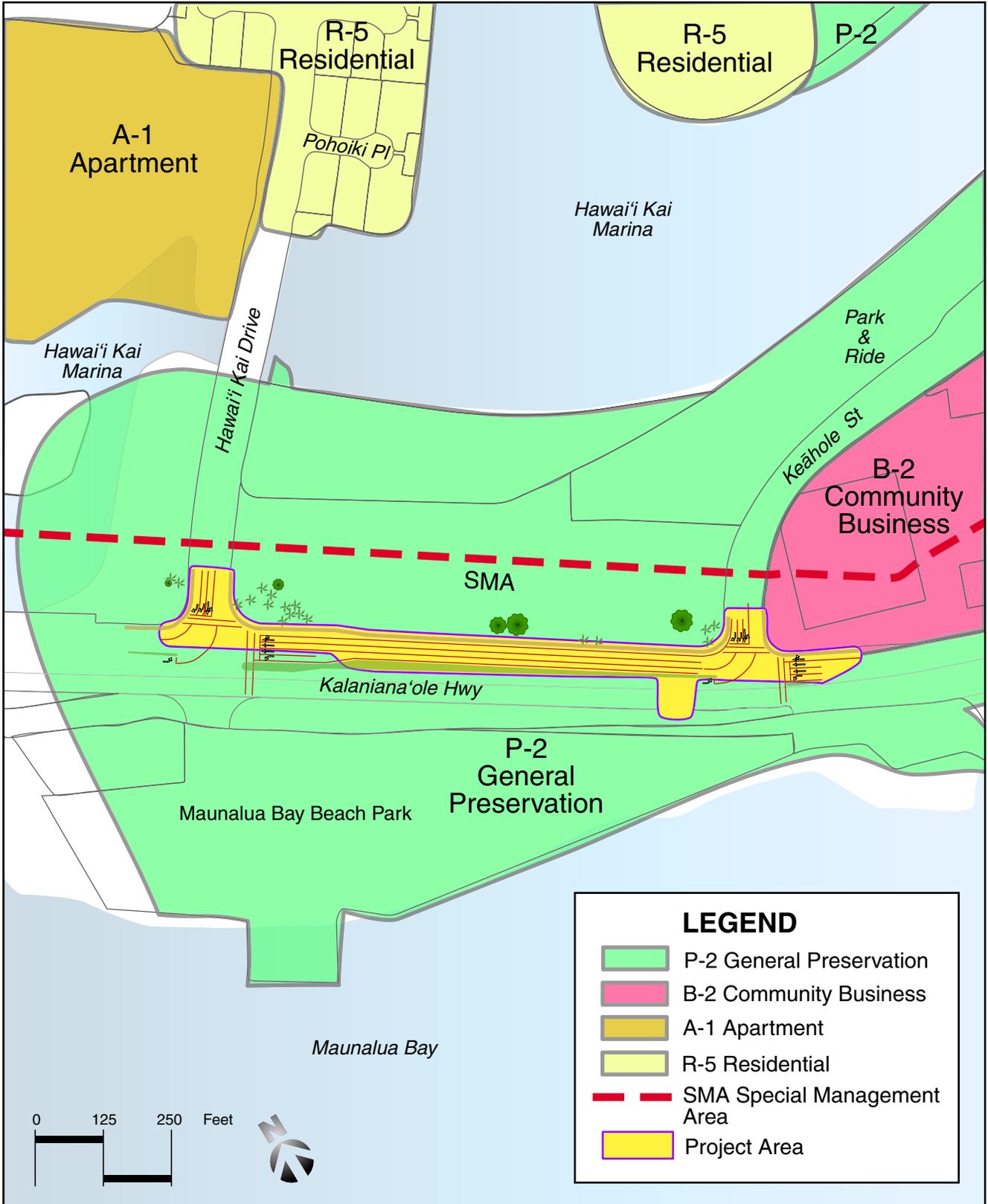
Lands on the east side of Keāhole Street are zoned B-2, Community Business. The intent of the B-2 district is to provide areas for community-wide business establishments serving several neighborhoods and offering a wider range of uses than is permitted in the B-1 district. This district is usually applied to lots along major streets in centrally located areas.

The Land Use Ordinance (LUO) provisions generally apply to above ground uses and structures, outside of rights-of-way. The proposed intersection improvements will take place primarily, though not exclusively, within the State ROW. It will be a State-owned and operated roadway, and is considered a "public use and structure" for LUO purposes. A "public use and structure" is a "permitted use" in all zoning districts, including P-2 (LUO Master Use Table 21-3, p. 3-10).

As such, the project improvements are consistent with the City and County's zoning designation.

3.3.4 Special Management Area

Coastal Zone Management objectives and policies (Section 205A-2, HRS) and the Special management Area (SMA) guidelines (Section 25-3.2 ROH) have been developed to preserve, protect, and where possible, to restore the natural resources of the coastal zone of Hawai'i. As shown in Figure 10, all of Kalaniana'ole Highway is within the City and County's Special Management Area. Although land within rights-of-way is exempt from SMA requirements, a portion of the roadway improvements will occur on private land, outside the ROW. As a result, a Special Management Area Use Permit (SMP) will be obtained for the project.



Source: Hawai'i State Geographic Information Systems (GIS)

Figure 10
Zoning and SMA Designation

3.4 OTHER CONSIDERATIONS

3.4.1 Unavoidable Adverse Effects

All potential environmental impacts discussed in Chapter 2 could either be avoided or mitigated to an extent that they would not be significant.

3.4.2 Energy Requirements and Conservation Potential of Various Alternatives and Mitigation Measures

Energy consumption will be required in the short-term for ground clearing, grading, and roadway construction. Because the improvements are strictly to improve existing traffic flow, the project will not increase roadway capacity. The project will not increase energy requirements in the long-term.

By facilitating traffic flow in the area, the project may reduce overall traffic congestion, and in this way, may indirectly reduce vehicular energy consumption.

3.4.3 Relationship of Short-Term uses and Long-Term Productivity

In the short-term, the project will have temporary construction-related impacts on the surrounding area. The road improvements will require a commitment of public construction funds. However, the long-term project benefits far outweigh the short-term tradeoffs. The roadway improvements will improve traffic flow and increase the efficiency of the local roadway network. This has become important as residential development and associated traffic congestion in Hawai'i Kai has increased in recent years.

3.4.4 Irretrievable and Irreversible Resource Commitments

Resources that are committed irreversibly or irretrievably are those that cannot be recovered if the project is implemented. The proposed project will involve two types of resources: 1) general industrial resources including capital, labor, fuels and construction equipment; and 2) project-specific resources such as natural resources and land at the affected site. General industrial resources will be spent during project construction and for long-term operation and maintenance of the road. Rather than preventing its use for other uses, the intersection improvements will actually enhance these uses in the immediately surrounding areas.

4 DETERMINATION, FINDINGS AND REASONS SUPPORTING THE CHAPTER 343 HRS DETERMINATION

4.1 CHAPTER 343 HRS DETERMINATION

Based on the information and analysis in this Environmental Assessment, the proposed project will not result in a significant impact on the environment. The State of Hawai'i Department of Transportation has issued a Finding of No Significant Impact (FONSI), pursuant to requirements of the State of Hawai'i HRS Chapter 343, and recommends that an Environmental Impact Statement (EIS) not be required.

4.2 CHAPTER 343 HAWAI'I REVISED STATUTES (HRS) SIGNIFICANCE CRITERIA

In determining whether an action may have significant impact on the environment, the applicant or agency must consider all phases of the project, its expected consequences both primary and secondary, its cumulative impact with other projects, and its short and long-term effects. The State of Hawai'i Department of Health Rules Section 11-200-12 (Hawai'i Administrative Rules, revised 1996) establish 13 "Significance Criteria" to be used as a basis for identifying whether significant environmental impact will occur.

An agency will determine an action may have a significant impact on the environment if it meets any of the following criteria:

1. Involves an irrevocable commitment to loss or destruction of any natural or cultural resources;

The project improvements will take place mostly within the State's highway right-of-way, although some work is planned for privately-owned land outside the ROW. The improvements are consistent with the area's existing use as a roadway corridor, and with the City and County of Honolulu East Honolulu Sustainable Communities Plan.

There are no significant biological resources within the project site, including threatened or endangered species or their habitats. The area is on fill land deposited within Kuapa pond, and it is unlikely that any historic properties are present beneath the highway, particularly on the mauka side where the improvements are planned. No contemporary or continuing cultural practices occur within the project area.

2. Curtails the range of beneficial uses of the environment;

The proposed project does not curtail the range of beneficial uses of the environment. The project area is largely within the roadway right-of-way, with few, if any alternative beneficial uses. The improvements will support future development in the Hawai'i Kai area, by improving traffic flow onto Kalaniana'ole Highway.

3. Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders;

The proposed project is consistent with the environmental policies established in Chapter 344, HRS and the National Environmental Policy Act. As a roadway improvement, the proposed project is consistent with the Chapter 344 policy of *“Establishing communities which provide a sense of identity, wise use of land, efficient transportation...in harmony with the natural environment...[§344-3 (2)(C)].* It is also consistent with the guidelines on Transportation, which *“Encourage transportation systems in harmony with the lifestyle of the people and environment”* and the guideline to *“Encourage public and private vehicles and transportation systems to conserve energy, reduce pollution emission, including noise, and provide safe and convenient accommodations for their users.” [§344-4(6)].*

The project is consistent with Executive Order 12898, Environmental Justice, as there will be no disproportionate adverse effect on minority and low-income communities.

4. Substantially affects the economic or social welfare of the community or state;

The proposed project will not substantially affect the economic or social welfare of the community or State. Construction will have minor, short-term air and noise impacts. However, due its distance from existing land uses, these effects will be minimal. The project will have a long-term positive impact on area traffic movement, and thus, on the economic and social welfare of the community.

5. Substantially affects public health;

The project will not substantially affect public health. The temporary construction-period impacts to air quality and noise are insignificant when weighed against its overall, long-term positive impacts.

6. Involves secondary impacts such as population changes or effects on public facilities;

The intersection improvements alone will not generate additional vehicle traffic, population changes or affect public facilities. The Hawai'i Kai area has experienced a boom in residential construction in recent years, with additional housing units planned to come on line. This growth will occur with or without the proposed project.

7. Involves a substantial degradation of environmental quality;

Construction period impacts related to noise and air quality will be temporary and short-term, and will not degrade environmental quality. The project site has no significant botanical or other biological resources. The project will not obstruct views or degrade the visual environment. The roadway extension is consistent with surrounding land uses and land use plans for the area.

8. Is individually limited but cumulatively has considerable effect up on the environment or involves a commitment for larger actions;

The proposed action is intended to improve traffic flow in the area. It will not increase roadway capacity or increase traffic. These improvements will not involve a commitment for larger actions. The proposed build out of Hawai'i Kai will increase the area's population and traffic, but these will occur whether or not the proposed intersection improvements are implemented.

9. Substantially affects a rare, threatened or endangered species, or its habitat;

No rare, threatened or endangered species or its habitat will be impacted by the project. There are no significant biological resources in the project vicinity.

10. Detrimentially affects air or water quality or ambient noise levels;

The project will result in short-term construction period increases in fugitive dust and noise. Once it is completed and operational, the intersection improvements will have no impact on air or water quality. It will not increase vehicular traffic or traffic-associated noise.

11. Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters;

Kalaniana'ole Highway in this area is within a flood prone area and a tsunami inundation area. However, the improvements are being made to an existing coastal road, and will not increase the potential for flood or tsunami damage. The project will not have an adverse effect on near shore waters.

12. Substantially affects scenic vistas and viewplanes identified in county or state plans or studies; or

The project will not impact scenic vistas or viewplanes identified in county or state plans or studies. The roadway improvements will be at grade, and compatible with the existing roads and surrounding developments.

13. Requires substantial energy consumption.

The project will not require substantial energy consumption. Energy resources will be consumed during project construction. Operational period energy consumption will be negligible. The project will not have indirect or cumulative impacts on energy consumption.

5 REFERENCES

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6 PERSONS AND AGENCIES INVOLVED IN THE PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

6.1 LIST OF PREPARERS

This Environmental Assessment (EA) was prepared for the State of Hawaii Department of Transportation Services and U. S. Department of Transportation, Federal Transit Administration by Kimura International, Inc. The following individuals were involved in the preparation of the EA.

Name	Contribution/Specialization
KN Consulting Services, Inc.	Prime Consultant, Project Design, Civil Engineering
Ken Nagai	Overall Project Manager
Kimura International, Inc.	Environmental Assessment
Glenn T. Kimura	EA Project Manager
Leslie Kurisaki	EA Primary Author
EA Subconsultants	
Reggie David, Rana Productions, Ltd.	Terrestrial Fauna
Clifford Morden, Morden & Associates	Botanical Resources
David Shideler, Cultural Surveys Hawaii, Inc.	Archaeology, Cultural Resources, Cultural Impact
Y. Ebisu & Associates	Acoustic Study

6.2 EARLY CONSULTATION FOR DRAFT ENVIRONMENTAL ASSESSMENT

The following agencies and organizations were contacted during the early consultation for the Draft Environmental Assessment. Letters soliciting comments were sent in August 2005, and a total of 9 written responses were received. Agencies that responded are noted with an asterisk (*) below. Comments received are included at the end of this chapter.

Federal

U.S. Army Engineer Division
 Federal Highway Administration

State

Department of Business, Economic Development & Tourism, Office of Planning

Department of Hawaiian Home Lands
Department of Land and Natural Resources

- Land Division
- State Historic Preservation Division

Department of Health

- Environmental Management Division
- *Office of Environmental Quality Control

*Department of Human Services

*Office of Hawaiian Affairs

City and County of Honolulu

Department of Budget and Fiscal Services

*Department of Design and Construction

Department of Environmental Services

*Department of Facility Maintenance

Fire Department

Department of Planning & Permitting

Oahu Civil Defense Agency

*Department of Parks and Recreation

*Police Department

*Department of Transportation Services

*Board of Water Supply

Other Organizations

Hawaiian Electric Company

Hawaiian TelCom

Oceanic Time Warner Cable

Kamehameha Schools/Bishop Estate

Elected Officials

Senator Fred Hemmings

Representative Bud Stonebraker

Councilmember Charles Djou

Hawaii Kai Neighborhood Board

6.3 COMMENTS RECEIVED DURING DRAFT EA COMMENT PERIOD

The Draft EA was published in the April 23, 2006 edition of the Office of Environmental Quality Control (OEQC)'s The Environmental Notice. The 30-day comment period ended on May 23, 2006. Copies of the Draft EA were sent to the agencies and organizations listed below, and also made available at public libraries. During the comment period, thirteen (13) comment letters were received, from the agencies noted in **bold** type below.

Comments received are included at the end of this chapter.

Federal

U.S. Army Engineer Division
Federal Highway Administration

State

Department of Business, Economic Development & Tourism, Office of Planning

Department of Hawaiian Home Lands

Department of Land and Natural Resources

- Land Division
- **State Historic Preservation Division**

Department of Health

- Environmental Management Division
- **Office of Environmental Quality Control**

Department of Human Services

Office of Hawaiian Affairs

City and County of Honolulu

Department of Budget and Fiscal Services

Department of Design and Construction

Department of Environmental Services

Department of Facility Maintenance

Fire Department

Department of Planning & Permitting

Oahu Civil Defense Agency

Department of Parks and Recreation

Police Department

Department of Transportation Services

Board of Water Supply

Other Organizations

Hawaiian Electric Company

Hawaiian TelCom

Oceanic Time Warner Cable

Kamehameha Schools/Bishop Estate

Elected Officials

Senator Fred Hemmings

Representative Bud Stonebraker

Councilmember Charles Djou

Hawaii Kai Neighborhood Board

**Comments Received During Draft EA
Early Consultation**

(August 2005)

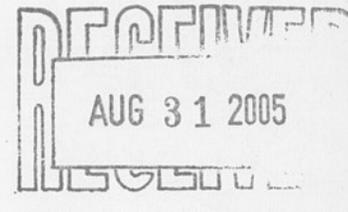
LINDA LINGLE
GOVERNOR



LILLIAN B. KOLLER, ESQ.
DIRECTOR

HENRY OLIVA
DEPUTY DIRECTOR

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
Benefit, Employment and Support Services Division
820 Mililani Street, Suite 606
Honolulu, Hawaii 96813



August 25, 2005

Refer to: 05-0727

Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Thank you for your letter of August 3, 2005. The Director of the Department of Human Services (DHS) has forwarded your letter to me for a response.

We have reviewed your project to improve the operational efficiency of the Kalaniana'ole Highway and Keahole Street intersection. We currently do not have any licensed child care facilities, elementary schools or other offices or facilities within that geographic area therefore, we have no comments to submit at this time. It appears pedestrians and bikers would find ample accommodation on the makai side of the highway or by taking the alternative route via Hawaii Kai Drive where it intersects with Kalaniana'ole Highway.

Thank you for affording us the opportunity to provide comments on your proposed project. Should you have any questions or concerns, please contact Ms. Luanne Murakami, Acting Oahu Branch Administrator, at 587-3325.

Sincerely,

Patricia Murakami
Division Administrator

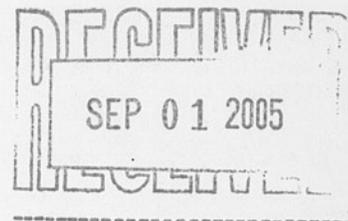
c: Lillian B. Koller, Esq., Director

PHONE (808) 594-1888

FAX (808) 594-1865



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPI'OLANI BOULEVARD, SUITE 500
HONOLULU, HAWAII 96813



HRD05/1887 B

August 28, 2005

Glenn T. Kimura, President
Kimura International
1600 Kapi'olani Blvd., Suite 1610
Honolulu, HI 96814

RE: Request for early consultation on proposed Kalaniana'ole Highway Intersection Improvements, Maunalua, Kona, O'ahu; TMK: 3-9-017:020

Dear Glenn Kimura,

The Office of Hawaiian Affairs (OHA) is in receipt of your August 3, 2005, request for comments on the above project, which would include improvements to the intersection across from Maunalua Bay Beach Park, Hawaii Kai. OHA apologizes for the delayed response, and while we look forward to the opportunity to review the forthcoming Draft Environmental Assessment in detail, we offer the following general concerns.

We appreciate the need for improvements in this heavily used intersection, but we note potential conflicts with users of Maunalua Bay Beach Park. Outrigger canoe paddling, surfing, fishing and other Native Hawaiian traditional and customary gathering, access and use rights should not be restricted – even during the construction process – except as necessary to ensure safety. If such safety-related restrictions are put in place, alternate access routes must be provided.

Thank you for the opportunity to comment. If you have any further questions or concerns please contact Heidi Guth at 594-1962 or e-mail her at heidig@oha.org.

Sincerely,

Clyde W. Nāmu'o
Administrator

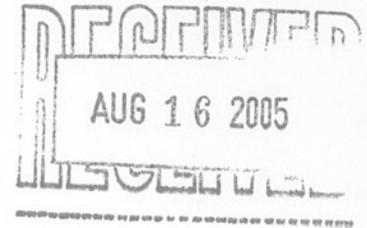
LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: oeqc@health.state.hi.us



August 15, 2005

Mr. Glenn Kimura
Kimura International
1600 Kapiolani Blvd. Suite 1610
Honolulu, HI 96814

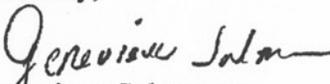
Subject: Kalaniana'ole Highway Intersection Improvements
Pre-consultation

Dear Mr. Kimura:

We have received your letter dated August 3, 2005 on the Kalaniana'ole Highway intersection improvement.

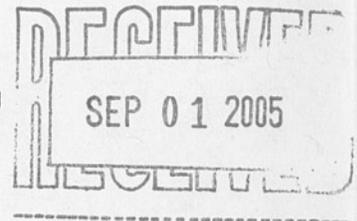
We have no comments to offer at this time, but will reserve further comments when the documents are submitted. Thank you for the opportunity to review your request and should you have any questions, please feel free to call our office at 586-4185.

Sincerely,


Genevieve Salmonson
Director

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 3RD FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4529 • FAX: (808) 523-4730 • INTERNET: www.co.honolulu.hi.us



MUFI HANNEMANN
MAYOR



EDWARD Y. HIRATA
DIRECTOR

ALFRED A. TANAKA, P.E.
DEPUTY DIRECTOR

TP8/05-116184R

August 30, 2005

Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Kalaniana'ole Highway Intersection Improvements

Thank you for your August 11, 2005 letter, requesting our comments related to the subject project.

At this time, our only comment is that since bus service will be impacted during construction of the proposed improvements, it is critical that the Public Transit Division has an opportunity to review the construction plans.

We look forward to reviewing the draft environmental assessment. Should you have any comments regarding this matter, please contact Faith Miyamoto of the Transportation Planning Division at 527-6976.

Sincerely,

A handwritten signature in black ink, appearing to read "Edward Y. Hirata". The signature is fluid and cursive.

EDWARD Y. HIRATA
Director

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

1000 ULUOHIA STREET, SUITE 309 • KAPOLEI, HAWAII 96707
PHONE: (808) 692-5561 • FAX: 692-5131 • INTERNET: www.honolulu.gov

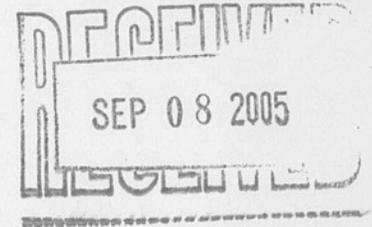
MUFI HANNEMANN
MAYOR



LESTER K. C. CHANG
DIRECTOR

DANA L. TAKAHARA-DIAS
DEPUTY DIRECTOR

August 31, 2005



Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Kalaniana'ole Highway Intersection Improvements
(TMK 3-9-17:20, Maunaloa Ahupua'a, Kona District, Oahu)
Environmental Assessment-Early Consultation

Thank you for the opportunity to review and comment on the proposed Kalaniana'ole Highway Intersection Improvements.

The Department of Parks and Recreation has no comment on this project and as it will not impact any of our programs or facilities, you are invited to remove us as a consulted party to the balance of the Environmental Assessment/Shoreline Management process.

Should you have any questions, please contact Mr. John Reid, Planner, at 692-5454.

Sincerely,

A handwritten signature in black ink, appearing to read "Lester K. C. Chang".

LESTER K. C. CHANG
Director

LKCC:mk
(115114)

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.honolulu.gov

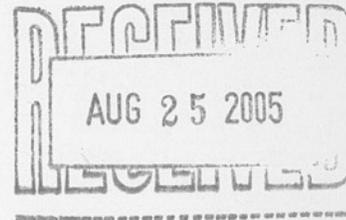


MUFI HANNEMANN
MAYOR

WAYNE M. HASHIRO, P.E.
DIRECTOR

EUGENE C. LEE, P.E.
DEPUTY DIRECTOR

August 24, 2005



Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Blvd., Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Kalaniana'ole Highway Intersection Improvements
TMK 3-9-17:20, Maunaloa Ahupua'a, Kona District, Oahu
Environmental Assessment – Early Consultation

Thank you for inviting us to submit our comments regarding the above Environmental Assessment - Early Consultation.

The Department of Design and Construction recommends that any improvements to the street lighting system in the City's right-of-way on Keahole Street must meet City roadway lighting standards.

Should you have any questions, please contact Gerald Hamada of our Mechanical/Electrical Division, at 527-5002.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Eugene C. Lee".

for WAYNE M. HASHIRO, P.E.
Director

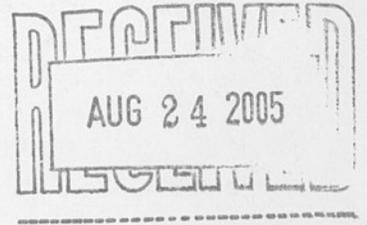
WMH:lt

c: DDC Mechanical/Electrical Division

DEPARTMENT OF FACILITY MAINTENANCE

CITY AND COUNTY OF HONOLULU

1000 ULUOHIA STREET, SUITE 215, KAPOLEI, HAWAII 96707
TELEPHONE : (808) 692-5054 FAX: (808) 692-5857
Website: www.honolulu.gov



MUFI HANNEMANN
MAYOR



LAVERNE HIGA, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE K. MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO:
DRM 05-810

August 16, 2005

Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: **Kalaniana'ole Highway Intersection Improvements
Hawaii Kai Drive to Keahole Street
Environmental Assessment – Early Consultation**

Thank you for the opportunity to provide comments on the subject proposed roadway widening project.

Kalaniana'ole Highway is a State Department of Transportation roadway and our only comment at this time regarding the project is that the roadway widening does not have any adverse affects on intersecting City roadways. We request any needed improvements or revisions to the existing storm water drainage system and ADA accessible pathways at these locations be addressed in the design and construction.

Should you have any questions, please call Charles Pignataro our Division of Road Maintenance, at 484-7697.

Very truly yours,

LAVERNE HIGA, P.E.
Director and Chief Engineer

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



MUFI HANNEMANN, Mayor

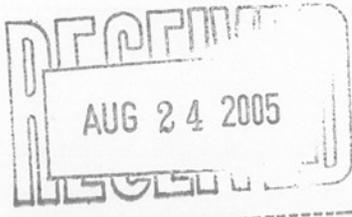
RANDALL Y. S. CHUNG, Chairman
HERBERT S. K. KAOPUA, SR.
DAROLYN H. LENDIO
SAMUEL T. HATA

RODNEY K. HARAGA, Ex-Officio
LAVERNE HIGA, Ex-Officio

HERBERT H. MINAKAMI
Interim Manager and Chief Engineer

DONNA FAY K. KIYOSAKI
Deputy Manager and Chief Engineer

August 17, 2005



Mr. Glenn T. Kimura, President
Kimura International, Incorporated
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Your Letter of August 3, 2005, on the Environmental Assessment—Early
Consultation for the Kalaniana'ole Highway Intersection Improvements,
TMK:3-9-17:20

Thank you for the opportunity to comment on the subject project.

The construction drawings should be submitted for our review.

The construction schedule should be coordinated to minimize impact to the water system.

If you have any questions, please contact Joseph Kaakua at 748-5442.

Very truly yours,

HERBERT H. MINAKAMI
Interim Manager and Chief Engineer

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111
<http://www.honolulu.org>
<http://www.honolulupd.org>
www.honolulu.gov



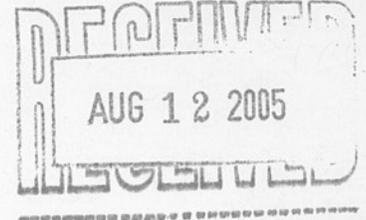
MUFI HANNEMANN
MAYOR

BOISSE P. CORREA
CHIEF

GLEN R. KAJIYAMA
PAUL D. PUTZULU
DEPUTY CHIEFS

OUR REFERENCE **BS-KP**

August 9, 2005



Mr. Glenn T. Kimura, President
Kimura International, Inc.
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

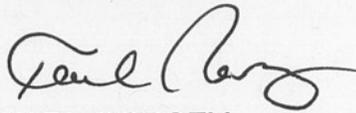
Thank you for the opportunity to review and comment on the Environmental Assessment for the Kalaniana'ole Highway Intersection Improvements.

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 Bart Huber of District 7 at 529-3362 or Mr. Brandon Stone of the Executive Bureau at 529-3644.

Sincerely,

BOISSE P. CORREA
Chief of Police

By 
KARL GODSEY
Assistant Chief of Police
Support Services Bureau

Honolulu Police Department

This project should have no significant impact on the facilities or operations of the

Assessment for the Kalaniana'ole Highway Intersection Improvements.

Thank you for the opportunity to review and comment on the Environmental

**Comments Received During Draft EA
Comment Period**

(April-May 2006)



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
BUILDING 223
FORT SHAFTER, HAWAII 96858-5440

REPLY TO
ATTENTION OF: CEPOH-EC-T

RECEIVED MAY 04 2006

May 3, 2006

Civil Works Technical Branch

Ms. Lesli Kurisaki
Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Ms. Kurisaki:

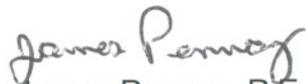
Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Kalaniana'ole Highway Improvements Project, Oahu (TMK 3-3-17: 20). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Based on the information provided, a DA permit will not be required for the project.

b. We concur with the flood information provided on page 2-5 of the DEA.

Should you have any questions, please call Ms. Jessie Dobinchick of my staff at 438-8876.

Sincerely,


James Pennaz, P.E.
Chief, Civil Works
Technical Branch

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1758

Mr. James Pennaz, P.E.
Chief, Civil Works
Technical Branch
Department of the Army
U.S. Army Engineer District, Honolulu
Building 223
Fort Shafter, Hawaii 96858-5440

Dear Mr. Pennaz:

Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements,
Vicinity of Hawaii Kai Drive to Keahole Street
Honolulu District, Island of Oahu
TMK (1) 3-9-17:20 and within State ROW

Thank you for your comment letter to Kimura International dated May 3, 2006, regarding this project. We note that a DA permit will not be required for this project, and that you concur with the flood information provided in the DEA.

Please feel free to call Reid Tokuhara at 692-7691 if you have any other comments or questions.

Very truly yours,

A handwritten signature in black ink, appearing to read "Brennan T. Morioka".

8 BRENNON T. MORIOKA
Deputy Director-Highways

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

LINDA LINGLE
GOVERNOR
STATE OF HAWAII



MICAH A. KANE
CHAIRMAN
HAWAIIAN HOMES COMMISSION

BEN HENDERSON
DEPUTY TO THE CHAIRMAN

KAULANA H. PARK
EXECUTIVE ASSISTANT

STATE OF HAWAII
DEPARTMENT OF HAWAIIAN HOME LANDS

P.O. BOX 1879
HONOLULU, HAWAII 96805

RECEIVED MAY 02 2006

May 1, 2006

To: The Honorable Rod Haraga, Director
Department of Transportation

From: *for* Micah A. Kane, Chairman
Hawaiian Homes Commission *Micah Kane*

Subject: Draft Environmental Assessment for the Kalaniana'ole Highway
Improvements Project, Vicinity of Hawaii Kai Drive to Keahole
Street, Oahu

Thank you for the opportunity to provide comments on the draft environmental assessment report for the Kalaniana'ole Highway Improvements project within the vicinity of Hawaii Kai Drive to Keahole Street. The Department of Hawaiian Home Lands has no comments to offer.

Should you have any questions, please call the Planning Office at 586-3836.

c: Office of Environmental Quality Control
✓ Kimura International

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1762

TO: MICAH KANE
CHAIRMAN
DEPARTMENT OF HAWAIIAN HOME LANDS

FROM: BRENNON T. MORIOKA
DEPUTY DIRECTOR-HIGHWAYS

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, KALANIANAOLE HIGHWAY
IMPROVEMENTS, VICINITY OF HAWAII KAI DRIVE TO KEAHOLE
STREET, HONOLULU DISTRICT, ISLAND OF OAHU
TMK (1) 3-9-17:20 AND WITHIN STATE ROW

Thank you for your memorandum dated May 1, 2006, regarding this project. We note that your department has no comments.

Please feel free to call Reid Tokuhara at 692-7691 if you have any comments or questions.

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

STATE HISTORIC PRESERVATION DIVISION
601 KAMOKILA BOULEVARD, ROOM 555
KAPOLEI, HAWAII 96707

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

RECEIVED MAY 04 2006

May 1, 2006

Mr. Glenn Kimura
Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawai'i 96814

LOG NO: 2006.1233
DOC NO: 0604CM60
Archaeology

Dear Mr. Kimura:

**SUBJECT: Chapter 6E-8Historic Preservation Review –
Kalaniana'ole Highway Improvements
Vicinity of Hawai'i Kai Drive to Keāhole Street
Maunalua Ahupua'a, Honolulu [Kona] District, Island of Oahu
TMK: (1) 3-9-017:020 (portion)**

Thank you for the opportunity to comment on the aforementioned project. We received your documents, including a cover letter and Draft Environmental Assessment (DEA), on April 21, 2006. The proposed undertaking consists of improvements to an approximately 800-foot section of the Kalaniana'ole Highway in Hawai'i Kai. Our review of this project is based on records available at the State Historic Preservation Division (SHPD) and on reports by Cultural Surveys of Hawai'i (CSH) provided to us in a previous review of this project. No field inspection was conducted by the SHPD.

In a recent letter (LOG NO: 2006.0885, DOC NO: 0603CM101) dated April 3, 2006, we conducted a Section 106 (National Historic Preservation Act) review of this project, and stated:

According to research conducted by CSH (*Archaeological Literature Review and Field Inspection for a Highway Improvement Project on an Approximately 305-Meter Long Section of Kalaniana'ole Highway Between Keāhole Street and Hawaii Kai Drive, Maunalua Ahupua'a, Kona District, O'ahu Island, TMK (1) 3-9-17:20*), the proposed project area was located within the seaward (*makai*) margins of a historic fishpond (Kuapā, Site 49 in *Sites of Oahu*). Archival photographs from the 1920s compiled by CSH (*ibid.*) clearly indicate the presence of a narrow causeway—probably representing the margins of the historic fishpond—immediately adjacent to (*makai* of) the proposed project area. Soil distribution data indicate the proposed project area consists of “fill lands” associated with the 1960s development of Hawai'i Kai. Jaucas sand deposits are not located within the proposed project area, although they are located nearby to the west and east.

Based on these observations, CSH (*ibid.*:28) concludes as follows: “It is thus unlikely that any subsurface historic properties are present beneath the highway, particularly on its *mauka* side where the improvement project is planned... [I]t is [also] unlikely that any of the original pond deposits remain undisturbed beneath the project area.” We concur with these conclusions.

According to your cover letter, Hui Mālama I Na Kūpuna O Hawai‘i Nei has “...noted that burials were found during the highway widening in the 1990s, and indicated that additional unmarked burials may be impacted by this project.” As you have stated, however, these burials were all located west of the proposed project area (in Kuli‘ou‘ou Ahupua‘a), in Jaucas sand deposits. In fact, with all due respect to Hui Mālama, the proposed project area probably would have represented a very poor choice of location for traditional burials, in view of the fact that it would have been under water well into the 20th century.

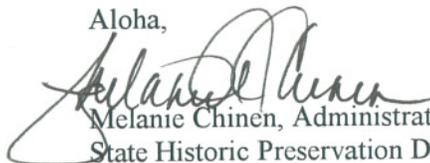
Finally, as stated by CSH, it is possible that historically-significant cultural resources, including previously-disturbed human remains, may sometimes be located in landfill materials. However, unless specific information regarding the presence of bones in fill is available, we cannot mitigate against such low probability occurrences.

In conclusion, we concur with your determination of “no effect” on historic properties for the proposed undertaking. If historic resources, including human skeletal remains, are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the SHPD needs to be contacted immediately at (808) 692-8015.

All of these comments remain unchanged for the present review of this project.

Please contact Dr. Chris Monahan at (808) 692-8015 if you have any questions about this letter.

Aloha,



Melanie Chinen, Administrator
State Historic Preservation Division

CM

cc: Director, OEQC

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1765

TO: MELANIE CHINEN, ADMINISTRATOR
STATE HISTORIC PRESERVATION DIVISION
DEPARTMENT OF LAND AND NATURAL RESOURCES

FROM:  BRENNON T. MORIOKA
DEPUTY DIRECTOR-HIGHWAYS

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, KALANIANAOLE HIGHWAY
IMPROVEMENTS, VICINITY OF HAWAII KAI DRIVE TO KEAHOLE
STREET, HONOLULU DISTRICT, ISLAND OF OAHU
TMK (1) 3-9-17:20 AND WITHIN STATE ROW

Thank you for your letter to Kimura International, Inc. dated May 1, 2006 (LOG NO: 2006.1233, DOC NO: 0604CM60) regarding this project. We note that your department has concurred with our determination of "no effect" on historic properties for the proposed undertaking.

Please feel free to call Reid Tokuhara at 692-7691 if you have any other comments or questions.

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

LINDA LINGLE
GOVERNOR OF HAWAII



GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

235 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186
E-mail: ceqc@health.state.hi.us

April 26, 2006

Brennon Morioka
Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, HI 96813

Attn: Reid Tokuhara

Dear Mr. Morioka:

Subject: Draft environmental assessment (EA),
Kalaniana'ole Highway Improvements, Hawaii Kai Drive to Keahole Street

We have the following comments to offer:

Agency and community consultation: If any correspondence has been received during the preconsultation period include copies in the final EA.

Project Coordination: The City & County of Honolulu is proposing sewer improvements to this area. Please coordinate with the Department of Design & Construction regarding scheduling so that all projects will be minimally disruptive for the public.

Timeframe: What are the anticipated start and end dates of the project?

Funding: The total project cost is not given. Disclose all state, county and federal funds involved, or provide percentages of the total from each of these sources.

If you have any questions, call Nancy Heinrich at 586-4185.

Sincerely,

A handwritten signature in cursive script that reads "Genevieve Salmonson".

GENEVIEVE SALMONSON
Director

c: Leslie Kurisaki, Kimura International

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1757

TO: THE HONORABLE GENEVIEVE SALMONSON
DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM:  BRENNON T. MORIOKA
DEPUTY DIRECTOR-HIGHWAYS

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, KALANIANA'OLE HIGHWAY
IMPROVEMENTS, VICINITY OF HAWAII KAI DRIVE TO KEAHOLE
STREET, HONOLULU DISTRICT, ISLAND OF OAHU
TMK (1) 3-9-17:20 AND WITHIN STATE ROW

Thank you for your letter dated April 26, 2006, regarding this project. As you request, copies of correspondence received during the Draft EA comment period will be included in the Final EA.

We will coordinate with the City and County, Department of Design and Construction, which is proposing sewer improvements in the area, regarding scheduling.

The anticipated start date is in 2009, with construction duration of approximately seven months. Total project cost is estimated at \$3,000,000.00, and the project will utilize approximately 80% State and 20% Federal funds.

Please feel free to call Reid Tokuhara at 692-7691 if you have any other comments or questions.

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

LINDA LINGLE
GOVERNOR



LILLIAN B. KOLLER, ESQ.
DIRECTOR

HENRY OLIVA
DEPUTY DIRECTOR

RECEIVED MAY 25 2006

STATE OF HAWAII
DEPARTMENT OF HUMAN SERVICES
Benefit, Employment & Support Services Division
820 Mililani Street, Suite 606
Honolulu, Hawaii 96813

May 22, 2006

Mr. Reid Tokuhara
State of Hawaii
Department of Transportation
601 Kamokila Boulevard, Room 602
Kapolei, Hawaii 96707

Dear Mr. Tokuhara,

Thank you for your letter of April 20, 2006 regarding the Kalaniana'ole Highway Improvements, Vicinity of Hawaii Kai Drive to Keahole Street project. The Director of the Department of Human Services (DHS) has forwarded your letter to me for a response.

We currently have several licensed Group Child Care Centers, Family Child Care Homes and a Group Child Care Home in the vicinity of Hawaii Kai Drive to Keahole Street, however none of these child care providers are located along the proposed highway improvement location. Our concern is always for the safety of the children in care. It does not appear that the proposed construction would affect the operations of these providers other than traffic.

Thank you for the opportunity to provide comments on your proposed project. Should you have any questions or concerns, please contact Elaine Rabacal, Supervisor of the Child Care Connection Hawaii Office 1, at 587-5271.

Sincerely,


for Patricia Murakami
Division Administrator

c: Lillian B. Koller, Esq., Director
OEQC
✓ Kimura International

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1763

TO: PATRICIA MURAKAMI
DIVISION ADMINISTRATOR
DEPARTMENT OF HUMAN SERVICES
BENEFIT, EMPLOYMENT AND SUPPORT SERVICES DIVISION

FROM:  BRENNON T. MORIOKA
DEPUTY DIRECTOR-HIGHWAYS

SUBJECT: DRAFT ENVIRONMENTAL ASSESSMENT, KALANIANAOLE HIGHWAY
IMPROVEMENTS, VICINITY OF HAWAII KAI DRIVE TO KEAHOLE
STREET, HONOLULU DISTRICT, ISLAND OF OAHU
TMK (1) 3-9-17:20 AND WITHIN STATE ROW

Thank you for your letter dated May 22, 2006 regarding this project. We note your comment that the proposed construction will not affect the operation of your licensed Group Child Care Centers, Family Child Care Homes, and Group Child Care Home facilities in the area.

Please feel free to call Reid Tokuhara at 692-7691 if you have any other comments or questions.

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 523-4564 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR



DIRECTOR
EUGENE C. LEE, P.E.
DEPUTY DIRECTOR

May 10, 2006

RECEIVED MAY 13 2006

Mr. Glenn Kimura, President
Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura:

Subject: Kalaniana'ole Highway Improvements
Vicinity of Hawaii Kai Drive to Keahole Street

Thank you for the opportunity to comment on this Draft Environmental Assessment. The City & County of Honolulu, Department of Design and Construction have no comments.

Should you have any questions, please contact me at 523-4716.

Sincerely,

A handwritten signature in cursive script, appearing to read "Eugene C. Lee".

Eugene C. Lee, P.E.
Deputy Director

EL:lmy (151180)

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1760

Mr. Eugene C. Lee
Deputy Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Mr. Lee:

Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements,
Vicinity of Hawaii Kai Drive to Keahole Street
Honolulu District, Island of Oahu
TMK (1) 3-9-17:20 and within State ROW

Thank you for your review of the Draft Environmental Assessment for this project and for your letter to Kimura International dated May 10, 2006. We note that your department has no comments.

Please feel free to call Reid Tokuhara at 692-7691 if you have any comments or questions.

Very truly yours,

BRENNON T. MORIOKA
Deputy Director-Highways

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU

1000 Uluohia Street, Suite 215, Kapolei, Hawaii 96707
Phone: (808) 692-5054 • Fax: (808) 692-5857
Website: www.honolulu.gov

MUFI HANNEMANN
MAYOR



LAVERNE HIGA, P.E.
DIRECTOR AND CHIEF ENGINEER

GEORGE "KEOKI" MIYAMOTO
DEPUTY DIRECTOR

IN REPLY REFER TO:
06-424

May 5, 2006

Mr. Reid Tokuhara
State of Hawaii
Department of Transportation
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Dear Mr. Tokuhara:

**Subject: Draft Environmental Assessment (DEA) – Kalanianaʻole Highway
Improvements, Vicinity of Hawaii Kai Drive to Keahole Street**

Thank you for the opportunity to provide comments on the DEA, dated April 2006,
for the subject roadway widening project.

We understand that the roadway widening does not have any adverse affects to
intersecting City roadways. We request any needed improvements or revisions to City
facilities within these roadways be adequately addressed in the design and construction
phases of the project.

Should you have any questions, please call Charles Pignataro of the Division of
Road Maintenance, at 484-7697.

Very truly yours,

A handwritten signature in black ink that reads "Laverne Higa". The signature is written in a cursive, flowing style.

LAVERNE HIGA, P.E.
Director and Chief Engineer

cc: Office of Environmental Quality Control
Kimura International

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1761

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

Dear Ms. Higa:

Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements
Vicinity of Hawaii Kai Drive to Keahole Street
Honolulu District, Island of Oahu
TMK (1) 3-9-17:20 and within State ROW

Thank you for your review of the Draft Environmental Assessment for this project and for your letter dated May 5, 2006. Any needed improvements or revisions to City facilities within intersecting City roads will be adequately addressed during the design and construction phases of the project.

Please feel free to call Reid Tokuhara at 692-7691 if you have any comments or questions.

Very truly yours,

B BRENNON T. MORIOKA
Deputy Director-Highways

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

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

May 10, 2006

RECEIVED MAY 13 2006

Mr. Rodney K. Haraga, Director
State of Hawaii
Department of Transportation
Aliiimoku Hale
869 Punchbowl Street
Honolulu, Hawaii 96813

Attention: Mr. Reid Tokuhara, Traffic Operations Branch

Dear Mr. Haraga:

Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements
Vicinity of Hawaii Kai Drive to Keahole Street
Maunaloa Ahupua'a, Kona District, Oahu, Hawaii
Tax Map Key: 3-3-017: 20 (Portion) and highway right-of-way

In response to your letter dated April 20, 2006, regarding the above-mentioned project, the Honolulu Fire Department (HFD) reviewed the material you provided and requires that you comply with the following for the duration of the project:

1. Maintain fire apparatus access throughout the construction site.
2. Maintain access to fire hydrants. Please notify the HFD's Fire Communication Center at 523-4411 regarding any interruption of the existing fire hydrant system.

Should you have any questions, please call Battalion Chief Lloyd Rogers of our Fire Prevention Bureau at 723-7151.

Sincerely,

A handwritten signature in cursive script, reading "Alvin K. Tomita".

ALVIN K. TOMITA
Acting Fire Chief

AKT/SK:bh

cc: Ms. Leslie Kurisaki, Kimura International
Office of Environmental Quality Control

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1766

Chief Kenneth Silva
Honolulu Fire Department
City and County of Honolulu
636 South Street
Honolulu, Hawaii 96813

Dear Chief Silva:

Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements
Vicinity of Hawaii Kai Drive to Keahole Street
Honolulu District, Island of Oahu
TMK (1) 3-9-17:20 and within State ROW

Thank you for your review of the Draft Environmental Assessment for this project. We have received the letter from Acting Fire Chief Alvin K. Tomita dated May 10, 2006.

As requested, we will maintain fire apparatus and access to fire hydrants throughout the construction period.

Please feel free to call Reid Tokuhara at 692-7691 if you have any comments or questions.

Very truly yours,

BRENNON T. MORIOKA
Deputy Director-Highways

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

May 3, 2006

RECEIVED MAY 04 2006

State of Hawaii
Department of Transportation
Attention: Mr. Reid Tokuhara
601 Kamokila Boulevard, Room 602
Kapolei, Hawaii 96707

Gentlemen:

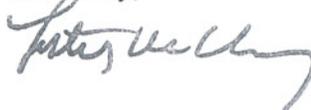
Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements
Vicinity of Hawaii Kai Drive to Keahole Street
Maunalua Ahupuaa, Kona District, Oahu

Thank you for the opportunity to review and comment on the Draft Environmental Assessment relating to the proposed Kalaniana'ole Highway Improvements.

The Department of Parks and Recreation has no comment on the proposed project and as it will not impact programs or facilities of the department, you are invited to remove us as a consulted party to the balance of the EIS process.

Should you have any questions, please contact Mr. John Reid, Planner, at 692-5454.

Sincerely,



LESTER K. C. CHANG
Director

LKCC:mk
(151495)

cc: Director, Office of Environmental Quality Control
Kimura International

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1769

Mr. Lester K.C. Chang, Director
Department of Parks and Recreation
City and County of Honolulu
1000 Uluohia Street, Suite 309
Kapolei, Hawaii 96707

Dear Mr. Chang:

Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements
Vicinity of Hawaii Kai Drive to Keahole Street
Honolulu District, Island of Oahu
TMK (1) 3-9-17:20 and within State ROW

Thank you for your review of the Draft Environmental Assessment for this project and for your letter dated May 3, 2006. We note that your department has no comment on the project, as it will not impact programs or facilities of the department.

Please feel free to call Reid Tokuhara at 692-7691 if you have any comments or questions.

Very truly yours,

A handwritten signature in black ink, appearing to read "Brennan T. Morioka".

BRENNON T. MORIOKA
Deputy Director-Highways

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

BOARD OF WATER SUPPLY

CITY AND COUNTY OF HONOLULU
630 SOUTH BERETANIA STREET
HONOLULU, HI 96843



May 10, 2006

MUFI HANNEMANN, Mayor

RANDALL Y. S. CHUNG, Chairman
HERBERT S. K. KAOPUA, SR.
SAMUEL T. HATA
ALLY J. PARK

RODNEY K. HARAGA, Ex-Officio
LAVERNE T. HIGA, Ex-Officio

CLIFFORD P. LUM
Manager and Chief Engineer

DONNA FAY K. KIYOSAKI
Deputy Manager and Chief Engineer

Mr. Glenn Kimura
Kimura International
1600 Kapiolani Boulevard, Suite 1610
Honolulu, HI 96814

RECEIVED MAY 12 2006

Dear Mr. Kimura:

Subject: Your Letter of April 20, 2006 on the Draft Environmental Assessment for Kalaniana'ole Highway Improvements, Vicinity of Hawaii Kai Drive to Keahole Street,
TMK: 3-3-17:20 por.

Thank you for the opportunity to comment on the proposed project.

The construction drawings should be submitted for our approval.

The construction schedule should be coordinated to minimize impacts to the water system.

If you have any questions, please contact Robert Chun at 748-5443.

Very truly yours,

KEITH S. SHIDA
Principal Executive
Customer Care Division

cc: Director, Office of Environmental Quality Control
Mr. Leslie Kurisaki, Kimura International

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1759

Mr. Keith S. Shida, Principal Executive
Customer Care Division
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Shida:

Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements,
Vicinity of Hawaii Kai Drive to Keahole Street
Honolulu District, Island of Oahu
TMK (1) 3-9-17:20 and within State ROW

Thank you for your review of the Draft Environmental Assessment for this project and for your letter dated May 10, 2006. As requested, construction drawings will be submitted for your approval. The construction schedule will be coordinated to minimize impacts to the water system.

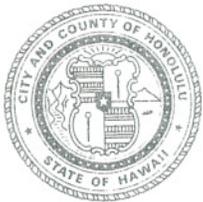
Please feel free to call Reid Tokuhara at 692-7691 if you have any comments or questions.

Very truly yours,

A handwritten signature in black ink, appearing to read "Brennan T. Morioka".

BRENNON T. MORIOKA
Deputy Director-Highways

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control



CITY COUNCIL
CITY AND COUNTY OF HONOLULU
HONOLULU, HAWAII 96813-3065 / TELEPHONE 547-7000

Charles K. Djou

Councilmember, District IV

Chair, Executive Matters & Legal Affairs Committee

Phone: (808) 547-7004 / Facsimile: (808) 523-4220

Email: cdjou@honolulu.gov

RECEIVED MAY 11 2006

May 8, 2006

Mr. Reid Tokuhara
State of Hawaii
Department of Transportation
601 Kamokila Blvd., Room 602
Kapolei, HI 96707

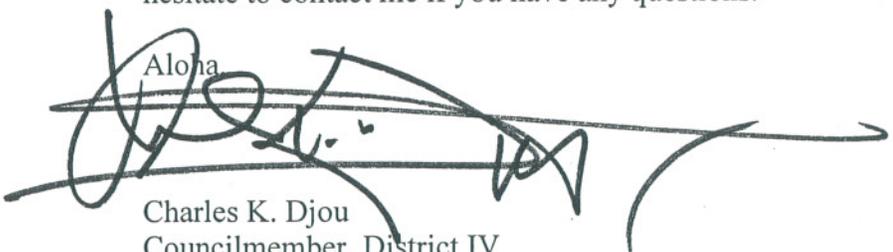
Dear Mr. Tokuhara:

Thank you for the opportunity to provide comments in support of the Draft Environmental Assessment (DEA) for the Kalaniana'ole Highway Improvements, as proposed by Kimura International. I represent District IV on the Honolulu City Council, which includes Hawaii Kai, the area where the project is proposed.

Over the last several years, residential development in Hawaii Kai has increased thereby causing more traffic for residents. The proposed project will help to improve traffic flow on Keahole Street and surrounding areas, especially during the morning rush hour and provide some traffic relief for motorists.

Again, thank you for allowing me to provide comments on this project. Please do not hesitate to contact me if you have any questions.

Aloha


Charles K. Djou
Councilmember, District IV

CKD:frf

cc: Kimura International
Director, Office of Environmental Control

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1764

The Honorable Charles K. Djou
Councilmember
City and County of Honolulu
Honolulu Hale
Honolulu, Hawaii 96813

Dear Councilmember Djou:

Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements
Vicinity of Hawaii Kai Drive to Keahole Street
Honolulu District, Island of Oahu
TMK (1) 3-9-17:20 and within State ROW

Thank you for your review of the Draft Environmental Assessment for this project and for your letter dated May 8, 2006. We note your comment that the proposed project will help to improve traffic flow on Keahole Street and surrounding areas, especially during the morning rush hour.

Please feel free to call Reid Tokuhara at 692-7691 if you have any comments or questions.

Very truly yours,

A handwritten signature in black ink, appearing to read "Brennan T. Morioka".

 BRENNON T. MORIOKA
Deputy Director-Highways

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

RECEIVED MAY 26 2006

May 22, 2006

Reid Tokuhara
State of Hawaii
Department of Transportation
601 Kamokila Boulevard, Room 602
Kapolei, Hawaii 96707

Dear Mr. Tokuhara:

Subject: **Kalaniana'ole Highway Improvements, Vicinity of Hawaii Kai Drive to Keahole Street**

Thank you for the opportunity to review the above subject Draft Environmental Assessment. There are no telephone facilities in the project area that will be affected.

If you have any questions, please call Serena Kwok at 840-2971.

Sincerely,



Jill Lee
Manager - OSP Engineering, East & West Oahu

c: File (Kokohead)
S. Kwok
Office of Environmental Quality Control
Kimura International

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1767

Ms. Jill Lee, Manager
OSP Engineering, East and West Oahu
Hawaiian Tel Com
P.O. Box 2200
Honolulu, Hawaii 96841

Dear Ms. Lee:

Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements
Vicinity of Hawaii Kai Drive to Keahole Street
Honolulu District, Island of Oahu
TMK (1) 3-9-17:20 and within State ROW

Thank you for your review of the Draft Environmental Assessment for this project and for your letter dated May 22, 2006. We note your comment that there are no telephone facilities in the area that will be affected by the project.

Please feel free to call Reid Tokuhara at 692-7691 if you have any comments or questions.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Brennan T. Morioka".

Handwritten initials in cursive script, appearing to read "BT".
BRENNON T. MORIOKA
Deputy Director-Highways

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control



RECEIVED MAY 31 2006

May 26, 2006

Mr. Reid Tokuhara
Department of Transportation
State of Hawaii
601 Kamokila Boulevard - Room 602
Kapolei, HI 96707

Dear Mr. Tokuhara:

**Re: Kalaniana'ole Highway Improvements
Vicinity of Hawaii Kai Drive to Keahole Street
Maunaloa Ahupuaa, Kona District, Oahu
TMK: (1)3-3-17:20 (Por. & Highway ROW)**

We reviewed the draft EA (DEA) of the subject property and have no comments other than to note that HECO is working with the State's consultant to relocate electrical equipment to which reference is made in Section 2.5.3, Electrical and Telecommunications (pp. 2-20 and 2-21).

Colin Chang, System Group Engineer, Transmission & Distribution Division, Engineering Department is our point of contact for this project. To coordinate HECO's continuing input in this project, we suggest that your staff and consultant deal directly with Colin (543-5619).

The thirty-day comment period ended on May 23, 2006, and we apologize for this late response. The April 20, 2006 cover letter transmitting the DEA was addressed to our former manager and routed to another department.

Thank you for the opportunity to comment on the DEA.

Sincerely,

Kirk S. Tomita
Senior Environmental Scientist

cc: OEQC
Ms. Leslie Kurisaki (Kimura Int'l)



LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097

JUL 26 2006

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
FRANCIS PAUL KEENO
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

IN REPLY REFER TO:
HWY-TO
2.1768

Mr. Kirk S. Tomita
Senior Environmental Scientist
Hawaiian Electric Company, Inc.
P.O. Box 2750
Honolulu, Hawaii 96840-0001

Dear Mr. Tomita:

Subject: Draft Environmental Assessment
Kalaniana'ole Highway Improvements
Vicinity of Hawaii Kai Drive to Keahole Street
Honolulu District, Island of Oahu
TMK (1) 3-9-17:20 and within State ROW

Thank you for your review of the Draft Environmental Assessment for this project and for your letter dated May 26, 2006. As you have suggested, our staff and consultants will coordinate directly with Mr. Colin Chang, System Group Engineer, regarding this project.

Please feel free to call Reid Tokuhara at 692-7691 if you have any comments or questions.

Very truly yours,


BRENNON T. MORIOKA
Deputy Director-Highways

c: KN Consulting Services, Inc.
Kimura International, Inc.
Office of Environmental Quality Control

**ACOUSTIC STUDY FOR THE
KALANIANAOLE HIGHWAY IMPROVEMENTS AT
KEAHOLE STREET AND HAWAII KAI DRIVE
HAWAII KAI, HAWAII**

Prepared for:

KN CONSULTING SERVICES, INC.

Prepared by:

**Y. EBISU & ASSOCIATES
1126 12th Avenue, Room 305
Honolulu, Hawaii 96816**

APRIL 2006

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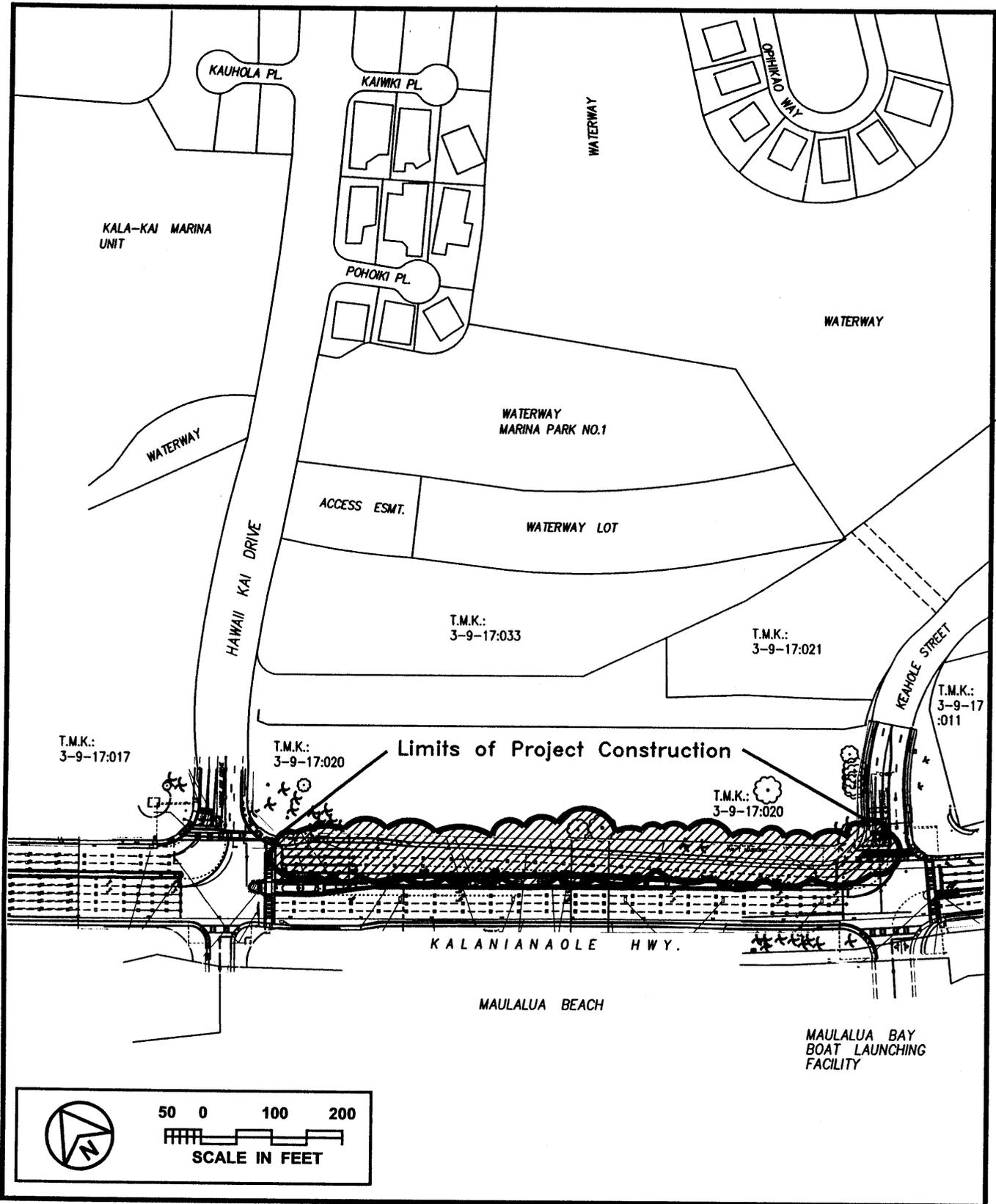
CHAPTER I. SUMMARY

The existing and future traffic noise levels in the environs of the proposed Kalanianaʻole Highway Improvement Project between Hawaii Kai Drive and Keahole Street on the island of Oahu (see Figure 1) were studied to evaluate potential noise impacts associated with the Build Alternative. Noise measurements were obtained, traffic noise predictions developed, and noise abatement alternatives evaluated.

Existing traffic and background ambient noise levels in the project area currently do not exceed the U.S. Federal Highway Administration (FHWA) and Hawaii State Department of Transportation, Highways Division (HDOT) noise abatement criteria at the closest residences to the project area. Future (CY 2026) traffic noise levels are also not expected to exceed the 66 Leq HDOT noise abatement criteria at existing residences north (or mauka) of the highway. No public use facilities are expected to be adversely impacted by future traffic noise levels from the proposed roadway improvements. Existing and future traffic noise levels will continue to exceed the 66 Leq criteria along the boundaries of park lands north (mauka) and south (makai) of the highway, but potential noise impacts on park users are not anticipated. Traffic noise mitigation measures in the form of solid noise barriers may be applied at the affected park lands north and south of the project corridor, but should be examined according to the criteria of reasonable and feasible. Because the construction of sound attenuating walls may not be desired by the community and parks administrators, input from the affected parties should be obtained prior to construction of the noise barriers.

The following general conclusions can be made in respect to the number of impacted structures which can be expected by CY 2026 under the Build Alternative. These conclusions are valid for a future traffic mix of 98.0% automobiles, 1.0% medium trucks, and 1.0% heavy trucks and buses, and average speeds of 34 to 38 miles per hour.

- The HDOT's 66 Leq(h) noise abatement criteria will not be exceeded at the closest existing dwelling units north of the project corridor with or without the project.
- The HDOT's "15 dB increase" noise abatement criteria for significant change in traffic noise levels will not be exceeded at existing residences or at other receptor locations along the project corridor.
- The HDOT's 66 Leq(h) noise abatement criteria will be exceeded along the north and south Rights-of-Way which adjoin existing park lands.
- No public use facility within the limits of project construction should be affected by the proposed project or require noise mitigation measures under the Build Alternative.



LOCATION OF KALANIANA'OLE HIGHWAY IMPROVEMENTS PROJECT AT KEAHOLE STREET

FIGURE 1

- The construction of 5 foot high sound attenuation walls along the north and south Rights-of-Way will be required to meet the HDOT minimum sound attenuation requirement of 5 dB for ground level receptors on the adjacent park lands.
- Potential noise impacts during project construction are possible, so the implementation of construction noise mitigation measures is recommended.

CHAPTER II. GENERAL STUDY METHODOLOGY

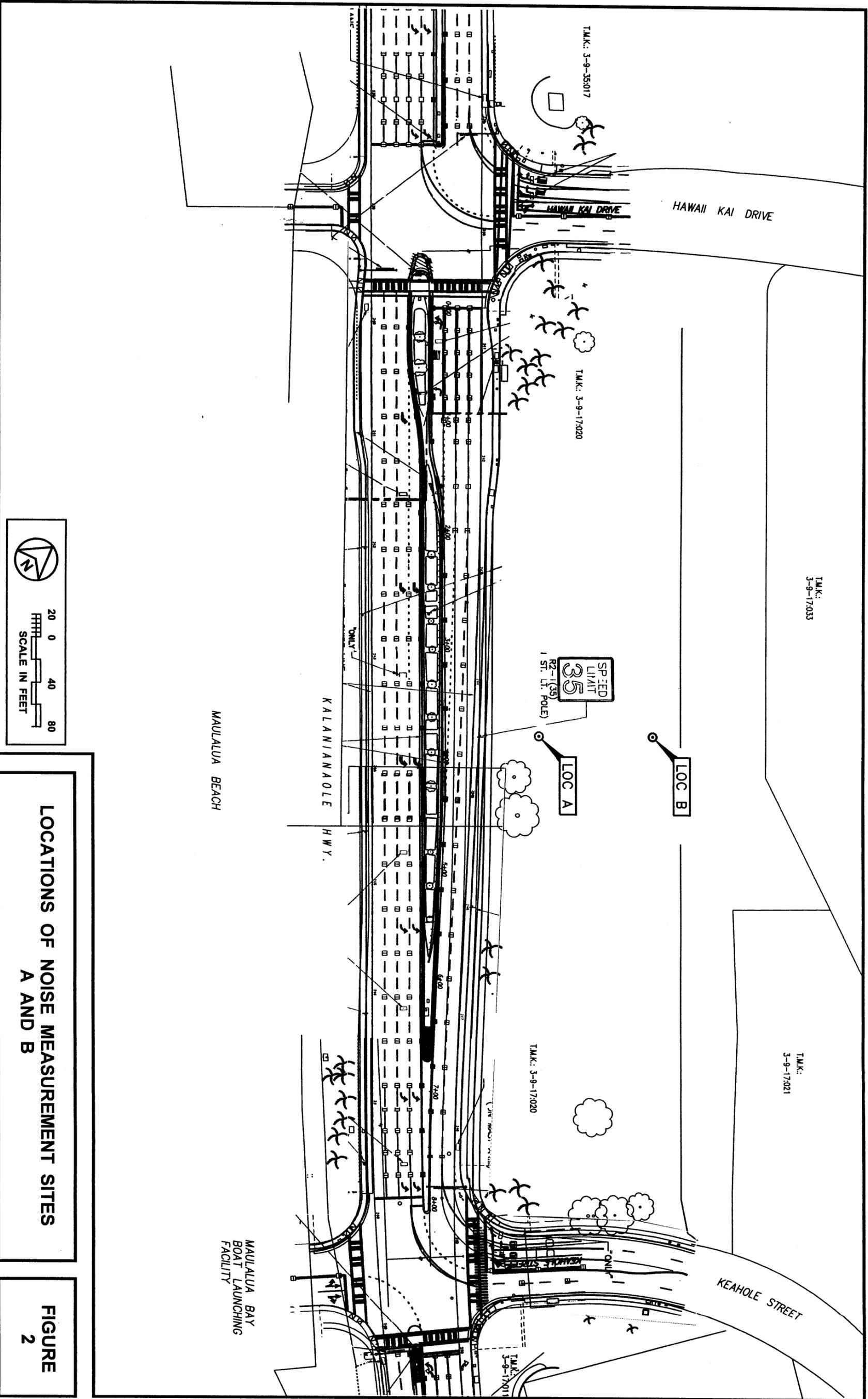
Noise Measurements. Existing am and pm peak hour traffic noise levels were measured at Locations A and B on March 16 and 17, 2006 (see Figure 2). The traffic noise measurements were used to calibrate the traffic noise model which was used to calculate the Base Year (CY 2006) and future (CY 2026) traffic noise levels under the Build Alternative. The traffic noise measurements were also used to estimate existing noise levels at noise sensitive receptors and park lands which may be affected by the project. Also, the measurements were used in conjunction with forecast traffic noise levels to determine if future traffic noise levels are predicted to "substantially exceed" existing background ambient noise levels at these noise sensitive receptors and park lands, and therefore exceed FHWA and HDOT noise standards and criteria.

The results of the traffic noise measurements are summarized in Table 1. In Table 1, Leq represents the average (or equivalent), A-Weighted, Sound Level. A list and description of the acoustical terminology used are contained in Appendix B.

Traffic Noise Predictions. The Federal Highway Administration (FHWA) Traffic Noise Model, Version 2.5 (or TNM, see Reference 1) was used as the primary method of calculating Base Year and future traffic noise levels, with model parameters adjusted to reflect terrain, ground cover, and local shielding conditions. At Locations A and B, the measured traffic noise levels were compared with TNM model predictions to determine if the measured and calculated noise levels for the existing conditions were consistent and in general agreement. As indicated in Table 1, spot counts of traffic volumes were also obtained during the measurement periods and were used to generate the Equivalent Sound Level (Leq) predictions shown in the table. Traffic mix by vehicle types and average vehicle speeds for the various sections of the existing and future roadways were derived from observations during the noise monitoring periods as well as from Reference 2.

Measured traffic noise levels at Locations A and B were determined to be reasonably consistent with those predicted by TNM 2.5 for the traffic volume and speed conditions shown in Table 1. So for this study, TNM 2.5 model predictions for Base Year and future traffic noise levels were performed using average speeds of 34 and 38 miles per hour for the am and pm peak hours, "hard soil" propagation loss factor, and vehicle mix of 98.0% automobiles, 1.0% medium trucks, and 1.0% heavy trucks and buses.

Base Year background ambient noise levels at existing noise sensitive properties and park lands closest to the project roadway section were estimated from the noise measurements shown in Table 1, and from modeling using TNM 2.5. Existing background ambient noise levels at these properties are controlled by traffic along Kalaniana'ole Highway, and Hawaii Kai Drive, and typically exceed 44 dB. Determinations of the period of highest hourly traffic volumes along the project corridor were made after reviewing the am and pm peak hour traffic volumes from References 3 and 4, and from Table 1. Total two-way traffic volumes were generally highest during



LOCATIONS OF NOISE MEASUREMENT SITES
A AND B

FIGURE
2

**TABLE 1
TRAFFIC NOISE MEASUREMENT RESULTS**

<u>LOCATION</u>	<u>Time of Day (HRS)</u>	<u>Ave. Speed (MPH)</u>	<u>Hourly Traffic Volume -----</u>		<u>Measured Leq (dB)</u>	<u>Predicted Leq (dB)</u>
			<u>AUTO</u>	<u>M.TRUCK H.TRUCK</u>		
A 100 FT from Centerline of Kalaniana'ole Highway (3/16/06)	1615					
	TO 1715	34 / 38 *	3,853	11 28	63.3	64.7
B 200 FT from Centerline of Kalaniana'ole Highway (3/16/06)	1615					
	TO 1715	34 / 38 *	3,853	11 28	58.6	58.4
A 100 FT from Centerline of Kalaniana'ole Highway (3/17/06)	0630					
	TO 0730	38	2,880	20 24	65.4	65.4
B 200 FT from Centerline of Kalaniana'ole Highway (3/17/06)	0630					
	TO 0730	38	2,880	20 24	58.8	58.4

* 34 miles per hour in westbound direction, and 38 miles per hour in eastbound direction.

the pm peak hour. Predictions of existing traffic noise levels on the mauka side of Kalanianaʻole Highway were based on an am peak hour volume of 3,231 vehicles per hour (from Reference 4) and an average speed of 38 miles per hour (from model calibration results). Predictions of existing traffic noise levels on the makai side of Kalanianaʻole Highway were based on a pm peak hour volume of 3,976 vehicles per hour (from Reference 4) and an average speed of 38 miles per hour eastbound and 34 miles per hour westbound (from model calibration results).

The Equivalent (or Average) Hourly Sound Level [Leq(h)] noise descriptor was used to calculate the Base Year and CY 2026 traffic noise levels as required by Reference 5. The project plans (where available) of the area, topographic maps, and visual survey of the area were used to determine terrain and local shielding effects and distances from building structures, which were entered into the noise prediction model.

Traffic noise levels are highest on the mauka side of Kalanianaʻole Highway during the am peak hour, and traffic noise levels are highest on the makai side of Kalanianaʻole Highway during the pm peak hour. Future year (2026) traffic noise levels on the mauka side of Kalanianaʻole Highway were developed for the Build (roadway improvement) Alternative using the future am peak hourly volume of 3,744 vehicles per hour (from Reference 4) and average speed of 38 miles per hour. Future year (2026) traffic noise levels on the makai side of Kalanianaʻole Highway were also developed for the Build (roadway improvement) Alternative using the future pm peak hourly volume of 4,608 vehicles per hour (from Reference 4) and average speed of 38 miles per hour eastbound and 34 miles per hour westbound. A future traffic mix of 98.0% automobiles, 1.0% medium trucks, and 1.0% heavy trucks and buses was used to calculate future traffic noise along the project corridor.

Impact Assessments and Mitigation. Following the calculation of the future traffic noise levels, evaluations were made of the future traffic noise levels and impacts at noise sensitive receptor and park land locations along the project corridor and within the limits of project construction. Comparisons of predicted future traffic noise levels with FHWA and HDOT noise abatement criteria (see Table 2) were made to determine specific locations where the noise abatement criteria are expected to be exceeded.

The HDOT 66 Leq(h) noise abatement threshold criteria and the HDOT "15 dB increase" criteria were applied to all noise sensitive buildings and park lands along the project corridor. By Reference 6, the HDOT has replaced the FHWA 67 Leq(h) criteria with their 66 Leq(h) criteria. Along the project corridor, the locations of the 66 Leq(h) traffic noise contour, without the benefit of shielding from natural terrain or man-made sound barriers, were also used to identify noise sensitive receptor locations where the HDOT's 66 Leq(h) noise abatement criteria would not be exceeded, and which would not require more detailed evaluations. In addition, the HDOT's criteria of "15 dB increase or more above existing background noise levels" was also used as a noise abatement criteria for this project (from Reference 6). Where noise mitigation measures were indicated for this project, the effectiveness of sound attenuating barriers and other possible noise mitigation measures were evaluated. The ability to meet the HDOT

TABLE 2

**FHWA & HDOT NOISE ABATEMENT CRITERIA
[Hourly A-Weighted Sound Level--Decibels (dBA)]**

<u>ACTIVITY CATEGORY</u>	<u>LEQ (h)*</u>	<u>DESCRIPTION OF ACTIVITY CATEGORY</u>
A	57 (Exterior)	Lands on which serenity and quiet are of extra-ordinary significance and serve an important public need and where the preservation of those qualities is essential if the areas are to continue to serve their intended purpose.
B	67 (Exterior)	Picnic areas, recreation areas, playgrounds, activity sports areas, parks, residences, motels, hotels, churches, libraries, and hospitals.
C	72 (Exterior)	Developed lands, properties, or activities not included in Categories A or B above.
D	-----	Undeveloped lands.
E	52 (Interior)	Residences, motels, hotels, public meeting rooms, schools, churches, libraries, hospitals, and auditoriums.

* The Hawaii State Department of Transportation, Highways Division, utilizes Leq criteria levels which are 1 Leq unit less than the FHWA values shown.

criteria of 5 dBA noise reduction was also examined for various noise barrier heights. Based on these results, traffic noise mitigation measures were developed.

III. EXISTING ACOUSTICAL ENVIRONMENT

For the purposes of this study, 2006 was used as the Base Year for calculating changes in traffic and background ambient noise levels between the Base Year and 2026 under the Build Alternative. The Base Year noise environment along the project corridor was described by estimating the existing Hourly Equivalent Sound Levels [Leq(h)] at receptor locations on the mauka and makai sides of Kalaniana'ole Highway during the am and pm peak hours. Traffic noise levels were highest on the mauka side of Kalaniana'ole Highway during the am peak hour, and traffic noise levels were highest on the makai side of Kalaniana'ole Highway during the pm peak hour. The hourly sound levels, expressed in decibels, represent the average levels of background ambient or traffic noise during the study's Base Year. Table 1 contains the traffic noise levels measured at Locations A and B during the am and pm peak hours during March 2006. These measurements were used to calibrate the traffic noise model, which was used to calculate Base Year traffic noise levels at the various receptor locations along the project corridor.

Table 3 presents the Base Year traffic and background ambient noise levels at the various receptor locations along the north (mauka) and south (makai) sides of the project corridor. The receptor locations listed in Table 3 are shown in Figure 3. The relationships of the closest residential receptor locations to the project corridor are also shown in Figure 3. Because their existing setback distances from the project corridor are relatively large, existing traffic noise levels at these closest residences do not exceed the HDOT noise abatement criteria level of 66 Leq.

Existing traffic noise levels exceed 66 Leq at mauka locations within 102 feet of the highway centerline, and exceed 66 Leq at makai locations within 113 feet of the highway centerline. At the closest residential receptors (Receivers E and F in Figure 3), existing traffic noise levels from Kalaniana'ole Highway range from 44 to 48 Leq(h) during the am peak hour.

Park lands are located long the north (mauka) and south (makai) sides of the project corridor. The park lands on the north side are similar to "village greens", and function as open space rather than playground or picnicking areas. The park lands on the south side are used for water recreation activities and picnicking. However, the park lands closest to the highway where the 66 Leq criteria is exceeded are also similar to "village greens" and function as open space and parking lots rather than playground and picnicking areas.

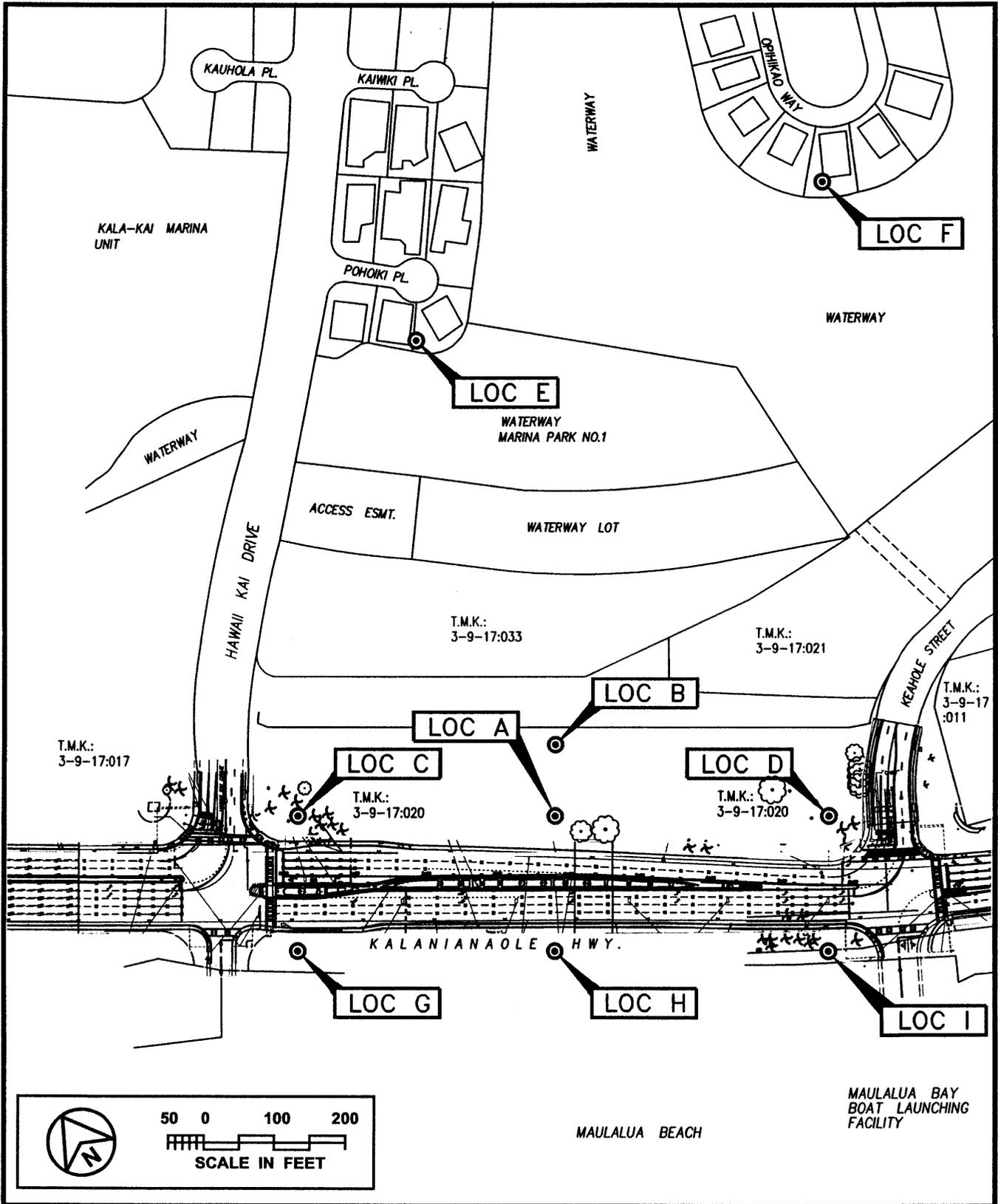
TABLE 3

**EXISTING AND FUTURE TRAFFIC NOISE LEVELS
(4.92 FT RECEPTOR, AM OR PM PEAK HOUR)**

<u>RECEPTOR LOCATION</u>	<u>EXISTING (CY 2006) Leq</u>		<u>--- FUTURE (CY 2026) Leq ---</u>			
			<u>NO BUILD / CHANGE</u>		<u>BUILD / CHANGE</u>	
<u>MAUKA SIDE OF HIGHWAY (AM)</u>						
Receiver A	66.2	*	66.9 / 0.7	*	67.6 / 1.4	*
Receiver B	59.8		60.4 / 0.6		61.4 / 1.6	
Receiver C	67.3	*	67.9 / 0.6	*	67.9 / 0.6	*
Receiver D	64.9		65.6 / 0.7		66.3 / 1.4	*
Receiver E	47.5		48.1 / 0.6		48.3 / 0.8	
Receiver F	44.2		44.9 / 0.7		45.0 / 0.8	
<u>MAKAI SIDE OF HIGHWAY (PM)</u>						
Receiver G	68.7	*	69.3 / 0.6	*	69.3 / 0.6	*
Receiver H	68.3	*	68.9 / 0.6	*	69.0 / 0.7	*
Receiver I	67.5	*	68.2 / 0.7	*	68.2 / 0.7	*

Notes:

1. All receivers were assumed to be at 4.92 feet above ground level.
2. * Denotes exceedance of HDOT "66 Leq" criteria for Activity Category B.



LOCATIONS OF RECEPTORS NORTH AND SOUTH OF KALANIANAOLE HIGHWAY

FIGURE 3

CHAPTER IV. DESCRIPTION OF FUTURE TRAFFIC NOISE LEVELS

The traffic noise levels along the Kalanianaʻole Highway corridor between Keahole Street and Hawaii Kai Drive during CY 2026 were evaluated for the No Build and Build Alternatives. The same methodology that was used to validate the measured Base Year traffic noise levels in Table 1 was also used to calculate the Year 2026 noise levels under the No Build and Build Alternatives. Predictions of future traffic noise levels were based on hourly volumes of 3,744 and 4,608 vehicles per hour (from Reference 4) during the am and pm peak hours, respectively. Future year (2026) traffic noise levels on the mauka side of Kalanianaʻole Highway were developed for the am peak hourly volume of 3,744 vehicles per hour and average speed of 38 miles per hour. Future year (2026) traffic noise levels on the makai side of Kalanianaʻole Highway were developed for the pm peak hourly volume of 4,608 vehicles per hour and average speed of 38 miles per hour eastbound and 34 miles per hour westbound. A future traffic mix of 98.0% automobiles, 1.0% medium trucks, and 1.0% heavy trucks and buses was used to calculate future traffic noise along the project corridor.

The predicted traffic noise levels at receptor locations along the project corridor are shown in Table 3 for the No Build and Build Alternatives. Also indicated in Table 3 are the relatively small increases in existing noise levels predicted under the Build Alternative. The various receptor locations along the project corridor where future traffic noise levels are predicted to exceed 66 Leq(h) are indicated by the asterisks in Table 3. The HDOT 66 Leq(h) noise abatement criteria for Activity Category B will be exceeded at all park lands fronting Kalanianaʻole Highway within 120 feet mauka of the highway centerline and within 122 feet makai of the highway centerline. Existing background ambient noise levels will not be exceeded by at least 15 dB in CY 2026 under the Build Alternative.

On the north (mauka) side of the highway, future traffic noise levels are expected to increase by relatively small values less than 1.6 dB. Along the south (makai) side of the highway, future traffic noise levels are also predicted to increase by even smaller values of less than 0.7 dB.

The following general conclusions can be made in respect to the impacted structures and lands which can be expected by CY 2026 under the Build Alternative. These conclusions are valid as long as the future vehicle mixes and average speeds do not differ from the assumed values.

- Under the Build Alternative, the HDOT's 66 Leq(h) criteria is predicted to be exceeded at existing park lands located north (mauka) and south (makai) of the highway. All of the existing residences closest to the highway and project corridor will not be exposed to Kalanianaʻole Highway traffic noise levels above the 66 Leq(h) noise abatement criteria.

- The "15 dB increase" criteria for substantial change in traffic noise levels will not be exceeded along the north or south Right-of-Way, or at noise sensitive receptor locations or park lands within the limits of construction.
- While the HDOT's 66 Leq(h) criteria will be continue to be exceeded along the north (mauka) and south (makai) Rights-of-Way which adjoin existing park lands, the affected park lands are not normally occupied and function primarily as open space.
- Existing public use facilities or commercial buildings within the limits of project construction should not be affected by project related traffic noise.

CHAPTER V. POSSIBLE NOISE MITIGATION MEASURES

Possible noise mitigation measures considered included the following:

- A. Restricting the Growth In the Number of Noisy Buses, Heavy Trucks, Motorcycles, and Automobiles with Defective Mufflers. The percentage contribution to the total traffic noise by heavy trucks, buses, and noisy vehicles is currently less than 32 percent, and elimination of these noise sources would reduce total traffic noise levels by less than 2 Leq(h) units. Restricting the growth rate of these vehicles (to growth rates below passenger automobile growth rates) could produce noise reductions in the order of 0 to 1 dB, which are not considered significant for the level of regulatory efforts required.
- B. Alteration of the Horizontal Or Vertical Alignment of the Roadway. This project involves the proposed improvements to the existing Kalanianaʻole Highway in order to add a right hand turning lane from Keahole Street onto the highway. The widening of the highway required to accommodate the additional turning lane will occur primarily toward the north Right-of-Way. Alteration of the horizontal alignment of the highway would not reduce the amount of park lands affected by the 66 Leq noise contours since park lands are located along both the north and south Rights-of-Way. Alteration of the vertical alignment of the highway would not be reasonable or feasible since both the Keahole Street and Hawaii Kai Drive ends of the project are at ground level.
- C. Acquisition of Property Rights for Construction of Noise Barriers, and/or Construction of Noise Barriers Along the Right-of-Way. For ground level receptors, construction of a sound attenuating wall is a possible noise mitigation measure. The 5 to 6 dB of noise attenuation achievable with a 5 FT high wall is normally sufficient for ground level receptors. For this project, the effectiveness of sound attenuating walls along the north and south Rights-of-Way were investigated to determine if their construction would be reasonable and feasible as defined by the current HDOT noise abatement policy (Reference 6).
- D. Acquisition of Real Property Interests To Serve As A Noise Buffer Zone. Where tall (or multistory) structures are expected to be impacted by future traffic noise, the use of sound attenuating barriers (see para. C above) will not be practical due to the excessive heights required to shield the upper levels from traffic noise. In these situations, the only other noise mitigation possibilities are sound insulation of the affected upper level units or acquisition of the property interests. Noise buffer zones extending approximately 122 feet from the center of Kalanianaʻole Highway and at substantial cost would be required to meet the HDOT 66 Leq criteria in CY 2026. These buffer zones would encompass existing park lands north and south of the highway, which already function as noise buffer zones to the existing residences to the north, and to the existing water recreation areas to the south.

- E. Noise Insulation of Public Use or Nonprofit Institutional Structures. There are no public use or nonprofit institutional structures along the project corridor and within the limits of project construction which require sound attenuation treatments.

CHAPTER VI. FUTURE TRAFFIC NOISE IMPACTS AND POSSIBLE NOISE MITIGATION MEASURES

Future traffic noise levels are predicted to exceed the HDOT "66 Leq(h)" but not the "15 dB increase" noise abatement criteria by CY 2026 under the Build Alternative at park lands along the north and south Rights-of-Way which are within the limits of construction for this project. An evaluation of the effectiveness of sound attenuation walls was performed in order to determine if the construction and additional cost of the sound attenuation walls would be a reasonable and feasible traffic noise mitigation measure for this project. At least 5 dB of sound attenuation must result at the affected ground receptors from the construction of the wall in order to meet HDOT criteria for acceptable noise mitigation by Reference 6. The locations of the sound attenuation walls which were evaluated are shown in Figure 4.

Table 4 presents the results of the calculated performances of sound walls of various heights at the affected receptor locations shown in Figure 3 for ground level receptors. The height of the walls which are required to comply with the minimum 5 dB noise attenuation criteria of HDOT for ground level receptors are indicated in Table 4 as being 5 feet for the park lands north and south of the highway. Because accurate topographic maps were not available on the south side of the highway, the heights of the sound attenuating walls are best estimates based on the topographic information available. Prior to actual design and construction of the walls, new topographic surveys along the south Right-of-Way will be required to refine the wall elevations shown in Figure 4.

The top elevations of the sound attenuating walls which are required to meet the minimum 5 dB attenuation criteria are shown in Figure 4. It should be noted that the wall height requirements shown in Figure 4 are the best estimates based on the available topographic maps. The sound attenuating walls must be continuous without see-through openings, and may be constructed from solid materials which have a minimum surface weight of 5 pounds per square foot. Use of landscaping on the roadway side of the wall is also recommended to soften the visual impacts of the walls and to minimize the potential for graffiti. By the existing HDOT policy (Reference 6), if the cost of a sound attenuating wall does not exceed \$35,000 per benefited residence, construction of the walls can be considered to be reasonable and feasible. However, existing HDOT policy is silent on the allowable costs of sound attenuating walls for park lands. Therefore, negotiations with the land owners on the north and south sides of the highway will be required to determine if a sound attenuating wall is desired, and if the costs are considered to be reasonable and feasible for this project. In situations such as this, the negative aspects of a sound attenuating wall, such as the blocking of visual lines-of-sight to the park lands and potential for graffiti with the added maintenance costs, should be considered. Because relatively few people typically occupy the park lands where the 66 Leq(h) is exceeded, the potential noise reduction benefits from the sound attenuating walls may be outweighed by the negative aspects of the walls.

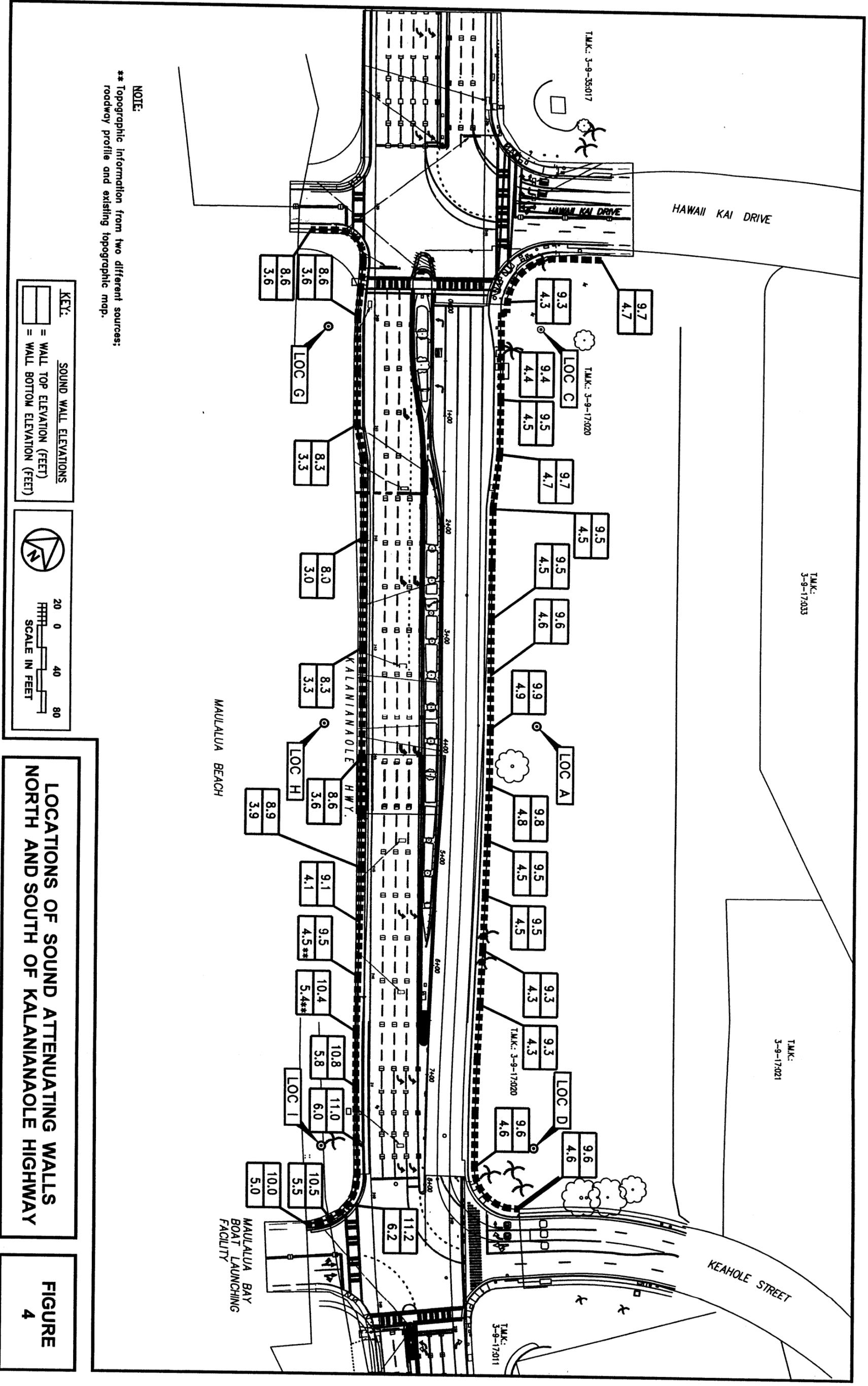


TABLE 4
PREDICTED TRAFFIC NOISE ATTENUATION VS. BARRIER HEIGHTS
(4.92 FT HIGH RECEPTOR)

RECEPTOR LOCATION	EXISTING (CY 2006) Leq	FUTURE NOISE LEVELS (CY 2026) Leq				POTEN. WALL/ (CHANGE)
		W/O BAR./ (CHANGE)	6.0 FT WALL/ (CHANGE)	5.0 FT WALL/ (CHANGE)	4.0 FT WALL/ (CHANGE)	
<u>MAUKA SIDE OF HIGHWAY (AM)</u>						
Receiver A	66.2 *	67.6 / 1.4 *	60.9 / -5.3	61.6 / -4.6	63.3 / -2.9 **	61.6 / -4.6
Receiver B	59.8	61.4 / 1.6	N/A	N/A	N/A	N/A
Receiver C	67.3 *	67.9 / 0.6 *	61.4 / -5.9	62.3 / -5.0	64.1 / -3.2 **	62.3 / -5.0
Receiver D	64.9	66.3 / 1.4 *	60.0 / -4.9	60.6 / -4.3	62.3 / -2.6 **	60.6 / -4.3
Receiver E	47.5	48.3 / 0.8	N/A	N/A	N/A	N/A
Receiver F	44.2	45.0 / 0.8	N/A	N/A	N/A	N/A
<u>MAKAI SIDE OF HIGHWAY (PM)</u>						
Receiver G	68.7 *	69.3 / 0.6 *	62.7 / -6.0	64.2 / -4.5	65.8 / -2.9 **	64.2 / -4.5
Receiver H	68.3 *	69.0 / 0.7 *	62.1 / -6.2	63.3 / -5.0	64.6 / -3.7 **	63.3 / -5.0
Receiver I	67.5 *	68.2 / 0.7 *	61.0 / -6.5	61.9 / -5.6	63.6 / -3.9 **	61.9 / -5.6

Notes:

1. Right-of-Way (R/W) wall locations as shown in Figure 4.
2. * Denotes exceedance of State DOT "66 Leq" Criteria for Activity Category B.
3. ** Denotes need for additional barrier height to meet State DOT "5 dBA Minimum Attenuation" Criteria.

It is anticipated that potential noise impacts at any future noise sensitive properties located in the project area may be mitigated through the inclusion of sound walls or other noise mitigation measures within the individual lot development plans. In addition, any future public use facilities or housing units which may be planned alongside the section of Kalanianaʻole Highway between Hawaii Kai Drive and Keahole Street represent areas of potential adverse noise impacts if adequate noise mitigation measures are not incorporated into the planning of these future projects. It is anticipated that the project's roadway improvements will be completed prior to any redevelopment of the presently open areas adjacent to the roadway, and that noise abatement measures such as adequate setbacks, sound attenuating walls or berms, or closure and air conditioning will be incorporated into these new developments along Kalanianaʻole Highway as required. In any event, new structures whose building permits were obtained after the date of this noise study will not qualify for noise abatement measures under existing HDOT procedures.

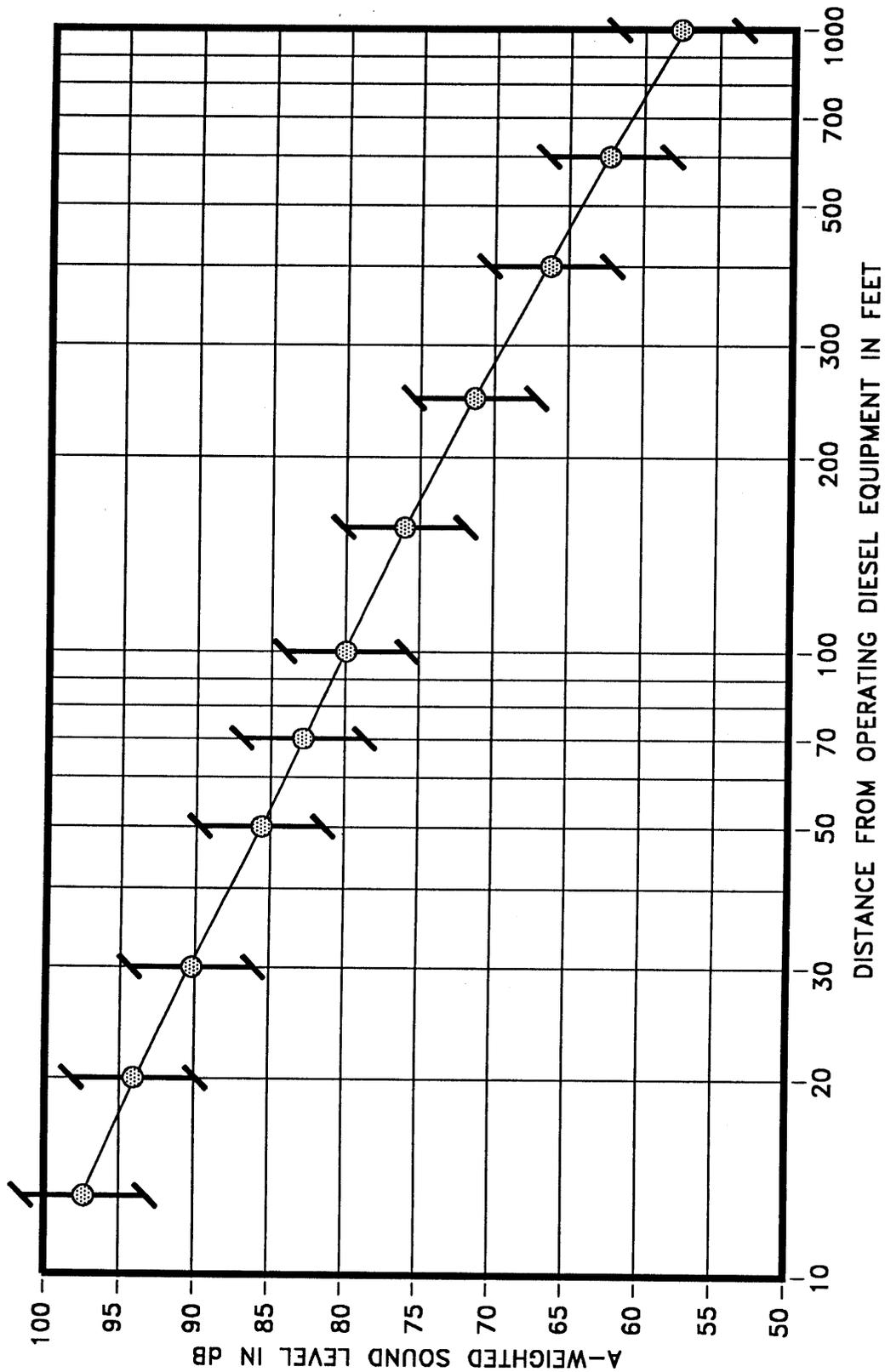
CHAPTER VII. CONSTRUCTION NOISE IMPACTS

Short-term noise impacts associated with construction activities along portions of the proposed Kalaniana'ole Highway improvement project may occur, but are not expected to be severe. Existing buffer distances between the construction corridor and noise sensitive residences are relatively large, so risks of adverse noise impacts during construction are considered to be low. Noise impacts (in the form of speech interference) can occur when individuals are at short distances (less than 100 FT) to the construction work. The total duration of the construction period for the proposed project is not known, but noise exposure from construction activities at any one receptor location is not expected to be continuous during the total construction period.

Noise levels of diesel powered construction equipment typically range from 80 to 90 dB at 50 FT distance. Typical levels of noise from construction activities (excluding pile driving activities) are shown in Figure 5. Adverse impacts from construction noise are not expected to be in the "public health and welfare" category due to the temporary nature of the work and due to the administrative controls available for its regulation. Instead, these impacts will probably be limited to the temporary degradation of the quality of the acoustic environment in the immediate vicinity of the project site.

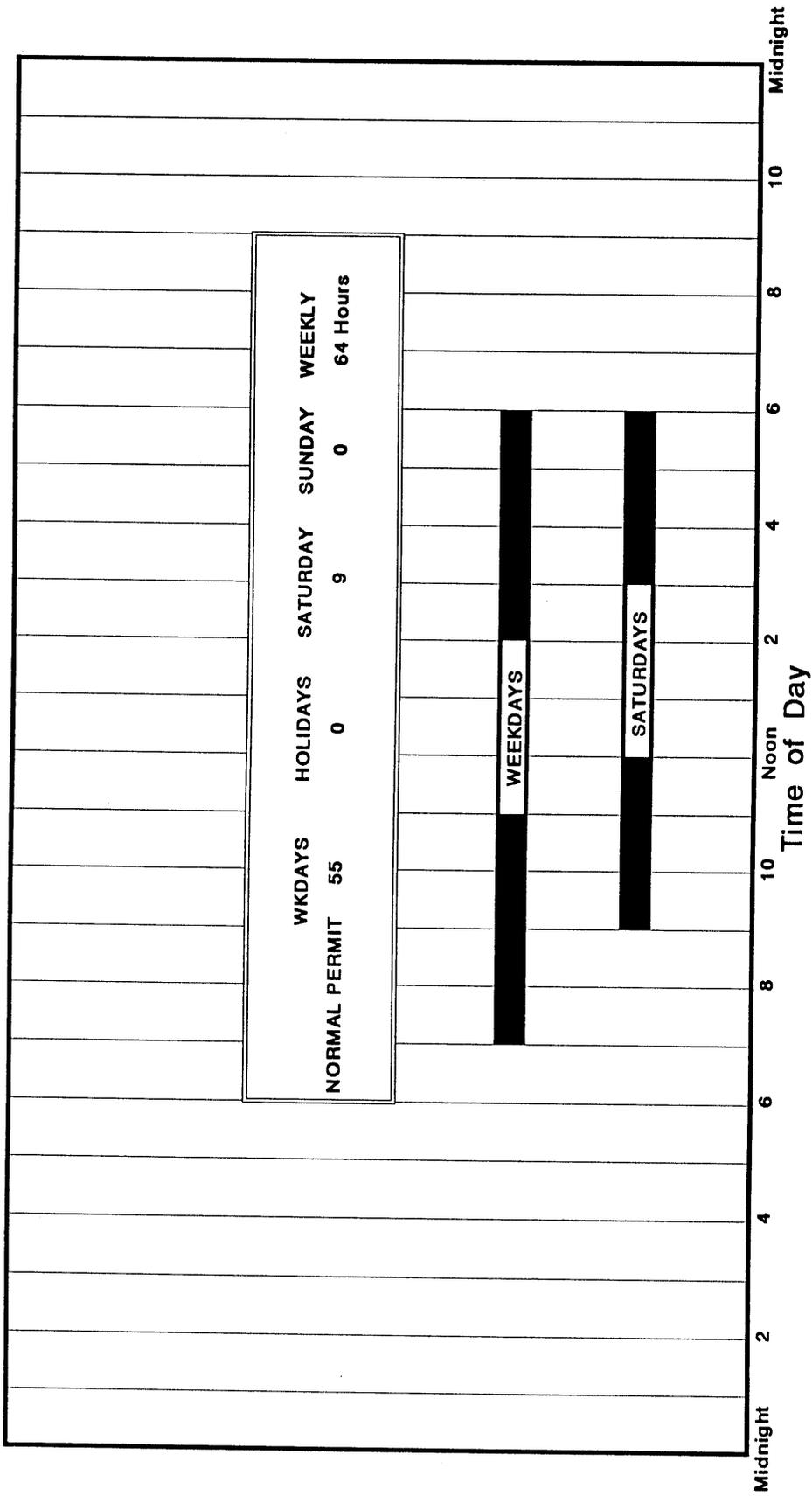
The State Department of Health currently regulates noise from construction activities under a permit system (Reference 7). Under current permit procedures (see Figure 6), noisy construction activities are restricted to hours between 7:00 AM and 6:00 PM, from Monday through Friday, and exclude certain holidays. Noisy construction activities are normally restricted to the hours of 9:00 AM to 6:00 PM on Saturdays, with construction not permitted on Sundays. These restrictions would minimize construction noise impacts on noise sensitive residences along the roadway project corridor, and have generally been successfully applied. In this way, construction noise impacts on noise sensitive residences can be minimized. However, because the construction of the highway improvement project will affect traffic during the normal working hours, construction during the evening and nighttime hours would minimize traffic congestion. Construction activities during the evening and nighttime hours are possible but require the issuance of noise variances by the State Department of Health.

In addition, the use of quieted portable engine generators and diesel equipment should be specified for use on this project. Heavy truck and equipment staging areas should also be located at areas which are as far from noise sensitive properties as feasible. Truck routes which avoid residential communities should be identified wherever possible. The use of 8 to 12 FT high construction noise barriers may also be used where close-in construction work to noise sensitive structures is unavoidable.



ANTICIPATED RANGE OF CONSTRUCTION NOISE LEVELS VS. DISTANCE

FIGURE 5



AVAILABLE WORK HOURS UNDER DOH PERMIT PROCEDURES FOR CONSTRUCTION NOISE

FIGURE 6

APPENDIX A. REFERENCES

- (1) "FHWA Highway Traffic Noise Model User's Guide;" FHWA-PD-96-009, Federal Highway Administration; Washington, D.C.; January 1998 and Version 2.5 Upgrade (April 14, Hearing Conservation Program).
- (2) Vehicle Type Classification Counts, Station 43-K, Kalaniana'ole Highway at Hawaii Kai Drive; October 27-28, 2003.
- (3) 24-Hour Traffic Counts, Station 43-K, Kalaniana'ole Highway at Hawaii Kai Drive; October 27-28, 2003.
- (4) Memorandum from DOT HWY-PH to DOT HWY-TO regarding 2006 and 2026 traffic volumes for Project No. NH-072-1(52); March 20, 2006.
- (5) Federal Highway Administration; "Procedures for Abatement of Highway Traffic Noise and Construction Noise;" 23 CFR Chapter I, Subchapter H, Part 772;" April 1, 1995.
- (6) "Noise Analysis and Abatement Policy;" Hawaii State Department of Transportation, Highways Division, Materials Testing and Research Branch; June 1997.
- (7) "Title 11, Administrative Rules, Chapter 46, Community Noise Control;" Hawaii State Department of Health; September 23, 1996.

APPENDIX B

EXCERPTS FROM EPA'S ACOUSTIC TERMINOLOGY GUIDE

Descriptor Symbol Usage

The recommended symbols for the commonly used acoustic descriptors based on A-weighting are contained in Table I. As most acoustic criteria and standards used by EPA are derived from the A-weighted sound level, almost all descriptor symbol usage guidance is contained in Table I.

Since acoustic nomenclature includes weighting networks other than "A" and measurements other than pressure, an expansion of Table I was developed (Table II). The group adopted the ANSI descriptor-symbol scheme which is structured into three stages. The first stage indicates that the descriptor is a level (i.e., based upon the logarithm of a ratio), the second stage indicates the type of quantity (power, pressure, or sound exposure), and the third stage indicates the weighting network (A, B, C, D, E.....). If no weighting network is specified, "A" weighting is understood. Exceptions are the A-weighted sound level and the A-weighted peak sound level which require that the "A" be specified. For convenience in those situations in which an A-weighted descriptor is being compared to that of another weighting, the alternative column in Table II permits the inclusion of the "A". For example, a report on blast noise might wish to contrast the LCdn with the LAdn.

Although not included in the tables, it is also recommended that "Lpn" and "LepN" be used as symbols for perceived noise levels and effective perceived noise levels, respectively.

It is recommended that in their initial use within a report, such terms be written in full, rather than abbreviated. An example of preferred usage is as follows:

The A-weighted sound level (LA) was measured before and after the installation of acoustical treatment. The measured LA values were 85 and 75 dB respectively.

Descriptor Nomenclature

With regard to energy averaging over time, the term "average" should be discouraged in favor of the term "equivalent". Hence, Leq, is designated the "equivalent sound level". For Ld, Ln, and Ldn, "equivalent" need not be stated since the concept of day, night, or day-night averaging is by definition understood. Therefore, the designations are "day sound level", "night sound level", and "day-night sound level", respectively.

The peak sound level is the logarithmic ratio of peak sound pressure to a reference pressure and not the maximum root mean square pressure. While the latter is the maximum sound pressure level, it is often incorrectly labelled peak. In that sound level meters have "peak" settings, this distinction is most important.

"Background ambient" should be used in lieu of "background", "ambient", "residual", or "indigenous" to describe the level characteristics of the general background noise due to the contribution of many unidentifiable noise sources near and far.

With regard to units, it is recommended that the unit decibel (abbreviated dB) be used without modification. Hence, DBA, PNdB, and EPNdB are not to be used. Examples of this preferred usage are: the Perceived Noise Level (Lpn was found to be 75 dB. Lpn = 75 dB). This decision was based upon the recommendation of the National Bureau of Standards, and the policies of ANSI and the Acoustical Society of America, all of which disallow any modification of bel except for prefixes indicating its multiples or submultiples (e.g., deci).

Noise Impact

In discussing noise impact, it is recommended that "Level Weighted Population" (LWP) replace "Equivalent Noise Impact" (ENI). The term "Relative Change of Impact" (RCI) shall be used for comparing the relative differences in LWP between two alternatives.

Further, when appropriate, "Noise Impact Index" (NII) and "Population Weighed Loss of Hearing" (PHL) shall be used consistent with CHABA Working Group 69 Report Guidelines for Preparing Environmental Impact Statements (1977).

APPENDIX B (CONTINUED)

TABLE I
A-WEIGHTED RECOMMENDED DESCRIPTOR LIST

<u>TERM</u>	<u>SYMBOL</u>
1. A-Weighted Sound Level	L_A
2. A-Weighted Sound Power Level	L_{WA}
3. Maximum A-Weighted Sound Level	L_{max}
4. Peak A-Weighted Sound Level	L_{Apk}
5. Level Exceeded x% of the Time	L_x
6. Equivalent Sound Level	L_{eq}
7. Equivalent Sound Level over Time (T) ⁽¹⁾	$L_{eq}(T)$
8. Day Sound Level	L_d
9. Night Sound Level	L_n
10. Day-Night Sound Level	L_{dn}
11. Yearly Day-Night Sound Level	$L_{dn}(Y)$
12. Sound Exposure Level	L_{SE}

(1) Unless otherwise specified, time is in hours (e.g. the hourly equivalent level is $L_{eq}(1)$). Time may be specified in non-quantitative terms (e.g., could be specified a $L_{eq}(WASH)$ to mean the washing cycle noise for a washing machine).

SOURCE: EPA ACOUSTIC TERMINOLOGY GUIDE, BNA 8-14-78,

APPENDIX B (CONTINUED)

TABLE II RECOMMENDED DESCRIPTOR LIST

<u>TERM</u>	<u>A-WEIGHTING</u>	<u>ALTERNATIVE⁽¹⁾ A-WEIGHTING</u>	<u>OTHER⁽²⁾ WEIGHTING</u>	<u>UNWEIGHTED</u>
1. Sound (Pressure) ⁽³⁾ Level	L_A	L_{pA}	L_B, L_{pB}	L_p
2. Sound Power Level	L_{WA}		L_{WB}	L_W
3. Max. Sound Level	L_{max}	L_{Amax}	L_{Bmax}	L_{pmax}
4. Peak Sound (Pressure) Level	L_{Apk}		L_{Bpk}	L_{pk}
5. Level Exceeded x% of the Time	L_x	L_{Ax}	L_{Bx}	L_{px}
6. Equivalent Sound Level	L_{eq}	L_{Aeq}	L_{Beq}	L_{peq}
7. Equivalent Sound Level ⁽⁴⁾ Over Time(T)	$L_{eq(T)}$	$L_{Aeq(T)}$	$L_{Beq(T)}$	$L_{peq(T)}$
8. Day Sound Level	L_d	L_{Ad}	L_{Bd}	L_{pd}
9. Night Sound Level	L_n	L_{An}	L_{Bn}	L_{pn}
10. Day-Night Sound Level	L_{dn}	L_{Adn}	L_{Bdn}	L_{pdn}
11. Yearly Day-Night Sound Level	$L_{dn(Y)}$	$L_{Adn(Y)}$	$L_{Bdn(Y)}$	$L_{pdn(Y)}$
12. Sound Exposure Level	L_S	L_{SA}	L_{SB}	L_{Sp}
13. Energy Average Value Over (Non-Time Domain) Set of Observations	$L_{eq(e)}$	$L_{Aeq(e)}$	$L_{Beq(e)}$	$L_{peq(e)}$
14. Level Exceeded x% of the Total Set of (Non-Time Domain) Observations	$L_{x(e)}$	$L_{Ax(e)}$	$L_{Bx(e)}$	$L_{px(e)}$
15. Average L_x Value	L_x	L_{Ax}	L_{Bx}	L_{px}

(1) "Alternative" symbols may be used to assure clarity or consistency.

(2) Only B-weighting shown. Applies also to C,D,E,.....weighting.

(3) The term "pressure" is used only for the unweighted level.

(4) Unless otherwise specified, time is in hours (e.g., the hourly equivalent level is $L_{eq(1)}$). Time may be specified in non-quantitative terms (e.g., could be specified as $L_{eq(WASH)}$ to mean the washing cycle noise for a washing machine.

Morden & Associates

Botanical and Environmental Consultants

94-333 Alula Pl.
Mililani, HI 96789
(808) 292-1369

12 July 2005

Glenn Kimura
Kimura International, Inc.
1600 Kapiolani Blvd. Suite 1610
Honolulu, Hawaii 96814

Dear Mr. Kimura,

The property on the mauka side of Kalanianaʻole Highway between Keahole Drive and Hawaii Kai Drive was surveyed for the presence of threatened and endangered plant species. A corridor adjacent to the highway of approximately 15 feet from the road was examined. The results of the survey indicate that there are no native plants found in this corridor.

A brief description of the site follows. Adjacent to the sidewalk is property that is largely covered with Bermuda grass (*Cynodon dactylon*) and is mowed regularly. Scattered throughout are a few trees, mostly coconut trees (*Cocos nucifera*) and a couple fig trees (*Ficus microcarpa*). Mixed with the Bermuda grass are an assortment of other “weedy” species of grass, herbs and shrubs. The shrub (Indian fleabane – *Pluchea indica*) is mowed regularly along with the grass so that its presence at the site is not obvious. Other grasses include swollen fingergrass (*Chloris barbata*) and fuzzytop (*Bothriochloa barbinodis*). Common herbs include *Boerhavia coccinea*, coat buttons (*Tridax procumbens*), *Ipomoea obscura*, cheeseweed (*Malva parviflora*), and *Heliotropium procumbens*.

The trees found at the site are close to the corridor, but are not in it. However, they may be impacted by construction during the proposed expansion of the highway. The palm trees are small and may possibly be moved if necessary.

Sincerely,

Clifford W. Morden
Botanist

**A Survey of Avian and Terrestrial Mammalian
Species for the Kalaniane‘ole Highway Widening,
from Keāhole Drive to Hawai‘i Kai Drive Project,
Honolulu District, O‘ahu, Hawai‘i.**

Prepared for:

Kimura International
1600 Kapiolani Blvd. Suite 1610
Honolulu, Hawaii 96814

Prepared by:

Reginald E. David
Rana Productions, Ltd.
P.O. Box 1371
Kailua-Kona, Hawai‘i 96745

August 2005

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Introduction:

This report summarizes the findings of a faunal survey of an approximately 1000-foot long, by 50-foot wide portion of the upslope (*mauka*) shoulder of Kalanianeʻole Highway located between Keāhole Drive and Hawaiʻi Kai Drive, in Hawaiʻi Kai, Island of Oʻahu (Figure 1). The State of Hawaiʻi, Department of Transportation, Highways Division (HDOT) is proposing to widen the existing highway with one additional 12-foot travel lane and a 6-foot paved shoulder on the *mauka* (Honolulu bound) side of the highway. We also conducted a reconnaissance level botanical survey of the site.

The primary purpose of the survey was to determine if there were any federally or State of Hawaiʻi listed endangered, threatened, proposed, or candidate avian or mammalian species on, or in the immediate vicinity of the site. In addition, to the study we assessed the probability of any usage of the site by listed avian and mammalian species given the habitat currently found within the site. Federal and State of Hawaiʻi listed species status follows species identified in the following referenced documents (DLNR, 1998, Federal Register, 1999a, 1999b, 2001, 2002, 2004). Fieldwork was conducted on August 25th, 2005.

Avian phylogenetic order and nomenclature follows *The American Ornithologists' Union Checklist of North American Birds 7th Edition* (American Ornithologists' Union 1998), and the 42nd through the 45th supplements to *Check-list of North American Birds* (American Ornithologists' Union 2000; Banks et al. 2002, 2003, 2004). Mammal scientific names follow *Mammals in Hawaii* (Tomich 1986). Plant names follow *Manual of the Flowering Plants of Hawaiʻi* (Wagner et al. 1990, 1999). Place names follow *Place Names of Hawaii* (Pukui et al. 1974).

Hawaiian and scientific names are italicized in the text. A glossary of technical terms and acronyms used in the document, which may be unfamiliar to the reader, are included at the end of the narrative text on (Page 9).

General Site Description:

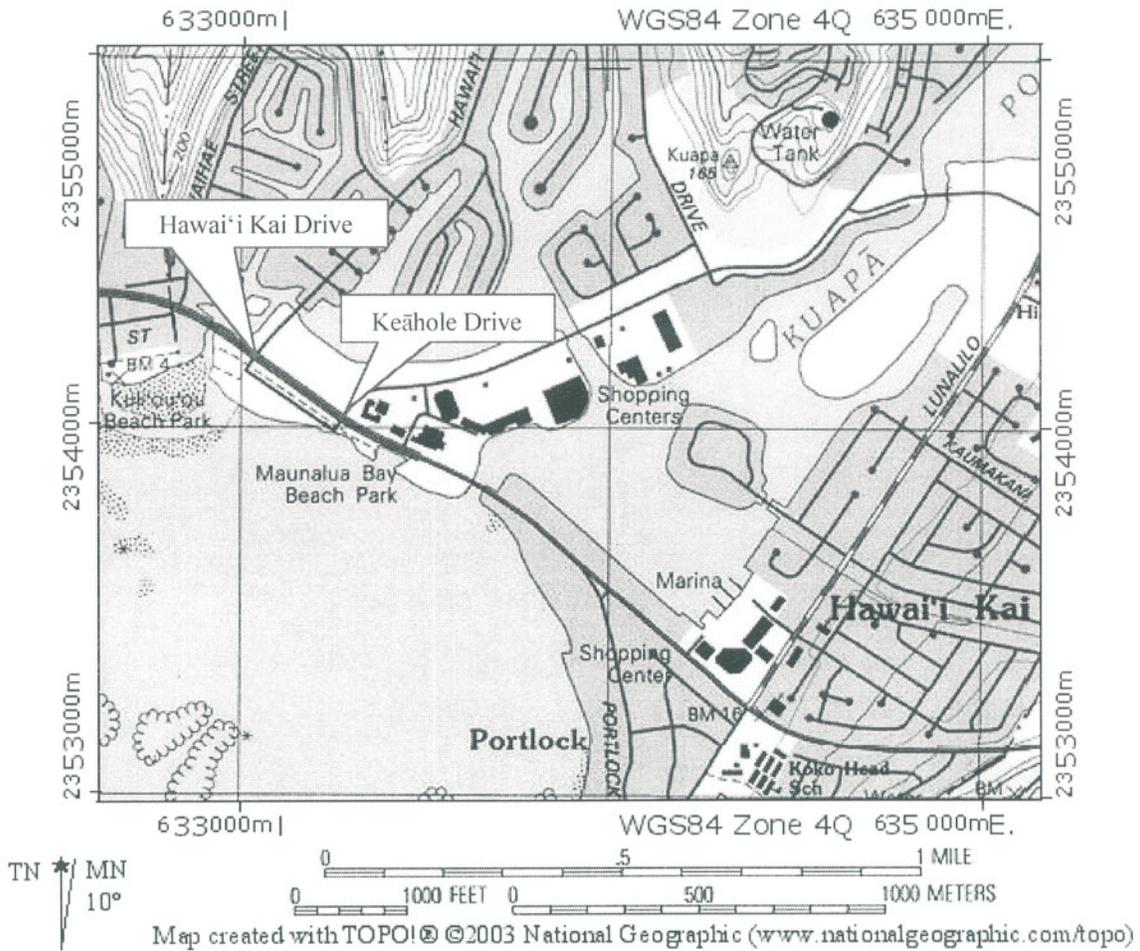
The site is located on the *mauka* side of Kalanianeʻole Highway between Keāhole Drive and Hawaiʻi Kai Drive in Hawaiʻi Kai at the entrance to the Hawaii Kai Subdivision. The flat, landscaped site is at an elevation of approximately three-feet above mean sea level (Figure 1).

The vegetation present on the site has all be planted and is being managed under an active landscape management program. There is a underground irrigation system and the alien grass ground cover is maintained by mowing. Trees present on the site include coconut (*Cocos nucifera*), fig (*Ficus* spp.), ironwood (*Casuarina equisetifolia*), erythrina (*Erythrina* spp.) and Manila tamarind (*Pithecellobium dulce*), numerous ti (*Cordyline*

fruticosa) plants have been planted on the eastern end of the site. As have several yellow oleander (*Cascabela thevetia*) bushes. Numerous coconut trees have recently been removed, and new trees started in close proximity to the stumps of the trees that have been removed.

Figure 1

Kalaniane'ole Highway Study Site



Mammalian Survey Methods

All observations of mammalian species were of an incidental nature. With the exception of the endangered Hawaiian hoary bat (*Lasiurus cinereus semotus*), or 'ōpe'ape'a as it is known locally, all terrestrial mammals currently found on the Island of O'ahu are alien species, most are ubiquitous. No trapping program was proposed or undertaken to quantify the use of the area by alien mammalian species. The survey of mammals was limited to visual and auditory detection, coupled with visual observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate species observed and heard within the study area.

Avian Survey Methods

Due to the highly disturbed nature of the site and its immediate proximity to the very busy Kalaniane'ole Highway standardized avian point counts were not practical. A walking survey was made of the entire site, and a list of all avian species detected was kept. Field observations were made with the aid of Leitz 10 X 42 binoculars and by listening for vocalizations. The survey was conducted in the early morning hours, the time of day that bird activity is typically at its peak.

Botanical Survey Methods

A pedestrian reconnaissance level survey was conducted of the entire site and a species list was kept of all plant species encountered.

Mammalian Survey Results

Three mammalian species; domestic dog (*Canis f. familiaris*), small Indian mongoose (*Herpestes a. auropunctatus*), and cat (*Felis catus*), were detected within the study site. One cat was seen hunting along the *mauka* border of the site and one mongoose was seen crossing the site. Scat, tracks and sign of dog, cat, and mongoose were also encountered within the site. All of these introduced mammalian species are deleterious to native species.

Avian Survey Results

Thirteen different avian species, representing 11 separate families were recorded during the course of this survey (Table 1). Two species, Great Frigatebird (*Fregata minor*) and Pacific Golden-Plover (*Pluvialis fulva*) are indigenous, the former breeds in Hawai'i, the latter merely spends the winter months in Hawai'i, but nests in the high Arctic. The remaining nine species detected during the course of this survey are considered to be alien to the Hawaiian Islands.

Table 1

Avian Species Detected Kalaniane‘ole Highway Widening Project			
Common Name	Scientific Name	ST	RA
PHASIANIDAE - Pheasants & Partridges			
Phasianinae - Pheasants & Allies			
Red Junglefowl	<i>Gallus gallus</i>	DA	C
PELECANIFORMES			
FREGATIDAE - Frigatebirds			
Great Frigatebird	<i>Fregata fulva</i>	IB	R
CHARADRIIFORMES			
CHARADRIIDAE – Lapwings & Plovers			
Pacific Golden-Plover	<i>Pluvialis fulva</i>	IM	R
COLUMBIFORMES			
COLUMBIDAE – Pigeons & Doves			
Rock Pigeon	<i>Columba livia</i>	A	R
Spotted Dove	<i>Streptopelia chinensis</i>	A	U
Zebra Dove	<i>Geopelia striata</i>	A	A
PASSERIFORMES			
PYCNONOTIDAE - Bulbuls			
Red-vented Bulbul	<i>Pycnonotus cafer</i>	A	R
ZOSTEROPIDAE – White-Eyes			
Japanese White-eye	<i>Zosterops japonicus</i>	A	R
STURNIDAE - Starlings			
Common Myna	<i>Acridotheres tristis</i>	A	A
EMBERIZIDAE - Emberizids			
Red-crested Cardinal	<i>Paroaria coronata</i>	A	R
CARDINALIDAE – Cardinals, Saltators & Allies			
Northern Cardinal	<i>Cardinalis cardinalis</i>	A	R
FRINGILLIDAE – Fringilline and Carduline Finches & Allies			
Carduelinae - Carduline Finches			
House Finch	<i>Carpodacus mexicanus</i>	A	U
ESTRILDIDAE – Estrildid Finches			
Estrildinae - Estrildine Finches			
Java Sparrow	<i>Padda oryzivora</i>	A	R

KEY TO TABLE 1

ST	Status
DA	Domesticated Alien – a species not currently known to be established in the wild on the island of O‘ahu
IB	Indigenous Breeder – a native breeding species also known to occur naturally in other areas across the Pacific
IM	Indigenous Migrant – a native migratory species that winters in Hawai‘i but breeds elsewhere
A	Alien – introduced to the Hawaiian Islands by humans
RA	Relative Abundance
A	≥ 15 birds
C	≥ 10 - ≤ 14
U	≥ 5 ≤ 9
R	≤ 4

Avian diversity and densities were low, not surprising given the urban habitat present on the site. Zebra Doves (*Geopilia striata*) were the commonest bird recorded. No avian species currently listed by either the U.S. Fish and Wildlife Service under the Endangered Species Act of 1973, as amended, or by the State of Hawai‘i under its endangered species program were detected within the study area (DLNR 1998, Federal Register 1999a, 1999b, 2001, 2002, 2004).

Discussion:

The findings of the mammalian survey are consistent with the highly disturbed, urban nature of the study site. It is likely that cat densities on this site are normally higher than recorded since there is a feral cat feeding station located at the commuter parking area just *mauka* of the site along Keāhole Drive. All of the alien mammalian species detected are deleterious to native ecosystems and the endemic species that are dependant upon them.

The findings of the avian survey are consistent with the highly disturbed, urban nature of the study site. The two native species detected Great Frigatebird and Pacific Golden Plover are commonly encountered coastal species. The frigatebird is a seabird and was seen soaring over the site. There is no habitat on the site suitable for use as either foraging or nesting habitat for this species. The Pacific Golden-Plover is one the three more frequently encountered indigenous migratory shorebirds found in Hawai‘i during the late summer and winter months. The short grass present on the site provides foraging and loafing habitat for this species. As previously mentioned this species does not breed in Hawai‘i.

The vegetation on the site is typical of that found in landscaped roadside areas on O‘ahu. The entire site has been planted and is maintained in a park-like fashion.

Conclusion:

It is not expected that the modification of the habitat currently found on the site or the construction of the planned road improvements will have a negative impact on any avian mammalian or botanical species currently listed as endangered, threatened, proposed, or as a candidate for listing under either federal or State of Hawai'i endangered species statutes.

Individual Pacific-Golden Plover may be disturbed or displaced by construction activity, though this disturbance will be of a temporary nature.

Glossary:

Alien - Introduced to Hawai'i by humans.

Domesticated – Feral species, not considered established in the wild on the Island of O'ahu

Endangered – Listed and protected under the ESA as an endangered species.

Endemic – Native and unique to the Hawaiian Islands

Indigenous - Native to the Hawaiian Islands, but also found elsewhere naturally.

Mauka – Upslope, towards the mountains

Threatened - Listed and protected under the ESA as a threatened species.

DLNR – Hawaii State Department of Land & Natural resources.

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Wagner, W.L., D.R Herbst, S.H. Sohmer 1990. *Manual of the Flowering Plants of Hawai'i*. University of Hawaii Press, Honolulu, Hawaii 1854 pp.

Wagner, W.L. and D.R. Herbst. 1999. *Supplement to the Manual of the flowering plants of Hawai'i*, pp. 1855-1918. *In*: Wagner, W.L., D.R. Herbst, and S.H. Sohmer, Manual of the flowering plants of Hawai'i. Revised edition. 2 vols. University of Hawaii Press and Bishop Museum Press, Honolulu.



KIMURA INTERNATIONAL INC.

January 30 2006

Ms. Gina Shultz
Acting Field Supervisor
U.S. Fish and Wildlife Service
Pacific Islands Office
300 Ala Moana Blvd., Rm. 3-122
P.O. Box 50088
Honolulu, Hawai'i 96850

Dear Ms. Shultz:

**Re: Section 7, ESA Consultation
Kalaniana'ole Highway Intersection Improvements
Maunalua Ahupua'a, Kona District, Island of O'ahu
TMK (1) 3-9-17:20**

The State of Hawai'i Department of Transportation (HDOT) and the U.S. Department of Transportation, Federal Highway Administration (FHWA) would like to notify you of their determination of "no effect" for the above referenced project.

Roadway improvements will be made within an 800-foot stretch on the mauka side of Kalaniana'ole Highway (Honolulu-bound), between Hawai'i Kai Drive and Keāhole Street (Figure 1). The purpose of the project is to improve the operational efficiency of the Kalaniana'ole Highway and Keāhole Street intersection. The project will add an exclusive right-turn lane ("free right") from Keāhole Street onto Kalaniana'ole Highway (Honolulu-bound) to facilitate traffic flow. It will also relocate the mauka sidewalk and bike lane. Electrical utility connections and relocations will extend slightly beyond Keāhole Street (on Kalaniana'ole Highway), as well as about 170 feet along Keāhole Street. Some land outside the existing highway right-of-way will be acquired from the Bishop Estate (Figure 2).

Botanical Resources

An assessment of the botanical resources on site was conducted in July 2005 (Morden & Associates), and is included with this letter. No native plants or threatened or endangered species

were found in the project corridor, and none will be affected. The area adjacent to the sidewalk is largely covered with Bermuda grass (*Cynodon dactylon*) and is mowed regularly. Scattered throughout are a few trees, mostly coconut trees (*Cocos nucifera*) and a couple fig trees (*Ficus microcarpa*). Mixed with the Bermuda grass are an assortment of other “weedy” species of grass, herbs, and shrubs.

The trees found in the area are not in the project corridor, but may be impacted by construction during the proposed lane addition. The palm trees are small and may possibly be moved if necessary.

Terrestrial Wildlife and Avian Resources

A survey of avian and terrestrial mammalian species in the project area was conducted in August 2005 (Rana Productions, Ltd. 2005). A copy of the study is included with this letter.

No species currently listed by either the U.S. Fish and Wildlife Service under the Endangered Species Act of 1973, or the State of Hawai‘i under its endangered species program were detected within the study area.

The findings of the mammalian survey are consistent with the highly disturbed, urban nature of the site. Three mammalian species, the domestic dog (*Canis f. familiaris*), small Indian mongoose (*Herpestes a. auro punctatus*), and cat (*Felis catus*) were detected within the study site. The study also noted the presence of a feral cat feeding station located at the commuter parking area just mauka of Keāhole Drive.

Thirteen different avian species representing 11 separate families were recorded during a walking survey of the site. Two indigenous species, Great Frigatebird (*Fregata minor*) and Pacific Golden Plover (*Pluvialis fulva*), were identified. The remaining species detected during the survey are considered to be alien to the Hawaiian Islands. Avian diversity and densities were low, not surprising given the urban habitat of the site.

It is not expected that the modification of the habitat currently found on site of the construction of the planned road improvements will have a negative impact on any listed or candidate avian or mammalian species.

Individual Pacific-Golden Plover may be disturbed or displaced by construction activity, though this disturbance will be of a temporary nature.

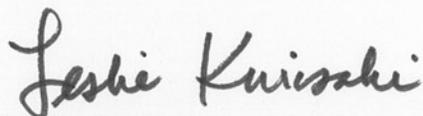
No Effect Determination

Based on the results of these studies, the FHWA and the HDOT have determined that this project will have no effect on any rare, threatened or endangered species, or designated critical habitat.

If you have any questions, please contact me at 944-8848.

Sincerely,

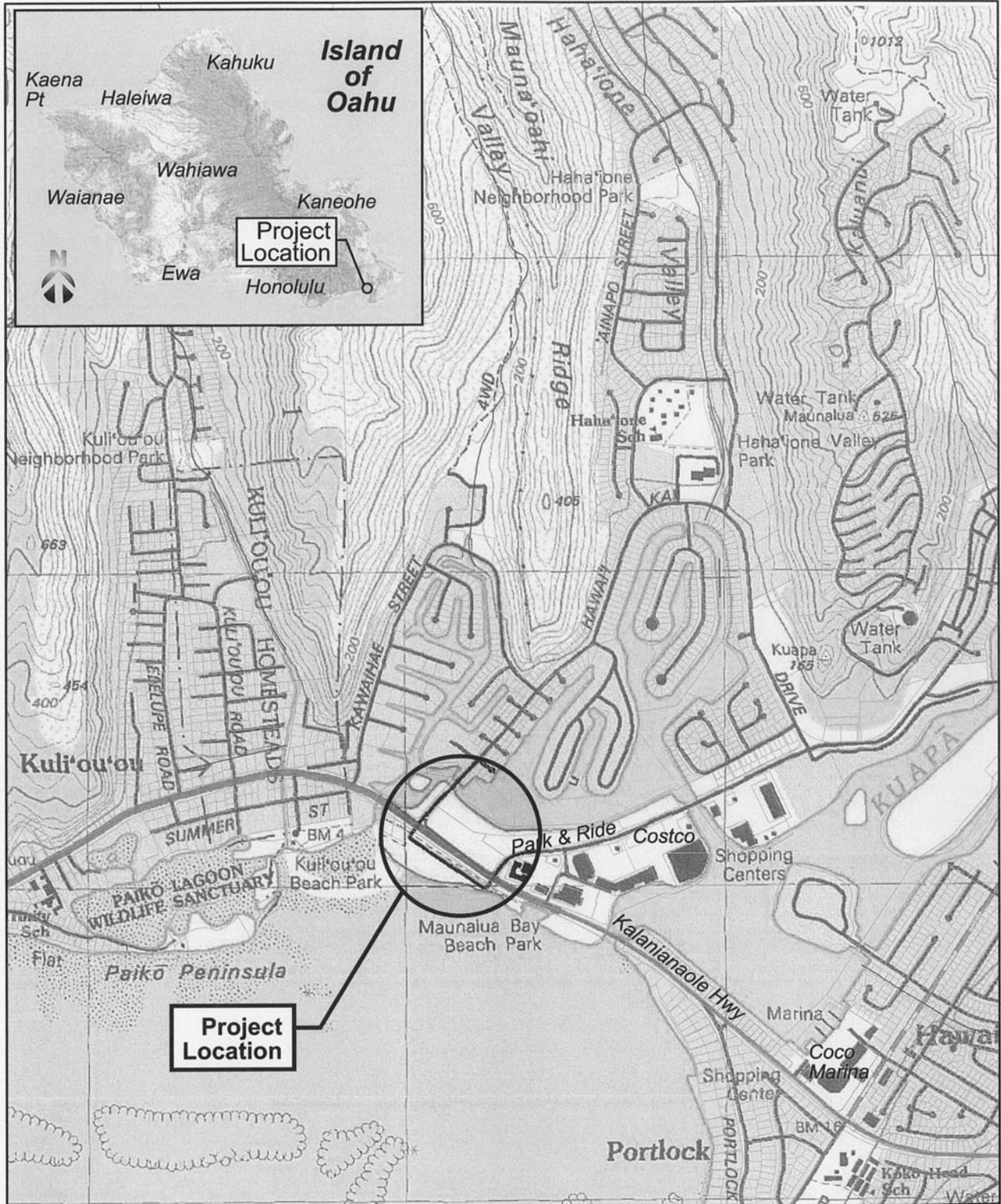
KIMURA INTERNATIONAL, Inc.

A handwritten signature in cursive script that reads "Leslie Kurisaki".

Leslie Kurisaki
Senior Planner

Cc: Mr. Abraham Wong, Federal Highway Administration
Mr. Rod Haraga, Hawaii State Department of Transportation

Kalaniana'ole Hwy Improvements



June 2005

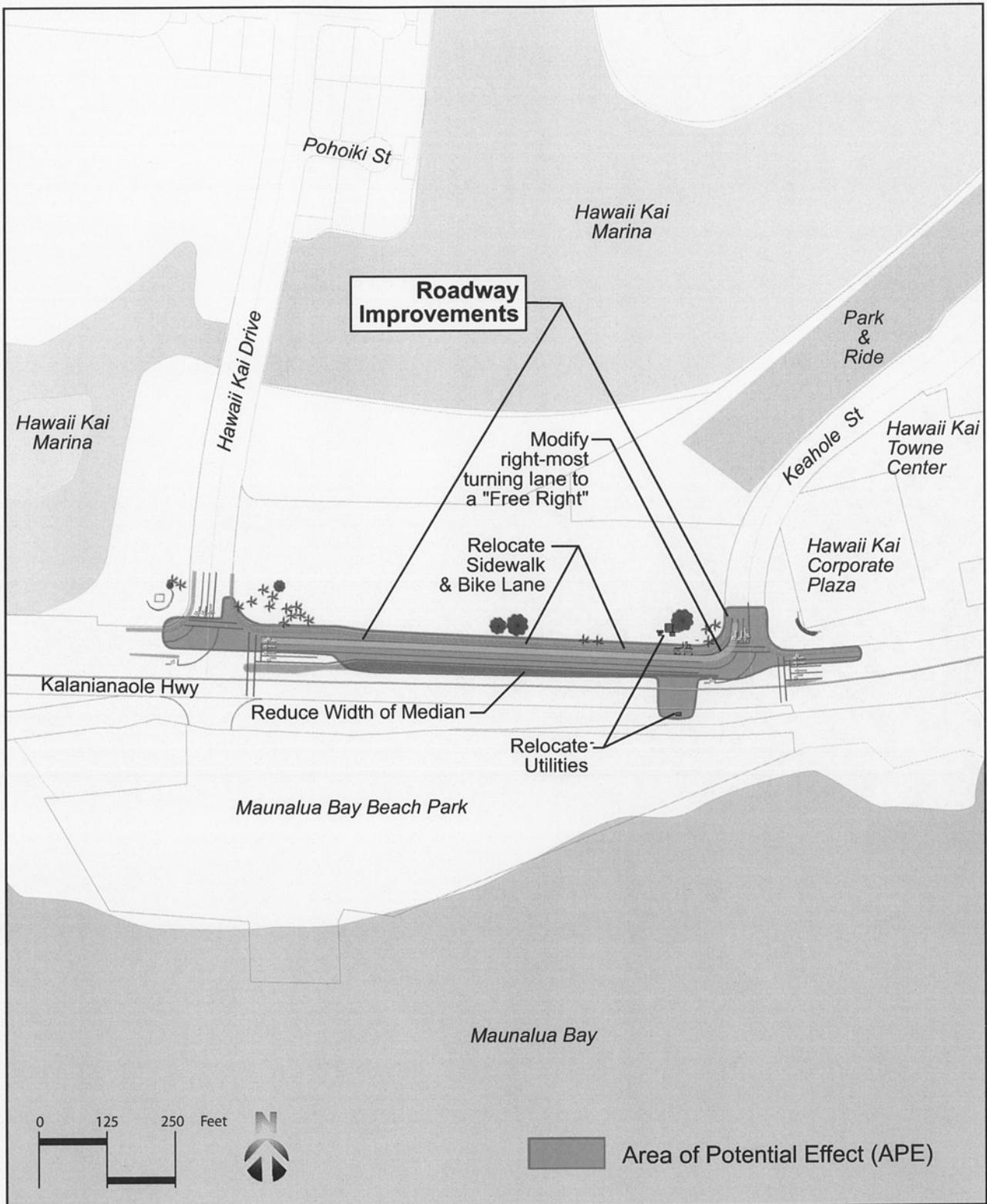
0 750 1500 Feet



1 Mile

Figure 1
Location

Kalaniana'ole Hwy Improvements



September 2005

Figure 2
Area of Potential Effect

Leslie Kurisaki

From: Patrice_Ashfield@fws.gov
Sent: Tuesday, May 30, 2006 5:32 PM
To: Leslie Kurisaki
Cc: Marilet_Zablan@fws.gov
Subject: Re: Kalaniana'ole Highway Intersection improvements

Dear Leslie-

I checked our section 7 log and we received your no effect determination for work to be completed on Kalaniana'ole Highway Intersection Improvements Maunaloa Ahupua'a (TMK: 3-9-17:20) on January 30, 2006. On Feb 2, 2006, Marilet Zablan reviewed your proposed project description and concurred with your no effect determination. Our log number for your project is 1-2-2006-TA-152.

Hope this helps, please contact me if you have any questions or concerns.
Sincerely,

Patrice

Patrice M. Ashfield
Acting Consultation and Technical Assistance Program Coordinator Pacific Islands Fish and Wildlife Office 300 Ala Moana Blvd, Rm 3-122, Box 50088 Honolulu, Hawaii 96850
(808) 792-9400 phone
(808) 792-9581 fax

"Leslie Kurisaki"
<lkurisaki@kimura
international.com
>
05/30/2006 02:30
PM

<patrice_ashfield@fws.gov>
To
cc
Subject
Kalaniana'ole Highway Intersection
improvements

Dear Patrice—

Thanks for returning my call regarding this project, and confirming the USFWS no effect determination. Could you please send me an e-mail summarizing our discussion, so we (and FHWA) have something in our records?

Thanks so much.

Leslie Kurisaki
Senior Planner
Kimura International, Inc.
1600 Kapiolani Blvd., Suite 1610
Honolulu, Hawaii 96814
(808) 944-8848 (ph)
(808) 941-8999 (fax)

**Archaeological Literature Review and Field Inspection
for a Highway Improvement Project on an approximately 305-meter long
section of Kalaniana'ole Highway between Keāhole Street
and Hawaii Kai Drive,
Maunaloa Ahupua'a, Kona District, O'ahu Island**

TMK (1) 3-9-17:20

DRAFT

by
Rodney Chiogioji, B.A.
and
Hallett H. Hammatt Ph.D.

Prepared for
Kimura International, Inc.

Cultural Surveys Hawai'i, Inc.
(CSH Job Code: MAUN 23)
July 2005

MANAGEMENT SUMMARY

Title	Archaeological literature review and field inspection and literature review for a highway improvement project on an approximately 305-meter (1000 ft.) long section on the <i>mauka</i> (East) side of Kalanianaʻole Highway, between Keāhole Street and Hawaii Kai Drive, Maunaloa Ahupuaʻa, Kona District, Oʻahu Island (TMK (1) 3-9-17:20)
Date	July 2005
Project Number	Cultural Surveys Hawaiʻi Inc. (CSH) Job Code: MAUN 23
Permit Number	The fieldwork for this investigation was carried out under archaeological permit number 0508, issued by the Hawaiʻi State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR).
Project Agencies	SHPD, State of Hawaiʻi Department of Transportation (HDOT), Federal Highways Administration (FHWA)
Land Jurisdiction	State (HDOT)
Project Funding	FHWA, HDOT
Project Location and Investigation Boundaries	Oʻahu, Kona, Maunaloa, TMK (1) 3-9-17, 1998 USGS 1:24,000 Honolulu Quadrangle. This project extends approximately 300 meters. The current investigation focused on the <i>mauka</i> (east) side of the Kalanianaʻole Highway right-of-way (ROW) and its immediate vicinity.
Project Description	The project’s purpose is to improve operational efficiency of the Kalanianaʻole Highway and Keāhole Street intersection. Roadway improvements will be made on the <i>mauka</i> side of Kalanianaʻole Highway (Honolulu-bound) between Hawaii Kai Drive and Keāhole Street. The project will add an exclusive right-turn lane from Keāhole Street onto Kalanianaʻole Highway (Honolulu-bound) to facilitate traffic flow. It will also relocate the <i>mauka</i> sidewalk and bike lane, and relocate all utilities on the <i>mauka</i> side of the highway.
Project Historic Preservation Regulatory Context	Due to FHWA funding, this project is a federal undertaking requiring compliance with Section 106 of the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA), and the federal Department of Transportation Act (DTA). As an HDOT project within state ROW, the project is subject to Hawaiʻi State environmental and historic preservation review legislation [Hawaiʻi Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawaiʻi Administrative Rules (HAR) Chapter 13-13-275, respectively].

<p>Document Purpose</p>	<p>Based on historical, cultural, and archaeological background research, and a field inspection of the project area, this report presents documentation of the land area in Maunalua Ahupua‘a upon which the Kalaniana‘ole Highway study area sits. The report is intended to facilitate the project’s planning and support the project’s historic preservation compliance. A companion cultural impact evaluation (CIE) study (Mitchell, Chiogioji and Hammatt 2005), prepared per the guidelines of the Hawai‘i State Department of Health’s Office of Environmental Quality Control, further evaluates the project’s potential impacts to cultural resources. Both documents will support the project’s historic preservation consultation effort.</p>
<p>Fieldwork Effort</p>	<p>Rodney Chiogioji, BA, conducted the field inspection on May 8, 2005.</p>
<p>Findings</p>	<p>The Kalaniana‘ole Highway alignment between Keāhole Street and Hawaii Kai Drive sits on landfill deposited within Kuapā pond – a traditional Hawaiian fishpond – in the 1960s during the construction of the Hawaii Kai development. It is thus unlikely that any subsurface historic properties are present beneath the highway, particularly on its <i>mauka</i> side where the improvement project is planned. Additionally, in light of the extensive dredging within the pond itself during the Hawaii Kai development, it is unlikely that any of the original pond deposits remain undisturbed beneath the project area.</p> <p>In the mid-1990s during archaeological monitoring for the Phase II Widening of Kalaniana‘ole Highway Project from East Halema‘uma‘u Road to Keāhole Street that included the current project area, no historic properties were encountered between Keāhole Street and Hawaii Kai Drive. All properties documented during that project – including human burials and non-burial sites – were encountered in Jaucus sand deposits beneath the highway corridor in Kuli‘ou‘ou Ahupua‘a to the northwest of the current project area.</p>
<p>Recommendations</p>	<p>Based on this report’s findings, no further archaeological investigation is warranted.</p> <p>It should be noted, however, that historic properties – such as traditional Hawaiian and historic artifacts, and human remains – are occasionally encountered in landfill materials. As a precautionary measure, personnel involved in highway improvement activities in the project area should be informed that the State Historic Preservation Division should be notified concerning any potential historic properties encountered during the project.</p>

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I. INTRODUCTION

A. Project Background

At the request of Kimura International, Inc., Cultural Surveys Hawai‘i has conducted an archaeological literature review and field inspection report for a highway improvement project on an approximately 305-meter (1000 ft.) long section on the *mauka* (East) side of Kalaniana‘ole Highway, between Keāhole Street and Hawai‘i Kai Drive, in Hawai‘i Kai, Maunaloa Ahupua‘a, Kona District, O‘ahu (TMK: 3-9-17:20) (Figures 1 & 2).

This section of Kalaniana‘ole Highway is owned by the State of Hawai‘i and maintained by the City and County of Honolulu.

The purpose of the project is to improve operational efficiency of the Kalaniana‘ole Highway and Keāhole Street intersection. Roadway improvements will be made on the *mauka* side of Kalaniana‘ole Highway (Honolulu-bound) between Hawaii Kai Drive and Keāhole Street. The project will add an exclusive right-turn lane from Keāhole Street onto Kalaniana‘ole Highway (Honolulu-bound) to facilitate traffic flow. It will also relocate the *mauka* sidewalk and bike lane, and relocate all utilities on the *mauka* side of the highway.

Due to FHWA funding, this project is a federal undertaking requiring compliance with Section 106 of the National Historic Preservation Act (NHPA), the National Environmental Policy Act (NEPA), and the federal Department of Transportation Act (DTA). As an HDOT project within state ROW, the project is subject to Hawai‘i State environmental and historic preservation review legislation [Hawai‘i Revised Statutes (HRS) Chapter 343 and HRS 6E-8/Hawai‘i Administrative Rules (HAR) Chapter 13-13-275, respectively].

Based on historical, cultural, and archaeological background research, and a field inspection of the project area, this report presents documentation of the land area in Maunaloa Ahupua‘a upon which the Kalaniana‘ole Highway study area sits. The report is intended to facilitate the project’s planning and support the project’s historic preservation compliance. A companion cultural impact evaluation (CIE) study (Mitchell, Chiogioji and Hammatt 2005), prepared per the guidelines of the Hawai‘i State Department of Health’s Office of Environmental Quality Control, further evaluates the project’s potential impacts to cultural resources. Both documents will support the project’s historic preservation consultation effort.

B. Scope-of-Work

The scope of work for this investigation includes:

1. Historical and previous archaeological background research to include study of archival sources, historic maps, Land Commission Awards and previous archaeological reports to construct a history of land use and to determine if archaeological sites have been recorded on or near this property.
2. Field inspection of the project area to identify any surface archaeological features and to investigate and assess the potential for impact to such sites. This assessment will identify any sensitive areas that may require further investigation or mitigation before the project proceeds.

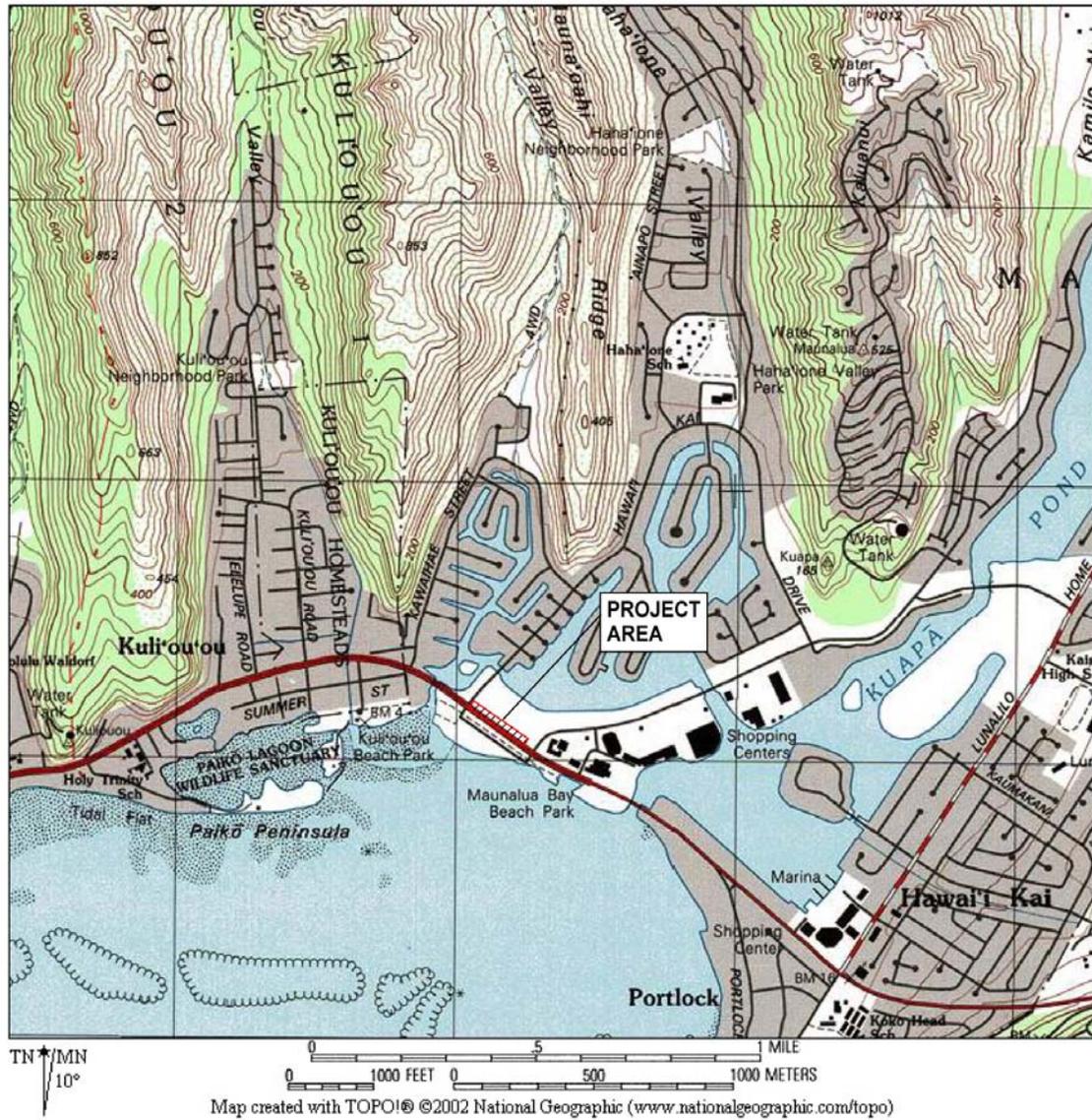


Figure 1. Portion of USGS 7.5 Minute Series Topographic Map, Koko Head Quadrangle, showing project area location

3. Preparation of a report to include the results of the historical research and the fieldwork with an assessment of archaeological potential based on that research, with recommendations for further archaeological work, if appropriate. It will also provide mitigation recommendations if there are archaeologically sensitive areas that need to be taken into consideration.

C. Methods

Historical background research included study of archival sources, Land Commission Awards, historic maps and photographs, as well as a review of past archaeological research in Maunalua Ahupua‘a to construct a history of land use and to assess the potential for the presence of historic properties within the project area.

Field inspection of the project area was undertaken by Rodney Chiogioji, B.A., under the supervision of Hallett H. Hammatt, Ph.D., on May 8, 2005. The fieldwork was carried out under archaeological permit number 0508, issued by the Hawai‘i State Historic Preservation Division/Department of Land and Natural Resources (SHPD/DLNR).

D. Natural Setting

The Kalaniana‘ole Highway corridor between Keāhole Street and Hawaii Kai – at 3ft. above mean sea level – traverses the coast of Maunalua Ahupua‘a *makai* of the extensive Hawaii Kai residential and commercial development. According to the O‘ahu soil survey (Foote et al. 1972), the present highway project area sits upon fill land. Natural deposits of jaucus sand beneath the highway corridor in the vicinity occur only to the northwest in Kuli‘ou‘ou Ahupua‘a and to the southeast as the highway approaches Portlock Road. Annual rainfall in this area of O‘ahu is less than 1000 millimeters (40 inches) per year (Giambelluca, Nullet and Schroeder, 1986) falling predominantly in the winter months.

II. MAUNALUA : HISTORICAL BACKGROUND

The present project area is located in the Hawaiian land division of Maunaloa. In traditional Hawaiian times, Maunaloa Valley was an *'ili* of Waimanalo Ahupua'a in the Ko'olaupoko District. In 1859 Maunaloa became part of the Kona District as an *'ili* of Waikiki Ahupua'a (Takemoto et al. 1975). Subsequently Maunaloa was considered an *ahupua'a* itself.

The history of Maunaloa has been well documented by the work of Marion Kelly (Kelly et al 1984) and Anne Takemoto (1975). The following is a brief overview of the mythological accounts, oral traditions, and history of Maunaloa.

A. Mythological and Traditional Accounts

"Mauna-lua"--literally "two mountains" (Pukui et. al. 1981:149 -- probably refers to Koko Head and Koko Crater, the prominent volcano remnants that dominate the landscape. It seems only fitting that the mythology of a region named after its two prominent volcanoes would contain references to the volcano goddess Pele. The mythical activities of Pele and her youngest sister Hi'iaka are the basis for many of the landmarks and place names in Maunaloa (Takemoto 1975:6). According to tradition, Pele and her supernatural brothers and sisters came to Hawaii and began searching throughout the islands for a home. After investigating all of the islands, Pele eventually settled at Kilauea on the island of Hawai'i. Being the goddess of fire and volcanoes, Pele was in constant strife with the god of forests and growing things, Kamapua'a. Maunaloa, as a more arid region, would be the domain of Pele, and the adjacent windward region of Koolau would have been the domain of Kamapua'a (Kelly et. al 1984:23).

One mythical account of the inter-deity strife between Pele and Kamapua'a is tied to Koko crater. Pele was once attacked by Kamapua'a near Kalapana, Hawai'i. In order to save Pele from being raped, Pele's sister Hi'iaka sent her kohe lele, or flying vagina, as a lure to distract Kamapua'a and lead him away from the scene of the attack. The ploy worked and Kamapua'a followed the lure to Koko Crater, O'ahu, where it left an imprint, giving the volcano remnant its name, Kohelepelepe, literally, vagina labia minor. (Pukui and Elbert 1971:388; Pukui, Elbert, and Mookini 1974:115 cited in Kelly et. al 1984:23).

Another Maunaloa location specifically tied to Pele mythology was a stone called Kawa'aopele, "Pele's Canoe". Originally located on the Honolulu side of the Davis ranch house (at Kaloko), this rock had the mark from Pele's canoe when she landed after the Pele migration came to Maunaloa (Sterling and Summers 1978:260). The stone was washed away by the 1946 tsunami.

Pele battled and conquered Namaka-o-Kaha'i, another goddess. The Namaka-o-Kaha'i stone at Hanauma Bay was left by the defeated goddess--but the landmark has since disappeared. "The stone was covered with dregs of awa, a narcotic drink made by chewing roots and used in religious ceremonies, which gave the dark stone a florescent glow in the night" (Summers and Sterling 1962:46 cited in Takemoto 1975:6).

At the southern end of Kapali o Kamao stands the large geologic formation known as Pele's Chair or Pele's Throne. Clearly visible on its promontory, from a distance this natural formation looks like a throne and is said to be one of the places from which Pele departed O'ahu for other islands (James 1991:42).

Pele's youngest sister Hi'iaka, plays further roles in Maunaloa mythology. Before the 1946 tsunami, between Makapu'u Point and the Davis ranch house, were a set of stones. The story goes that the site of the "balancing stone" was made up of the lithified remains of a brother and sister from Maui who incurred the wrath of Hi'iaka. The woman was turned to stone first for wasting Hi'iaka's gift of an uhu fish. Her brother, in failing to reach his sister before the sun came up, was subsequently turned to stone (Sterling and Summers 1978:260).

Hi'iaka was also involved with two *kupua* (supernatural beings) associated with the Makapu'u area, Makapu'u and Malei. Makapu'u was a supernatural woman of frightening appearance because of her many glowing eyes [Makapu'u means literally 'hill beginning' or 'bulging eye' (Pukui et. al. 1981:142)]. In one account Hi'iaka was traveling to O'ahu in a canoe with companions. When the canoe passed Makapu'u Point and was nearing the shore at Waimanalo, the *kupua* Makapu'u was sighted on the beach by the men on board. Although Hi'iaka invited all to have a meal with her friend Makapu'u, the men were too frightened and only willing to land on the Kona side of Makapu'u Point where they left Hi'iaka as they hurried away. Hi'iaka had to walk to Makapu'u, who had prepared a meal for them (Sterling and Summers 1978:257-258). Legend has it that the *kupua* Makapu'u came from Kahiki with the famous priest Pa'ao (Sterling and Summers 1978:258, quoting Green 1926:21). Another legend identifies Makapu'u as one of two sisters that came to O'ahu with the Kaua'i chief, Moikeha when he came from Kahiki (Kelly et. al 1984:4).

Malei is another female *kupua* associated with the Makapu'u area. She "assumed various bodily forms" and was associated with the uhu fish (Sterling and Summers 1978:258). The Malei stone was originally placed in the Waimanalo Gap overlooking Makapu'u. According to one legend, the Malei stone was placed at Makapu'u by Ai'ai, the son of the famous fish god, Ku'ula (Kelly et. al 1984:4).

From Makapu'u to Hanauma Bay, the uhu fish multiplied under her [Malei's] care. When she was established on this land all the chiefs and commoners went to give offerings of leis made of lipoa seaweed. They were placed on the stone Malei with prayers. The fishermen were lucky on these beaches and Malei was happy with her leis of lipoa seaweed . . . The stone Malei remained there for a long time at Makapu'u. The fisherman of Waimanalo constantly ascended the cliff at Makapu'u. (Sterling and Summers 1978:259)

According to legend the Malei stone stood over Makapu'u until it was removed by John Cummings and taken to his house during the time of King Kalakaua. With Cummings' death the stone was returned only to be removed or thrown into the sea by a Makapu'u lighthouse keeper who died not long after (Kelly et. al 1984:4-5). By the time of McAllister's visit (1930) only a cement foundation remnant was visible at the previous location of the Malei stone (McAllister 1933:58-59).

Legend credits Hi'iaka with giving the *kupua* Makapu'u and Malei encouragement and advice. The region of Kealahou Valley and Makapu'u lacked vegetable foods, which had to be supplied from adjacent Waimanalo. Hi'iaka encouraged the legendary women Malei and Makapu'u to cultivate the plain by planting sweet potatoes to relieve their hunger (Sterling and Summers 1978:257-258).

Maunalua was traditionally "an ili of the ahupua'a of Waimanalo and originally belonged to Ko'olaupoko district" (Sterling and Summers 1978:257). As a part of Ko'olaupoko, Maunalua surely had a trail that connected it with Waimanalo. The easiest communication between these two regions would have been through Kealakupapa Valley and down the Waimanalo Gap. Kealakupapa means literally "paved road", the road from Wawamalu to Makapu'u (Pukui et. al. 1981:102). This name implies that the Kealakupapa road (McAllister's site 3) could possibly be of prehistoric origin. Pukui (cited in Sterling and Summers 1978:260) believed the road was pre-European. Described as Kealanuikipapa, Pukui states that "an ali'i who lived at Wawamalu had the road built. He made the people who annoyed him build the road".

B. Early Historic Period

During the inter-island warfare that preceded Kamehameha's unification of the Hawaiian archipelago, Maunalua's natural harbors of Hanauma and Koko (Maunalua Bay) were considered vulnerable points in the defense of O'ahu. Alapai, the 18th century ali'i nui of the island of Hawai'i attempted an attack of O'ahu. After his warriors were driven back first at Waikiki, then at Waialae, and then at Koko, Alapai's troops were beaten a final time at Hanauma Bay (Kamakau, 1961:71 cited in Takemoto 1975:12). Following this successful defense of O'ahu, O'ahu's rulers maintained the rulership of their island for a number of years. However, in 1783, Kahekili, the King of Maui, defeated the forces of the ruler of O'ahu in a battle at Honolulu and took control of the island (Ibid.).

It was during the rule of Kahekili that the first Europeans landed and traded at Maunalua. On June 1st, 1786 the English ships King George and Queen Charlotte, under the commands of captains Nathaniel Portlock and George Dixon, respectively, anchored in Maunalua Bay. The next day in quest of water, Portlock and Dixon went ashore near Koko Head. They found a small, insufficient spring in the dry landscape 50 yards back from the coast--and were told that any substantial fresh water sources were a considerable distance westward. Traveling by boat northward from the first landing, Portlock and Dixon landed on a sand beach, where they were told that water sources were further to the west. Setting off on foot to the west along the beach with a guide, the landing party came up against a "salt water river" that stopped their progress along the coast. This salt water river is likely the waterway between Kuapā Fish Pond and Maunalua Bay (Takemoto 1975:13-15). Returning to the boats, the landing party experienced difficult passages through the reef and trouble with waves. The captains realized too great an effort would be required to water at this location. Water was eventually purchased around Diamond Head, in Honolulu (Ibid.).

Informants told Portlock that Honolulu was a more populous, more productive place where plenty of hogs and vegetables could be obtained. However, because Portlock already had his needed supply of water, the ships remained in Maunalua until June 5th (Ibid.). Portlock described the Maunalua landing site as follows: "the low land and vallies being in a high state of cultivation, and crowded with plantations of taro, sweet potatoes, sugar cane, &c. interspersed with a great number of cocoa-nut trees" (Portlock 1968:74 cited in Takemoto 1975:14).

Portlock and Dixon returned in November of the same year to a less hospitable welcome. Until King Kahekili's official visit the ships were placed under tabu and no commerce or visitors to the ships were allowed. A priest warned Portlock that Kahekili was considering attacking the ships. Kahekili was dissuaded by a demonstration of the power of the ship's guns. Following

Kahekili's arms lesson, Portlock observed the demolition of a heiau on the shore--the same structure he had watched being constructed before his encounter with Kahekili. It appeared that Kahekili's plans for the structure were abandoned once he appraised the fighting potential of Portlock and Dixon's ships (Takemoto 1975:15).

Kahekili died in 1794, splitting his kingdom between his sons Kalanikupule and Kaeo. Kalanikupule briefly ruled O'ahu and Moloka'i before being defeated by Kamehameha in 1795 at the battle of Nuuanu. Following this conquest Kamehameha followed custom and made a tour of the island he had conquered. Concerned that the productivity of the land be restored rapidly after the disruption of war, Kamehameha is said to have worked on several fishponds during his tour, including the Kuapā Fishpond at Maunaloa. Kamehameha did this to demonstrate to his people the importance of hard work and productivity (Takemoto 1975:16). One account cited in Handy and Handy (1972:485) describes the route that Kamehameha took in his work tour of the O'ahu, ". . . Kamehameha and his followers left Kailua and proceeded on to Waimanalo. From Waimanalo they went to Makapu'u and from there to Honolulu".

Kamehameha gave the 'ili of Maunaloa to his faithful warrior Kuihelani. However Kuihelani lost his lands due to the indiscretions of his wife and Maunaloa reverted to Kamehameha's control (Takemoto 1975:19). Kamehameha next gave Maunaloa to his father-in-law Ke'eamoku (father of Ka'ahumanu). Ke'eamoku died in an epidemic (thought to be cholera) that passed through Maunaloa in 1804 (Ibid.). The population of Maunaloa including the eastern coastal area of O'ahu, may have been reduced drastically during this epidemic (Schmitt 1968:24 cited in Kelly et. al 1984:25). Following Ke'eamoku's death the ownership of Maunaloa passed on to Ka'ahumanu, his daughter. It was during this period that the land ownership of Maunaloa became tied to the title of premier. Ka'ahumanu passed the land ownership and title of premier to Kinau, a daughter of Kamehameha. Kinau in turn passed on both the land of Maunaloa and the title of premier to her daughter, Victoria Kamāmalu (Takemoto 1975:20). It was Victoria Kamāmalu who secured the land title of the 'ili of Maunaloa during the Mahele.

John 'Ī'i, a member of Kamehameha's court, visited Maunaloa sometime around 1810. Traveling aboard the ship Apuakehau from Honolulu to the island of Hawaii, 'Ī'i stopped at Kawaihoa--the landing at Maunaloa Bay that was a common stop-over point for inter-island and circle-island navigation at this time ('Ī'i 1983:108). It also discusses the old trails systems extant on O'ahu "about" the year 1810. Regarding the route to southeast O'ahu from Honolulu 'Ī'i notes several trails that met at "the sand and go along Keahia and so on to Maunaloa, to the sea of Koko, to Makapu, and so on" ('Ī'i 1983:94). Undoubtedly the route ran through Maunaloa, through Kealakupapa Valley, to Waimanalo via the cliff at the Waimanalo Gap. There are several accounts of early missionaries taking this route in their tours of O'ahu.

Gilbert Mathison most likely followed this same route during his excursion around the island of O'ahu in 1821. Within Maunaloa he noted the large salt water lake (Kuapā Fishpond) around which he saw scattered approximately 100 huts. The people of the area were described as fisherman (Takemoto 1975:17).

In July and August of 1826 Ka'ahumanu made a tour of the island of O'ahu to talk with her subjects and preach the new Christian religion. In her company was the missionary Hiram Bingham, along with 200-300 other people. Bingham described the journey as follows:

Availing myself of the facilities thus afforded for our work, I made the tour with them [Ka'ahumanu's entourage], employing a month to good advantage, giving my attention chiefly to preaching, and the care and establishment of schools, and reading the Scriptures . . . Several horses, two wagons, and two canoes, constituted the principal accommodations, as vehicles for parts of the company, much of the way. Most of the company traveled on foot, some making the whole circuit, of about one hundred and thirty miles, and some but smaller portions of it, as we passed round from Honolulu to the east, north, west, and south, then to the east again . . . We spent a Sabbath at Kaneohe, and passed through Palikoolau . . . (Bingham 1847:294-295)

From this account it is clear that Ka'ahumanu's party passed through Maunalua and continued on through Waimanalo to reach Kāne'ohe, where, after spending the Sabbath, they crossed the Ko'olau Mountains via the Nu'uaniu Pali. Unfortunately, no mention was made of the settlement and population of Maunalua, or the Kealakupapa Road, although the party most certainly observed them. This testimony does indicate that this route around the southeast end of O'ahu was a commonly traveled one.

Levi Chamberlain made two tours of O'ahu (1826 and 1828) to inspect and bolster the newly founded mission schools. On Chamberlain's first trip around the island, he approached the settlement at Kuapā Fishpond (called Keawaawa) from Makapu'u. Chamberlain did address 30 people at what must have been a sizeable village at Kuapā Fishpond (Handy and Handy 1972:483). Chamberlain suggests that during his visit much of the population was away cutting sandalwood, although Maunalua had little in the way of sandalwood resources (Takemoto 1975:17). On his second trip, Chamberlain approached Maunalua from Waialae. His descriptions indicate Maunalua was once populous. However, based on the decrease in student enrollment in the mission school over a four-year period, the community was undergoing steady depopulation (Takemoto 1975:17-18).

During Chamberlain's first tour of O'ahu he described the road way or path at Kealakupapa leading down from the Waimanalo Gap (McAllister's site 3):

(Leaving Makapu'u to cross Maunalua) After descending gradually some distance over a raised walk formed of rocks and pieces of lava brought together for the natives the road took a turn in a west-south-west direction giving me the sea on the left and a ridge of barren hills on the right . . . (Levi Chamberlain, "Trip around Oahu in 1826" cited in Sterling and Summers 1978:260)

Once the sandalwood gave out, economic activities of Hawaiian settlements focused on the cultivation of crops that could be exchanged with the foreign sailing vessels--in particular those of the whaling industry which had its boom period from 1820-1850 (Jones 1996:20; Takemoto 1975:18). Maunalua was no exception. At least two settlements were active as anchorage and provisioning sites for foreign vessels in the early 19th century. Wawamalu village was located at Queen's Beach and exploited the famous sweet potato agricultural land of Kealakupapa Valley for cash/barter crops. At Kuapā Fishpond, Keawaawa village also raised trade crops for the whaling and trade vessels that anchored off Maunalua for provisions. Additionally:

According to the last surviving kama'āina of Maunalua, sweet potatoes were grown in the small valleys, such as Kamilonui, as well as on the coastal plain. The plain below Kamiloiki and Kealakupapa was known as Ke-kula-o-Kamauwai. This was the famous potato-planting place from which came the potatoes traded to ships that anchored off Hahaione in whaling days. The village at this place, traces of which may still be seen, was called Wawamalu. (Handy "Hawaiian Planter" Vol. I, p. 155 cited in Sterling and Summers 1978:257)

Another similar village was located in Waimanalo, at the current site of Sea Life Park. Referred to as Kaupo, its proper name according to an official Bishop Estate map was Koanapou (McAllister 1933:193). Kelly (et. al 1984:25) suggests this village shared the cultivation lands of Kealakupapa Valley and coastal plain below with the inhabitants of Wawamalu, Kaho'ohaihai, and Ka'ili'ili. Certainly the trail up the Makapu'u cliff at the Waimanalo gap would have provided easy access to these agricultural lands. When McAllister visited the ruins of Kaupo/Koanapou in 1930 his informants said the village had been built during the small pox epidemic of 1853 (McAllister 1933:193). Kelly suggests, because of the site's excellent location and resources for a traditional Hawaiian village, that the village was abandoned during the early part of the 19th century and only re-inhabited in 1853 during the small pox epidemic (Kelly et. al 1984:25).

In the early historic period, the victualing trade was the life's blood for many traditional Hawaiian settlements, including those at Maunalua. It maintained resident populations in areas that would have otherwise become depopulated under the dual effects of epidemics and the relocation of inhabitants to growing towns such as Honolulu (a fate that seems to have befallen Kaupo village). When the victualing trade gave out, settlement in these regions declined. By the early 1850s the hey-day of whaling was passing. In 1852 the Hawaiian government passed legislation requiring all foreign vessels to call at Honolulu where they could be taxed. This further reduced the number of ships that anchored at smaller landing sites such as those at Maunalua (Jones 1996:21; Takemoto 1975:20). "It is clear that Maunalua lost much of its population and economic independence as an agricultural ili with the end of the whaling ships" (Takemoto 1975:25).

The depopulation of Maunalua by the mid-19th century preceded and facilitated the replacement of traditional Hawaiian land use with ranching and commercial fishing.

C. Mid-1800s to 1900

After the mid-1800s, Maunalua became predominantly ranch land for the next 80 years. Land ownership and land use rights were complicated through much of this period by numerous leases, frequent litigation, and the frequent deaths of land holders and/or lease-holders (Takemoto 1975:27).

Prior to the Mahele, the land of Maunalua was part of the lands held by the premier. Ka`ahumanu had passed the land and title to Kinau, who had in turn passed them on to Victoria Kamāmalu (Takemoto 1975:20). On April 7, 1854 Kamāmalu was granted Land Commission Award 7713, the land title to Maunalua. No *kuleana* land grants were awarded within this overall land award--another indication that population may have declined drastically by the time of the Mahele.

In 1856 all of Maunalua, except for Kuapā Fishpond, was leased to William Webster--the government employee and land surveyor who had surveyed the region five years earlier and produced the region's first map. Webster used the land for ranching, adding it to the other lease hold land he used for ranching in Waimanalo. When Webster died in 1864, the remainder of his Maunalua lease was taken over by Manuel Paiko, who was leasing the adjacent lands at Kuliouou. Maunalua continued to be used as ranch land.

Victoria Kamāmalu mortgaged her lands in Maunalua to Charles Bishop in order to pay off accumulated debts. When Kamāmalu died in 1866 it fell to her father, Kekuanaoa, to pay off the debts and the mortgage in order to be awarded the title to Maunalua (Jones 1986:22-23; Takemoto 1975:21). With the death of Kekuanaoa, the land of Maunalua passed into the hands of Lot Kamehameha V. When Lot died without a will, the probate court decided that his half sister, Ruth Ke'elikolani, would inherit his entire land holdings. When Ruth died in 1883 Maunalua was passed down to Bernice Pauahi Bishop. Bernice Pauahi Bishop was the last surviving Kamehameha and as a result inherited all of the Kamehameha lands, becoming the largest land-holder in the Kingdom of Hawaii. When Bernice Pauahi Bishop died in 1884 her husband Charles Bishop, followed her will and set up the Bishop Estate Trust, of which Maunalua became a part (Takemoto 1975:21-23). Maunalua continued to be used as ranch land throughout this period.

It was at this time that a second map of Maunalua was completed by Geo. E. Gresley Jackson (1884). This map shows roads circling Kuapā Fishpond. A road extends between Kamehame Ridge and Koko crater, crosses the coastal flat of Wawamalu, climbs Kealakupapa Valley to Waimanalo Gap and descends the gap into Waimanalo. The structural remains of Kaupo Village are visible *makai* of this roadway in Waimanalo. No other indications of habitation are made on the map--suggesting that by 1884 habitation in eastern Maunalua was slight to non-existent.

The fishing rights to the Kuapā Fishpond and Maunalua's offshore fishing grounds were important resources that were leased out to various parties from the time Victoria Kamāmalu obtained the land title to Maunalua. The Kuapā Fishpond was leased in 1856 at a high yearly sum for the time, indicating the value placed on fishing resources. The offshore fishing rights were leased and sold to various individuals until 1900 when Territorial and United States legislation began deconstructing the legality of the traditional idea of ownership of offshore fishing rights. It is clear from the high lease rates for the time period that the fishing resources of Maunalua were productive and highly valued (Takemoto 1975:21-27).

The population of Maunalua continued to decline during this period. Tax records show that in 1855 there were 38 households with 98 people living in Maunalua. This fairly large population owned 68 houses as well as horses, mules and dogs. In 1860 Maunalua had lost over half its population and held only 16 households. By 1870 there were only 6 households and population bottomed out in 1880 with only 4 households. This depopulation is undoubtedly the result, at least in part, of resettlement of inhabitants in more economically viable areas. These decreases in the number of households were accompanied by reductions in the numbers of horses, mules, and dogs--indicating a relatively impoverished population compared to the 1855 inhabitants of Maunalua. In 1900 population had risen once again, however it is clear that traditional settlement and land use had been largely, if not entirely, replaced by ranching and commercial fishing activities (Takemoto 1975:24-25). Takemoto notes:

By 1900, Maunalua Ranch and Yit Lee Company, who owned a big fishing complex, employed most of the inhabitants. Maunalua Ranch had over 1500 head of cattle, ten oxen, sixty-four horses, thirteen mules and six pigs roaming throughout Maunalua. Five Chinese families were working for the Damons [who held the lease for Maunalua at the time], probably as ranch hands. Five other Chinese families worked for Yit Lee. The eight Hawaiian families on the land, including one blind man, were truck farmers of some sort since all but two owned carts used for bringing goods to Honolulu . . . Thus by the turn of the century most families in the ili were ranch hands, fishermen, or truck farmers living a relatively quiet life in an area which would be considered the country. (1975:25)

Maunalua from 1850 to 1900 witnessed the decline of traditional Hawaiian settlement, land use, and population and the rise of commercial ranching and fishing. Although no Kuleana land grants were awarded within Maunalua during the Mahele--the 1855 tax records indicate that it was populated and appeared to enjoy a degree of prosperity. Maunalua's prosperity and population drastically declined until 1900, when tax records show an upturn of both based on commercial fishing and ranching.

D. Early 1900's to Present

Maunalua became more closely tied to the modern world after 1900. In 1906 the luxury steamer Manchuria ran aground off Waimanalo. The result of the outcry that followed was the construction, in 1909, of the Makapu`u lighthouse--which then and now contains the largest magnifying lens of all U. S. lighthouses (Dean 1991:Part I4). In 1914, the Marconi Wireless Telegraph Company of America built a receiving station on the slopes of Koko Head on land that was leased from the Bishop Estate for 50 years. The station was built to receive messages 24-hours a day from San Francisco and was billed as the most powerful wireless station in the world. The station linked the Hawaiian islands with the mainland and Asia on a 24-hour basis. Early in the 1920s the Marconi station was taken over by the Radio Corporation of America and was used for transmission (Takemoto 1975:28).

Agriculture, in the form of truck farming and an agricultural school, increased in Maunalua after the turn of the century. The Kamehameha School for boys ran an agricultural farm in Hahaione Valley with 45 acres for vegetables and 200 acres for livestock (Jones 1996:27). Truck farmers increased in number in the area as well, providing hogs, flowers, lettuce and other vegetables for the growing population of Honolulu. Much of the area around Kuapā Fishpond was occupied by truck farmers by the 1930s and this type of farming would expand (Kelly et. al 1984:47). By 1959 this truck farming community of over 170 families was producing 60 percent of Oahu's hogs and a similar percentage of flowers and lettuce (Takemoto 1975:28).

Maunalua Ranch controlled most of the land of Maunalua outside of the Kuapā Pond. From its inception in 1900 until it closed in 1926 over 1500 cattle made up the ranch's stock (Jones 1996:23). In 1920 the Maunalua Ranch sublet parcels to the Honolulu Honey Company, Ltd., which had 8 apiaries. The ranch land also had charcoal makers harvesting kiawe during this time (Kelly et. al 1984:47).

The Maunalua Ranch Co. closed in 1926 and their subletors were given direct leases from the land owner, Bishop Estate. Alan Davis and others were given a ranching lease in 1932. They started the Wawamalu Ranch. The Davis home and swimming pool were constructed near

the shore at Ka'ili'ili, while various ranch infrastructure, such as corrals, wall, and water tanks was situated at Kaloko (Kelly et. al 1984:56).

The Alan Davis ranch house at Kaloko was the easternmost private residence on O'ahu during the 1930s and 1940s, until its destruction in the 1946 tsunami. Ranching didn't prove profitable enough, so the subleasing of Maunalua land for truck and flower farms, chicken farms, and piggeries was expanded. Pig farmers and other were pushed out of the Hawaii Kai area and moved over the hill back of Koko Crater and into Kalama and Wawamalu Valleys. As farmers were evicted from other communities, such as when Wai'alaie-Kamala, Wailupe, and Niu were urbanized, more of them moved to Maunalua with short-term leases. (Kelly et. al 1984:56)

The construction of Kalaniana'ole Highway between Kuli'ou'ou and Waimanalo was begun in the late 1920s and was finally completed in 1932, when the last stretch of road from Waimanalo to Wawamalu was completed. The bridge at Wawamalu was constructed in 1931. The coastal portions of this alignment of Kalaniana'ole Highway from Sandy Beach to Kaloko were washed out by the 1946 tsunami. The highway was reconstructed slightly further inland, with a new bridge at Wawamalu, between 1946 and 1948.

Prior to the completion of Kalaniana'ole Highway through Maunalua, there were unimproved roads that provided access to this easternmost part of O'ahu. The USGS Makapu'u quad map from the survey of 1908-1913 (1922) shows unimproved roads going both makai and mauka of the Kuapā Fishpond. The *makai* road forked, providing access to Hanauma Bay and the makai portion of Koko Crater. The *mauka* road passes Hahaione, runs between Kamehame ridge and Koko crater and provides access to the Sandy Beach/Blow Hole area, the Wawamalu/Kaho'ohaihai area, and to the lighthouse at Makapu'u. These roads offered access to the primary resources/destinations within Maunalua at this time period (just after the turn of the century). Roads to the coast undoubtedly were used for fishing and other marine exploitation. The roads also provided access for ranching, facilitating the construction and maintenance of needed infrastructure such as water tanks and fences. Finally, the lighthouse access road was important for communication with and resupply of the lighthouse caretaker and his family living out on Makapu'u Head.

The USGS Makapu'u Quad. from the survey of 1927-1928 (1928) shows how access had changed in Maunalua between the years 1913 and 1928. Paved roads extended to Hanauma Bay. The unimproved road from Hanauma Bay had been extended along the coastal trail, *makai* of Koko crater, to the Sandy Beach area. This road would be paved over to complete the southeastern portion of Kalaniana'ole Highway in only a few years.

In 1942 the Federal Aviation Administration receiver station was constructed in Wawamalu at the current location of the makai portions of the Hawaii Kai golf course. This facility allowed point to point communication with stations as far away as Samoa, Guam, and Tokyo. Known as the "Kaloko" facility it was moved to Moloka'i in 1962 (Kelly et al. 1984:56).

The tsunami of 1946 was one of many that undoubtedly affected the coastal sections of Maunalua to varying degrees. Before 1946, tsunami of similar scale occurred in 1837, April 2, 1868, and 1877. These tsunami are among the nearly 40 tsunami that were recorded to hit Hawaii, with effects ranging from none to severe, between 1819 and 1946 (Shepard et al.

1950:400-1). Tsunami are known to scour coastlines by both washing material landward with the inrushing waves as well as washing material seaward with the retreating waves. Coastal vegetation, coastline formation, and the force of the wave are some of the factors that influence the destructive force of tsunami (Shepard et al. 1950:460-2).

Between 1932 and 1946, as has been noted earlier, ranching was less and less economically viable at Wawamalu Ranch. Increasingly ranch land was sublet to truck farmers, who were being displaced by the expansion eastward of Honolulu and its suburbs. This trend continued until 1959 when fewer leases were awarded and old leases were not renewed.

In 1959 the Hawaii Kai Development Corporation, a subsidiary of Kaiser Industries, received the development rights for Bishop Estate property in Maunalua and the development of the planned community of Hawaii Kai began (Kelly et. al 1984:vii). Kuapā Fishpond was dredged to a consistent depth of six feet and dredge material was used to construct and reclaim land masses in the former swampy landscape. Large portions of former fishpond and ranch land were graded and prepared for construction of housing developments, golf courses, and shopping centers.

III. HISTORIC DOCUMENTATION OF THE PROJECT AREA

The present Kalanianaʻole Highway project area and the Hawaii Kai Development surround Kuapā Pond, a traditional Hawaiian fishpond formerly known as Keahupua-o-Maunalua. The pond's later name reflects its typology. It is a *loko kuapā*, defined by Apple and Kikuchi (1975: 9) as “a fishpond of littoral water whose side or sides facing the sea consist of a stone or coral wall usually containing one or more sluice gates.” More specifically, it is a “*loko kuapā Ib*” “whose wall completely closes the mouth of a bay.”

There is some question as to the antiquity of this pond. The account of Portlock's 1786 visit (Portlock 1968:70) suggests an open communication to the sea with no sea wall (as Takemoto et al. 1975:15 understand it) yet the wall was definitely there at the time of the visits of the missionaries Gilbert Farquar Mathison in 1821 (Mathison 1825) and Levi Chamberlain (1826, 1828). According to the pioneering Hawaiian historian Samuel Kamakau, Kamehameha I “worked at the fishponds at ...Maunalua” (Kamakau 1961:192) and it has been suggested that “the initial construction of the *kuapā* wall across the bay may have been prompted by Kamehameha” (Putzi et al. 1998:20).

Indicative of its importance, stewardship of the pond stayed close to the Kamehameha dynasty passing to the governor of Oʻahu Kuihelani, Kamehameha's wives Kalola and Kaʻahumanu, his daughter Kīnaʻu and grand-daughter Victoria Kamāmalu, Kekūanaʻōa, Lot Kamehameha V, Ruth Keʻelikōlani and Bernice Pauahi Bishop. Upon her death in 1884 the fishpond became part of Bishop Estate.

The fishpond was leased to Chun Hoon in the mid 1800s and appears to have been operated by a succession of parties of mostly Chinese and Japanese ancestry. Kuapā pond is understood to have been stocked and tended up to 1960 (Takemoto et al. 1975:31). While specific records do not appear to be available, fishpond production on Oʻahu was overwhelmingly of mullet (*amaʻama*, *Mugil cephalus*) until circa 1959 by which time the relative importance of *ʻōʻio* (*Albula vulpes*), *awa* (*Chanos chanos*) and *ulua* (*Carangidae*) had increased significantly.

Contemporary scholarship on Hawaiian fishponds has emphasized the role of these ponds in supporting Hawaiian social structure over their role in aquacultural production. Clearly Kuapā pond was a prize possession of the Hawaiian aristocracy. On the other hand, if the commoners of Maunalua did have some access to the production, given the size of the pond (reported as 523 acres in 1851) Kuapā could have been a major source of food given the probable small resident population. The pond was also a storied place or *wahi pana* with legendary associations as the abode of jilted lovers and the *moʻo* (water spirit) named Lau-kapu who looked after the fish, the chief and the people of the area.

Historic photographs and maps dating back to the early decades of the 20th century document that century's changes to Kuapā pond and the development of the present Kalanianaʻole Highway corridor, including the present project area.

As noted in Section III above, construction of the Kalanianaʻole Highway segment between Kuliʻouʻou and Waimanalo was started in the late 1920s and completed in 1932. The original Maunalua landscape before the highway and the present Hawaii Kai development is shown on an aerial photograph of 1921 (Figure 3). The photograph reveals only a narrow causeway likely

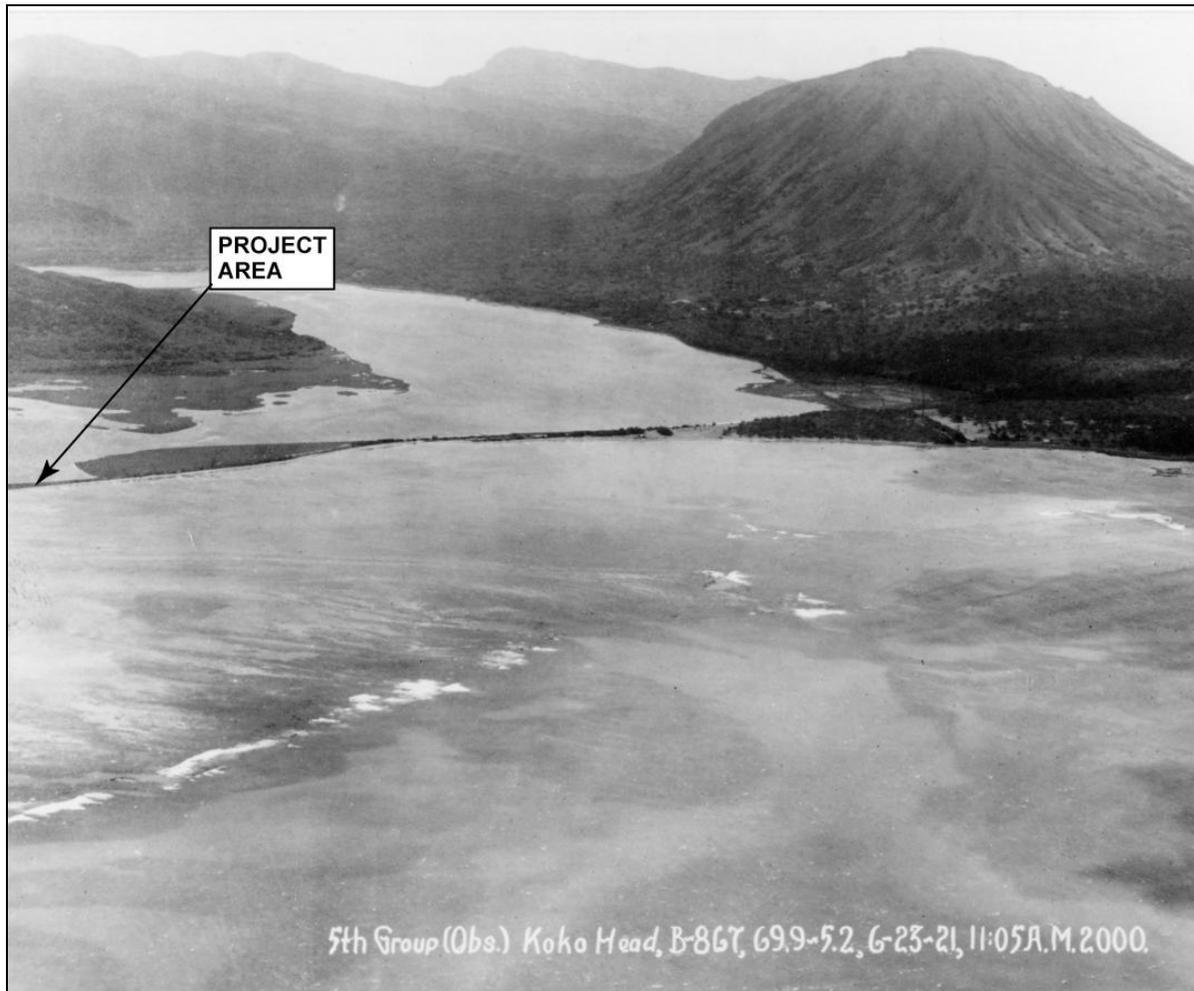


Figure 3. 1921 aerial photograph with location of present project area indicated within Kuapā Pond (Hawai'i State Archives)

including the wall of Kuapā pond in place of the flat expanse of land comprising the present landscape. The location of the present project area is actually within Kuapā pond, itself.

Further confirmation of that location is revealed on a 1927-28 USGS map showing the landscape following the construction of Kalanianaʻole Highway but before the Hawaii Kai development (Figure 4). The present alignments of Kalanianaʻole Highway and Keāhole Street are plotted on the map. Clearly, the present project area is situated within Kuapā Pond.

As noted in Section III above, the development of the Hawaii Kai community – on 6,000 acres of Bishop Estate land – began in 1959. The community was the brain child of the industrialist Henry J. Kaiser. It was designed around a marina created from Kuapā Pond which was extensively dredged. According to a privately-printed history of Hawaiʻi Kai by Lambreth Hancock, an executive in the Kaiser organization, “dredging Kuapā Pond and creating the Hawaiʻi Kai Marina was really the major task in creating Hawaii Kai...” The pond was dredged by two methods: “the narrow waterways [of the pond] by dragline and the more open areas by suction dredge.”

The Kalanianaʻole Highway project area only begins to appear on maps after the mid-1960s (see Figure 1, USGS map above). These maps also indicate that the modern Kalanianaʻole Highway corridor which includes the present project area is a realignment of the original highway corridor created in the 1920s.

That the project area was created by landfill during the development of Hawaii Kai is documented by an aerial photograph of 1968 (Figure 5). The photograph shows the entire land mass – including the project area – that extends across the center of the Kuapā Pond to be newly-created fill land.

The present project area corridor was created in the mid-1990s during the Phase II Widening Project on Kalanianaʻole Highway that extended 1.4 miles from East Halemaʻumaʻu Road to Keāhole Street.

Thus, based on the historic documentation, the land under the present project area is a man-made construction originating in the 1960s during the development of Hawaii Kai and the filling of Kuapā Pond. The highway itself, between Keāhole Street and Hawaii Kai Drive, is a modern development of the 1990s that has replaced the original highway constructed in the late 1920s.

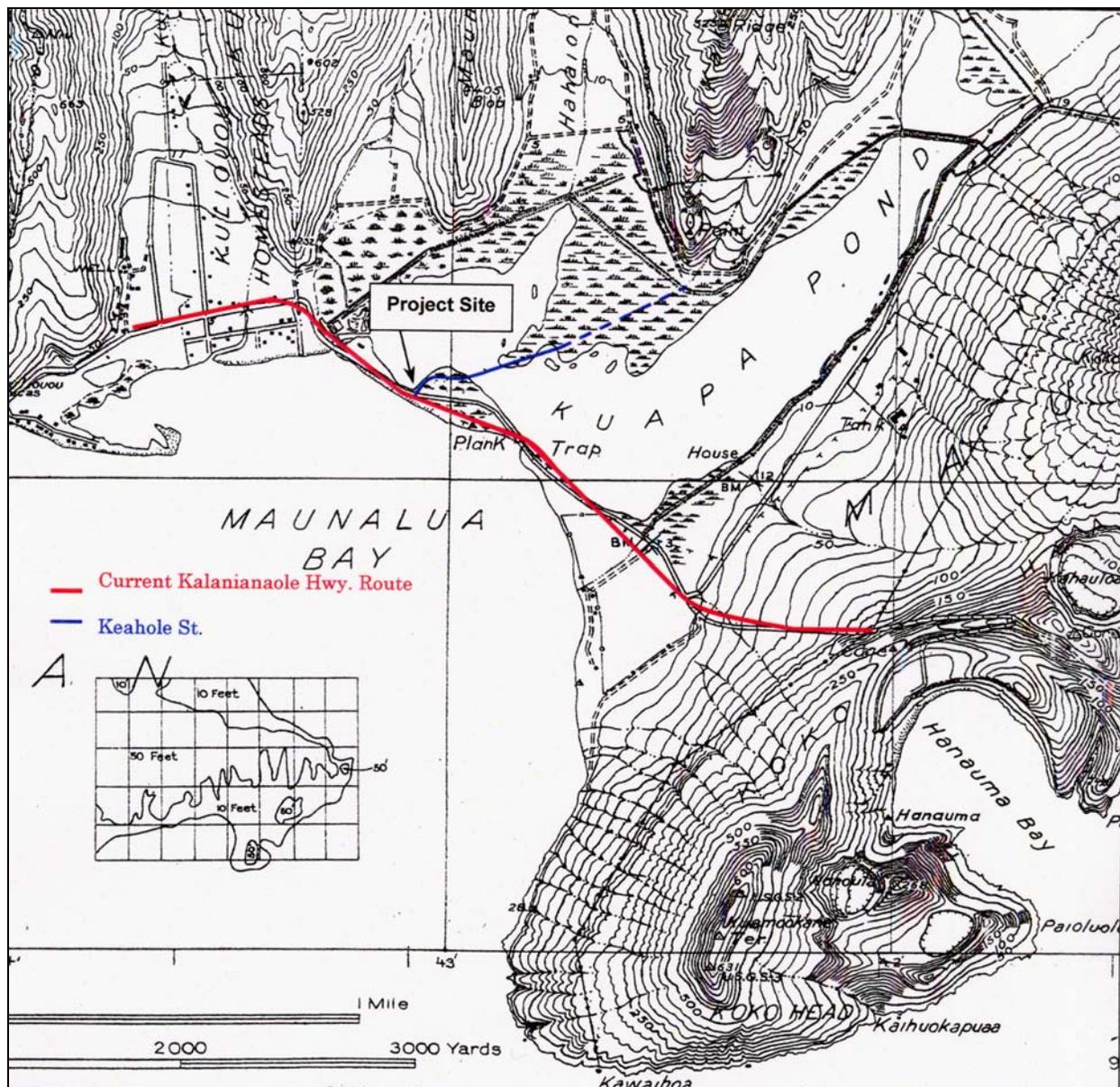


Figure 4. 1927-28 USGS map showing with location of present project area and routes of present Kalaniana'ole Highway and Keāhole Street indicated



Figure 5. 1968 aerial photograph with location of present project area indicated on new fill land within Kuapā Pond (Bishop Museum Archives)

IV. PREVIOUS ARCHAEOLOGICAL RESEARCH

A. Archaeological Studies of Maunalua

Extensive summaries of previous archaeology conducted within Maunalua Ahupua‘a already exist. The following summary is based on information presented in McAllister (1933), Kelly et al. (1984), Walker et al. (1996), and Jones (1996).

The first archaeological survey in Maunalua was conducted by McAllister (1933) in 1930. As part of his nine-month, island-wide, archaeological survey of O‘ahu, McAllister located, mapped, and described 49 archaeological sites in the Maunalua region. In the Maunalua region, McAllister described sites of traditional Hawaiian origin as well as historic sites related to activities such as ranching and road construction. The site and functional types documented by McAllister are typical of traditional Hawaiian coastal settlements, which generally had habitation near the marine resources being exploited, religious structures for supernatural assistance in fishing and other daily activities, canoe houses near natural landing sites, and burials and agricultural features adjacent to the settlement.

The historic or historically utilized sites described by McAllister were sometimes traditional sites or features that were utilized or re-utilized, sometimes with changes in function or form, in the historic period. McAllister noted that Maunalua was traditionally considered an *ili* (subdivision) of Waimanalo and the path up Kealakupapa Valley and down Waimanalo gap was the obvious route connecting the regions (McAllister 1933:59).

It is clear from McAllister's site descriptions that settlement in the region prior to European contact was well established--if not exactly thriving. The archaeological documentation by McAllister correlates well with the mythological and traditional accounts of settlement in the area--i.e. the area was populated by coastal dwellers who harvested the sea and grew their crops on the plains and into the valleys of Maunalua. From historical accounts and documents it is evident that change came about in the region with western contact. This change was noted by McAllister in terms of changing structural forms, rock stealing from older habitation sites, and the building of large enclosures for ranching.

In western Maunalua McAllister also recorded sites, a large number located near the Kuapā fishpond that was transformed into the Hawaii Kai residential area. These sites included heiau, burial caves, rock shelters, petroglyphs, and agricultural fields.

Emory and Sinoto (1961) report the results of University of Hawai‘i excavations in site 03, a natural rockshelter at the northeastern corner of the beach at Hanauma Bay (carried out in 1952). The majority of recovered artifacts were unsurprisingly related to fishing and the creation and maintenance of fishing gear. The midden consisted primarily of marine shell and fish bone, although a small amount of dog, pig, and bird bone were also recorded within the shelter. The remains of hearths were also recorded.

In 1966 students from the University of Hawai‘i excavated and conducted limited surface survey at the Kaloko point region (Wallace et al. 1966). This research was carried out in McAllister's high site density area around the Kaloko point area. Excavations uncovered no structural remains, with the exception of hearths. The artifact and midden deposits characterize the occupation as marine oriented. Surface survey brought to light a few structural remnants--

drastically reduced in number from those reported by McAllister. The work made clear that road construction and the 1946 tsunami had heavily impacted the archaeological deposits since they were reported by McAllister in 1930 (Wallace et. al 1966:6).

Further University of Hawai'i excavations and survey were carried out at the western and southern margins of Kaluanui Ridge at the mouth of Hahaione Valley. Conducted over a period of three years, these investigations documented features from more than one related complex. Occupation of these features spanned from the late prehistoric to early 20th century (Bayard 1969:1). Features included rock shelters, house platforms, stone "cairns", and a stone enclosure. Bayard also conducted excavations at site 50-80-15-2908, the Hawaii Kai rock shelter. Three dates ranging from AD 1330 to 1800 were obtained (Bayard 1965: 7-8, cited in Jones 1996:181).

Sponsored by the US Army Corps of Engineers, Anne Takemoto wrote a cultural and historical overview for the Kuapā fishpond area in western Maunaloa. This report included a literature and document search, an analysis of place names, oral traditions, and 19th century historic accounts, summaries of previous archaeological investigations, as well as recommendations on how additional information might be obtained with further research (Takemoto 1975). The mythological and historical resources of the region are highlighted. Regarding the archaeology of the region Takemoto notes:

The quantity and quality of the archaeological sites discovered in the area does not significantly help unfold the history of the Kuapa Pond region. It can be assumed that the area was not extremely populous and that its importance compared to other ahupua'a was marginal. (Takemoto 1975:4)

Takemoto further states in her conclusions: "Maunaloa and Kuliouou today have only a few archaeological sites still in existence. . . The sites McAllister found in the 1930's have been destroyed" (Takemoto 1975:32).

During the development of the Kuapā fishpond area into the residential neighborhood of Hawaii Kai, Hawaiian burial sites were discovered on Kaalakei Ridge and Maunaloa O Ahi Ridge (McCoy 1971 and Bevacqua 1972, respectively, cited in Jones 1996:12).

The area of Kaluanui received several archaeological investigations as the result of development plans. The land around Hawea heiau was systematically surveyed and, although previously bulldozed, 11 sites were recorded. The sites found included a historic habitation, caves, platforms, petroglyphs, and the possible remains of Hawea heiau (Price-Beggarly and McNeill 1985). Further work was conducted by Rosendahl, Inc. (PHRI) as part of an inventory survey within a 21-acre portion of the same approximately 36-acre Kaluanui parcel investigated by Price-Beggarly and McNeill. PHRI relocated sites and tested the "bedrock cavities" for cultural remains. Results were negative (Carlson and Rosendahl 1990).

In 1993 Cultural Surveys Hawai'i surveyed a 5-acre parcel along Hawaii Kai Drive just south of Kaluanui ridge at the site of the proposed Kaluanui Park. Re-location and limited sub-surface testing of sites found by McAllister, Bayard, and Price-Beggarly and McNeill was carried out. The fieldwork documented limited prehistoric subsurface deposits at site 50-80-15-2900 (described by Price-Beggarly and McNeill as a U-shape enclosure) and made several reinterpretations of previously described features. Excavations carried out by Cultural Surveys Hawai'i at site 2900 yielded a radiocarbon date of 1800-1940. This supports the interpretation

that the site was used in the historic period through Maunaloa's prominence in the "victualing trade" into the early 20th century (Folk et. al 1993).

The investigations at Kaluanui document archaeological resources which include habitations, burials, historic house-sites, petroglyphs, historic road-way remnants, and religious structures. The area was utilized from the prehistoric through the historic era. It is evident that modern development has greatly impacted the archaeological resources of the region.

Davis (1984) conducted excavations and reconstructions at the site of Pahua heiau. This work was carried out intermittently from the mid-1970s to 1985 by the Bishop Museum as part of a larger settlement pattern study of the region of southeast O`ahu.

In eastern Maunaloa, there have been a number of archaeological and cultural studies since the 1980s. In 1984 a "Cultural Resource Overview for the Queen's Beach Park Feasibility Study" was prepared for the Department of Parks and Recreation by Kelly, Kurashina, and Sinoto (1984). This study consisted of "a historical overview and assessment of the surface archaeological resources" for an area that included all of the current project area as well as the Kaloko peninsula and the coastline from Kapali o kamoia to Makapu`u Point (Kelly et al. 1984).

Kurashina and Sinoto wrote up the assessment of archaeological remains. In their field reconnaissance Kurashina and Sinoto could not relocate McAllister's sites 5-13 along the coast of the project area. They state that these sites were likely destroyed by the recent dredging, material stockpiling, and bulldozing from the Kaiser development plans--and by the devastating effects of the 1946 tsunami (Kelly et al. 1984:11). The only McAllister sites that were relocated consisted of sites 2 (a pile of stones with coral), 3 (historic road way), and the cement foundation/emplacement of the Malei stone--all within Kealakupapa Valley. Kurashina and Sinoto failed to detect structural remains of site 2--but did note the presence of coral on the valley slopes in the general vicinity of site 2. They suggest the stones of the structure were removed for construction of the adjacent military pill-boxes on the Makapu`u cliff face (Kelly et al. 1984:9). Related to the McAllister's site 3 paved roadway, they report seeing 11-15 foot wide sections of the stone paved road between the Coast Guard road and Makapu`u Lookout (Ibid.).

Kurashina and Sinoto located previously unrecorded sites: site T-1, T-2, T-3 and T-4. Site T-1 is a cave located on the coast between Kapali o Kamoia and Makapu`u Point. Site T-2 was the Davis Ranch swimming pool, at Ka`ili`ili peninsula, T-3 is a midden site on the Kaloko peninsula, and T-4 is the Davis Ranch boundary wall at Wawamalu Beach.

Barrera (1986) conducted archaeological reconnaissance on 30 acres between the Hawaii Kai Golf Course and Koko Crater. McAllister had recorded a house site (site 36) and terraces (site 37) in this area. No sites of any kind were located during the fieldwork, however. Barrera indicates this was due to modern ground disturbance.

Thirty-one acres of proposed golf course and subdivisions were surveyed by PHRI mauka of Sandy Beach (Spear 1987). No surface features were observed and shovel and auguring tests yielded no evidence of subsurface cultural deposits.

Shun (1988) carried out archaeological inventory survey on 26 acres on the southern portion of Kamehame ridge. No archaeological features were found, although numerous small caves and rock overhangs were observed within the project area. Also on Kamehame ridge, Cultural Surveys Hawai`i conducted inventory survey for the relocation of an electrical transmission line. Due to the steepness of the slope, survey was generally limited to pole

locations along the 8,400 foot transmission line. No archaeological sites were found (Borthwick and Hammatt 1991a). The archaeological survey for the proposed Kamehame Ridge Water Reservoir was also done by Cultural Surveys Hawaii. The reservoir site and the associated access roads contained no archaeological features (Borthwick and Hammatt 1991b).

Cultural Surveys Hawai'i conducted survey and subsurface testing for the proposed Fiber Optic Cable Landing at Sandy Beach Park. Although located in the suspected area of Wawamalu village, no archaeological features or deposits were found. This was due to the disturbed beach sediments in the project area (Borthwick and Hammatt 1992).

Archaeological Consultants of Hawaii conducted surface survey and subsurface testing for an extension to Sandy Beach Park at Wawamalu. No surface features were found and subsurface testing located no cultural deposits. Stratigraphy in the project area indicates that road construction (both the original and re-aligned Kalaniana'ole Highway) as well as the 1946 tsunami have removed "any traces of historic or prehistoric sites" (Kennedy and Denham 1992:1).

In 1990 State Historic Preservation Division officials were called to the naupaka-covered coastal dunes just northwest of Wawamalu Beach--just northeast of the boundary wall between the beach park and the former Davis Ranch. Approximately 30 m northwest of the water-line, off-road recreational vehicles had disturbed an in situ prehistoric burial (Kawachi and Smith 1990). This burial was located in the general area of the midden deposit (site T-3) recorded by Kelly, Kurashina, and Sinoto. They noted a gray stained area of compacted sand containing a disturbed stone alignment, marine shell midden, and basalt flakes. They suggest this may represent a prehistoric occupation floor (Kelly et al. 1984:14).

In 1992, as part of the feasibility study for the inclusion of the Makapu'u Head and Queen's Beach area within the State Parks System, Alan Carpenter did a field check of the Kealakupapa Road remnants (McAllister's site 3) (Carpenter 1992). Carpenter reports two sections of the road that could still be discerned. One section consisted of switchbacks (paved road surface with terraced road bed) extending down the steep cliff from Makapu'u Lookout towards Waimanalo. The second section is located in the same area described by Kelly, Kurashina, and Sinoto (1984) parallel to Kalaniana'ole Highway, just up slope of the lighthouse access road. Carpenter describes this section as "straight . . . conspicuously clear of large rocks and . . . very level . . . The sides of the road are roughly defined on the west by a border of stones and on the east by a rough boulder alignment modifying a natural ledge" (Carpenter 1992:5). He also describes the road as nearly devoid of flat paving stones and very much overgrown (Ibid.). From this description it appears that the mossrock pickers observed by Kelly in 1984 have continued to degraded the road remnant.

PHRI conducted an archaeological assessment of the Queen's Beach area in 1994. The report's primary objective was to "assess the potential impacts of proposed development upon any significant archaeological resources that might be present within the project area" (Walker et. al 1996:ii). Background historical document research and a review of previous archaeology together with one day of limited ground survey were the basis for this report. Three previously identified sites were relocated. Kelly, Kurashina, and Sinoto's site T-3 (midden deposit) at Wawamalu Beach and the 1931 Wawamalu bridge (Kelly et. al 1984) were relocated. McAllister's site 3, Kealakupapa Road was relocated and was described by Walker et al. (1996:11) as "a cleared zone within the kiawe, usually containing no vegetation other than

grasses or small shrubs. The road is relatively straight, and no curb stones or paving were visible." Kurashina and Sinoto recorded seeing stone paving along the road way in 1984 (Kelly et al. 1984:9). The PHRI assessment makes recommendations for a full inventory survey of the project with subsurface testing to locate any buried cultural deposits.

The most recent report within Maunalua Ahupua'a was completed by Aki Sinoto Consulting on a total of 375 acres in 9 separate parcels scattered about Maunalua (Jones 1996). The investigation consisted of surface survey and limited test excavations. Four of their parcels (Marina 1/Strip, Marina 4B, Golf Course 2/1A, and Kalama Valley) were found to be without archaeological or historic sites due to extensive prior disturbances. These disturbances included dredging and expansion of land masses with dredged material. The remaining 5 parcels, located in valleys and ridges contained 11 archaeological sites consisting of 71 features. However, even within the 5 parcels containing archaeological sites, there has been ample modern disturbance from road construction, bulldozing, and grading.

The 11 sites found within the 5 parcels consist almost exclusively of temporary habitation and/or activity areas, burials, and agricultural features. One of the most common site types reported is a modified rock shelter. These natural shelters are found along the ridges within the project area parcels. They provide ready-made shelter from sun, wind, and rain. They are also located adjacent to the agricultural land in the valley and drainage bottoms. These agricultural areas were celebrated in historical and traditional accounts for their sweet potato production (Summers and Sterling 1978:257). The rock shelters contain basalt lithic scatters, volcanic glass, kukui endocarps, marine shell midden, and fish and bird bone. These midden deposits are consistent with recurrent, temporary habitation and the use of the sites as activity areas, e.g. lithic reduction and tool manufacture. The elevation and distance from the ocean of these sites, in most cases, allowed good accessibility to agricultural land as well as marine resources.

The rock shelters are also the sites of human burials. Interment in lava tubes and bedrock cavities was a common practice in prehistoric and early historic Hawai'i. Jones (1996) described incomplete burials and bundle burials which often appeared disturbed or redeposited.

The agricultural features reported by Jones are located in the vicinity of Kamilonui and Kamiloiki valleys. Site 4950 is an extensive agricultural complex that incorporates "much of the traditional Hawaiian types of irrigation and agricultural systems in its construction" (Jones 1996:183).

Five radiocarbon dates were obtained from charcoal samples excavated within the 11 sites recorded within the project area. Three rockshelter features were dated to the precontact period. Sites 4941-8, 4945-1, and 4951-2 were dated to 1655 AD, 1475 AD, and 1665 AD, respectively. Site 4942-1, a rock shelter located in the Mau'uwai parcel was dated to the late historic period (1880 AD). This late date is credited to ranching activity. The large agricultural complex, site 4950, was dated to AD 1900-1930. Jones suggests the complex "represents the efforts of Chinese lessees common in Kamilonui Valley from the 1860s to modern times (1996:160).

In summary, the previous archaeology of Maunalua documents a progression of changes which transformed the landscape. Traditional Hawaiian settlement consisted of coastal settlement (house sites, ko'a, canoe sheds, and heiau) with agricultural features in the plains and valleys behind the coast. Natural rock shelters were utilized as temporary habitations or activity areas as well as interment places for the dead. Heiau were constructed in the interior. The large

Kuapā fishpond was constructed and was another location of settlement. Trails connected these settlements.

Unfortunately, the small number of radiocarbon dates from Maunalua offer little towards settlement chronology. We do know that utilization of the ridge rock shelters was occurring by at least the 15th century (Jones 1996:180). Bayard's excavations at the Hawaii Kai rock shelter yielded three dates spanning AD 1330-1800 (Bayard 1965: 7-8, cited in Jones 1996:181). From these dates it is clear that settlement occurred by the 14th century, possibly earlier.

In the historic era traditional settlement gave way to ranching and cash-crop farming. More permanent coastal settlement was replaced in many areas with recurrent temporary habitation. Agricultural fields were maintained in some areas, and abandoned and incorporated into ranch lands in others. The 1946 tsunami was a major destructive force. In the 1960s and 1970s, the development of Hawaii Kai drastically changed large portions of Maunalua--including the current project area.

B. Archaeological Study of the Project Area

In the mid-1990s, the present project area was the subject of archaeological monitoring during the Phase II Widening of Kalaniana'ole Highway Project from East Halema'uma'u Road to Keāhole Street (Putzi et al. 1998). The highway widening project extended 1.4 miles from Kuli'ou'ou Ahupua'a to Maunalua Ahupua'a.

Both human burial and non-burial sites were documented during the project. Seven burial sites (50-80-15-4837, 4838, 4840, 4841, 4938, 4939, and 5084) containing 40 human burials were encountered (Putzi et al. 1998:i). Non-burial features, grouped into four sites (50-80-15-5083, 4733, 4841, and 4694), included: historic trash pits with associated features; a pig interment; fire pits; postholes, and cooking/midden/trash pits (Ibid.).

All sites were encountered in Jaucus sand deposits in Kuli'ou'ou Ahupua'a. No sites were encountered within Maunalua Ahupua'a, including the present project area between Hawaii Kai Drive and Keāhole Street.

V. FIELD INSPECTION FINDINGS

Field inspection of the Kalanianaʻole Highway project area was conducted on May 8, 2005 by Rodney Chiogioji, B.A. under the general supervision of Hallett H. Hammatt, Ph.D. The inspection focused on the *mauka* side of the highway right-of-way and the adjacent parcel between Keāhole Street and Hawaii Kai Drive (Figures 6 & 7).

The field inspection confirmed that Kalanianaʻole Highway between Keāhole Street and Hawaii Kai Drive is a modern, multi-lane divided roadway. Construction of the current highway corridor in the 1960s and subsequent improvement projects have long eliminated any surface historic properties of archaeological concern within the highway right-of-way and vicinity. This would include any surface remnants of the original Kalanianaʻole Highway alignment dating from the Territorial period.

The adjacent parcel (TMK 3-9-17) on the *mauka* side of the highway was observed to comprise a flat expanse of grass lawn with plantings of mature trees including: wiliwili (*Erythrina sandwicensis*), hau (*Hibiscus tiliaceus*), milo (*Thespesia populnea*), and coconut (*Cocos nucifera*). No surface historic properties of archaeological concern were observed in the parcel. Additionally, no evidence of possible subsurface cultural deposits was observed.



Figure 6. *Mauka* side of Kalaniana'ole Highway and adjacent parcel; view to northwest



Figure 7. *Mauka* side of Kalaniana'ole Highway and adjacent parcel; view to southeast

VI. SUMMARY AND RECOMMENDATIONS

The historic documentation presented in this report – including historic maps and photographs – indicates that the present Kalanianaʻole Highway alignment between Keāhole Street and Hawaii Kai Drive sits on landfill deposited within Kuapā pond – a traditional Hawaiian fishpond – in the 1960s during the construction of the Hawaii Kai development. It is thus unlikely that any subsurface historic properties are present beneath the highway, particularly on its *mauka* side where the improvement project is planned. Additionally, in light of the extensive dredging within the pond itself during the Hawaii Kai development, it is unlikely that any of the original pond deposits remain undisturbed beneath the project area.

In the mid-1990s during archaeological monitoring for the Phase II Widening of Kalanianaʻole Highway Project from East Halemaʻumaʻu Road to Keāhole Street that included the current project area, no historic properties were encountered between Keāhole Street and Hawaii Kai Drive. All properties documented during that project – including human burials and non-burial sites – were encountered in Jaucus sand deposits beneath the highway corridor in Kuliʻouʻou Ahupuaʻa to the northwest of the current project area.

Based on the above findings, it is recommended that no further archaeological investigation is warranted.

It should be noted, however, that historic properties – such as traditional Hawaiian and historic artifacts, and human remains – are occasionally encountered in landfill materials. As a precautionary measure, personnel involved in highway improvement activities in the project area should be informed that the State Historic Preservation Division must be notified concerning any potential historic properties encountered during the project.

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Cultural Impact Evaluation
for a Highway Improvement Project on an approximately 305-meter long
section of Kalaniana'ole Highway between Keāhole Street and Hawaii Kai
Drive, Maunaloa Ahupua'a, Kona District, O'ahu Island

TMK (1) 3-9-17:20

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Prepared for
Kimura International, Inc.

Cultural Surveys Hawai'i, Inc.
(CSH Job Code: MAUN 23)
July 2005

MANAGEMENT SUMMARY

Title	Cultural impact evaluation for a highway improvement project on an approximately 305-meter (1000 ft.) long section of the <i>mauka</i> (East) side of Kalanianaʻole Highway, between Keāhole Street and Hawaii Kai Drive, Maunaloa Ahupuaʻa, Kona District, Oʻahu Island (TMK (1) 3-9-17:20)
Date	July 2005
Project Number	Cultural Surveys Hawaiʻi Inc. (CSH) Job Code: MAUN 23
Project Agencies	State of Hawaiʻi Department of Health / Office of Environmental Quality Control (DOH / OEQC)
Land Jurisdiction	State (HDOT)
Project Funding	FHWA, HDOT
Project Location and Investigation Boundaries	Oʻahu, Kona, Maunaloa, TMK (1) 3-9-17:20, 1998 USGS 1:24,000 Honolulu Quadrangle. This project extends approximately 300 meters. The current investigation focused on the <i>mauka</i> (east) side of the Kalanianaʻole Highway right-of-way (ROW) and its immediate vicinity.
Project Description	The project’s purpose is to improve operational efficiency of the Kalanianaʻole Highway and Keāhole Street intersection. Roadway improvements will be made on the <i>mauka</i> side of Kalanianaʻole Highway (Honolulu-bound) between Hawaii Kai Drive and Keāhole Street. The project will add an exclusive right-turn lane from Keāhole Street onto Kalanianaʻole Highway (Honolulu-bound) to facilitate traffic flow. It will also relocate the <i>mauka</i> sidewalk and bike lane, and relocate all utilities on the <i>mauka</i> side of the highway.
Document Purpose	The project requires compliance with the State of Hawaiʻi environmental review process [Hawaiʻi Revised Statutes (HRS) Chapter 343], which requires consideration of a proposed project’s effect on traditional cultural practices. At the request of Kimura International, Inc., CSH undertook this cultural impact evaluation study to provide information pertinent to the assessment of the proposed project’s cultural impacts. This document is intended to support the project’s state environmental review. It provides documentation of the project’s consultation efforts per the OEQC’s <i>Guidelines for Assessing Cultural Impacts</i> . A companion archaeological literature review and field inspection study (Chiogioji and Hammatt 2005) has been prepared to facilitate the project’s planning and support the project’s historic preservation compliance. Both studies will support the project’s historic preservation consultation effort.
Consultation Efforts	Hawaiian organizations, agencies and community representatives were contacted in order to identify native Hawaiian cultural resources, beliefs and practices associated with the project area that might be impacted by highway improvement project. The entities consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs, the Oʻahu Island Burial Council, and Hui Mālama I Nā Kūpuna O Hawaiʻi Nei.
Summary of	The present Kalanianaʻole Highway alignment between Keāhole Street

<p>Findings</p>	<p>and Hawaii Kai Drive sits on landfill deposited within Kuapā pond – a traditional Hawaiian fishpond – in the 1960s during the construction of the Hawaii Kai development. It is thus unlikely that any subsurface historic properties are present beneath the highway, particularly on its <i>mauka</i> side where the improvement project is planned. Additionally, in light of the extensive dredging within the pond itself during the Hawaii Kai development, it is unlikely that any of the original pond deposits remain undisturbed beneath the project area.</p> <p>The project area contains no surface or subsurface cultural sites or historic properties. No contemporary or continuing cultural practices occur within the project area.</p> <p>Mr. Halealoha Ayau of Hui Mālama I Nā Kūpuna O Hawai‘i Nei recalls that human burials were encountered during a Kalaniana‘ole Highway widening project in the 1990s and suggests that “additional unmarked Hawaiian burial sites will be impacted by this current project.” All burials documented during that widening project (which included the current project area) (Putzi et al. 1998) were encountered in undisturbed Jaucus sand deposits in Kuli‘ou‘ou Ahupua‘a. Significantly no burials were encountered along Kalaniana‘ole Highway in Maunalua Ahupua‘a, including the current project area, where the highway sits on modern landfill.</p> <p>Given the negative results of past archaeological monitoring and the modern creation of the project area landform in the 1960s, it is unlikely that <i>in situ</i> human interments are present in the project area.</p>
<p>Cultural Impact Recommendations</p>	<p>The Kalaniana‘ole Highway improvement project between Keāhole Street and Hawaii Kai Drive will have minimal impact upon native Hawaiian cultural resources, beliefs and practices.</p> <p>It should be noted, however, that historic properties – such as traditional Hawaiian and historic artifacts, and fragmented or isolated human remains – are occasionally encountered in landfill materials. As a precautionary measure, personnel involved in highway improvement activities in the project area should be informed that the State Historic Preservation Division must be notified concerning any potential historic properties encountered during the project.</p>

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I. INTRODUCTION

A. Project Background

At the request of Kimura International, Inc., Cultural Surveys Hawai‘i has completed a cultural impact evaluation for a highway improvement project on an approximately 305-meter (1000 ft.) long section of the *mauka* (East) side of Kalaniana‘ole Highway, between Keāhole Street and Hawai‘i Kai Drive, in Hawai‘i Kai, Maunaloa Ahupua‘a, Kona District, O‘ahu (TMK: 3-9-17:20) (Figures 1 – 4).

This section of Kalaniana‘ole Highway is owned by the State of Hawai‘i and maintained by the City and County of Honolulu.

The project’s purpose is to improve operational efficiency of the Kalaniana‘ole Highway and Keāhole Street intersection. Roadway improvements will be made on the *mauka* side of Kalaniana‘ole Highway (Honolulu-bound) between Hawaii Kai Drive and Keāhole Street. The project will add an exclusive right-turn lane from Keāhole Street onto Kalaniana‘ole Highway (Honolulu-bound) to facilitate traffic flow. It will also relocate the *mauka* sidewalk and bike lane, and relocate all utilities on the *mauka* side of the highway.

The project requires compliance with the State of Hawai‘i environmental review process [Hawai‘i Revised Statutes (HRS) Chapter 343], which requires consideration of a proposed project’s effect on traditional cultural practices. At the request of Kimura International, Inc., CSH undertook this cultural impact evaluation study to provide information pertinent to the assessment of the proposed project’s cultural impacts. This document is intended to support the project’s state environmental review. It provides documentation of the project’s consultation efforts per the OEQC’s *Guidelines for Assessing Cultural Impacts*.

A companion archaeological literature review and field inspection study (Chiogioji and Hammatt 2005) has been prepared to facilitate the project’s planning and support the project’s historic preservation compliance.

Both studies will support the project’s historic preservation consultation effort.

B. Scope-of-Work

The scope of work for this investigation includes:

- 1) Examination of historical documents, Land Commission Awards, and 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 general region as it may allow us to reconstruct traditional land use activities and identify and describe the cultural resources, practices, and beliefs associated with the area prior to construction.

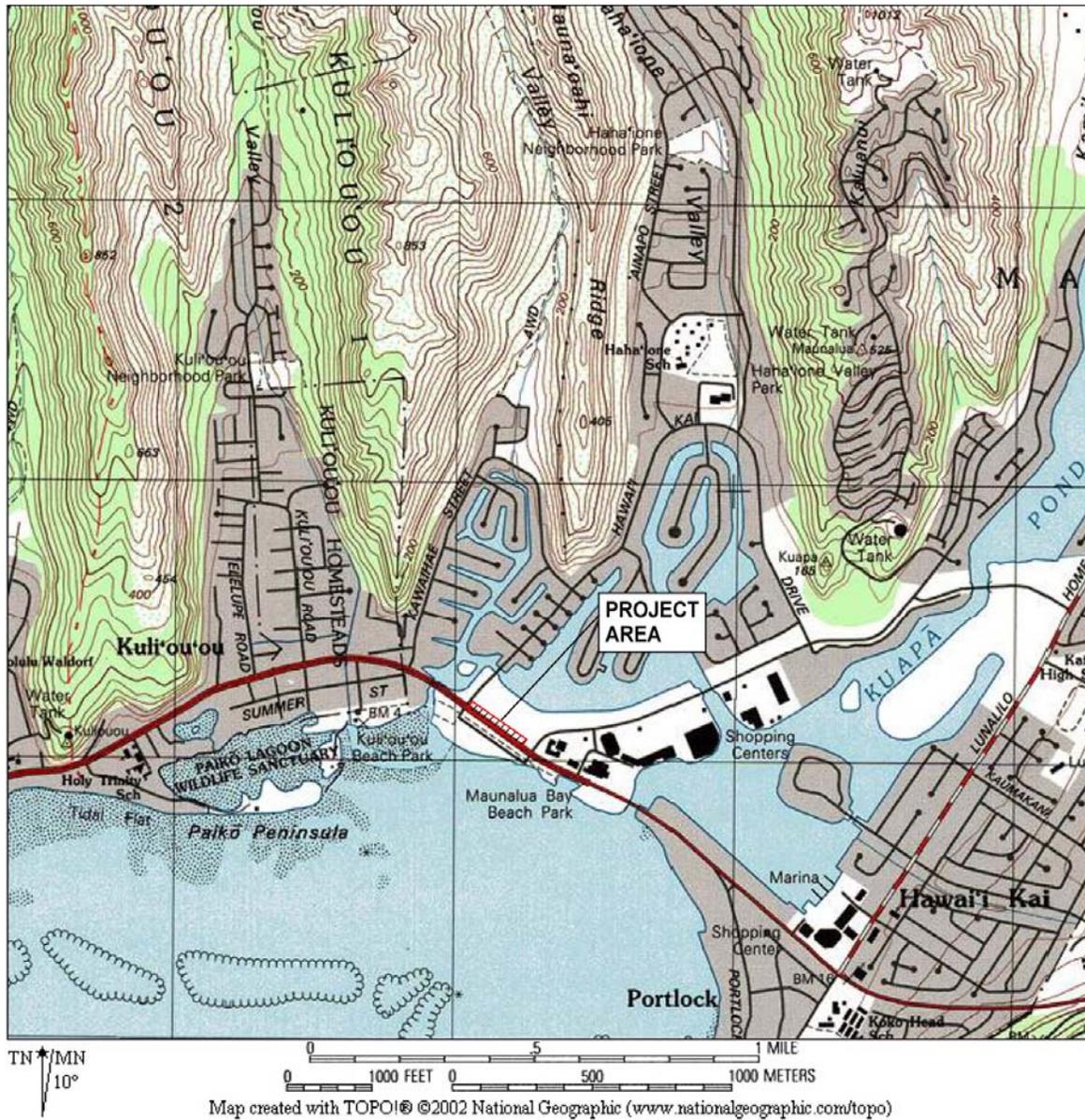


Figure 1. Portion of USGS 7.5 Minute Series Topographic Map, Koko Head Quadrangle, showing project area location

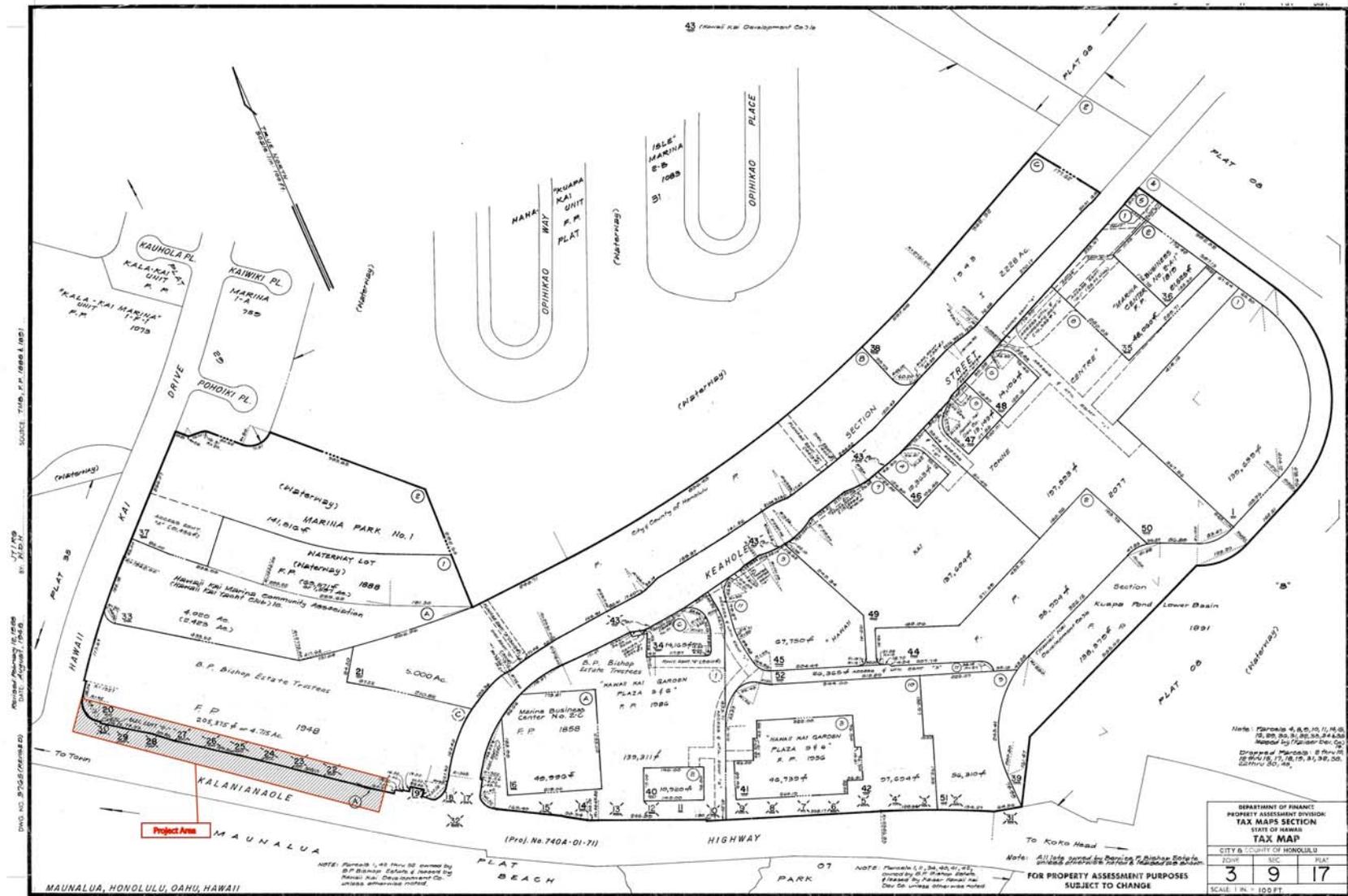


Figure 2. Tax map (TMK 3-9-17) showing project area location



Figure 3. *Mauka* side of Kalaniana'ole Highway and adjacent parcel; view to northwest



Figure 4. *Mauka* side of Kalaniana'ole Highway and adjacent parcel; view to southeast

- 3) Contact organizations and individuals knowledgeable about the historic and traditional practices in the project area and region by letter and telephone.
- 4) Preparation of a report on items 1-3 summarizing the information gathered related to traditional practices and land use. The report assesses the impact of the proposed action on the cultural practices and any features identified.

C. Methods

Historical background research included study of archival sources, Land Commission Awards, historic maps and photographs, as well as a review of past archaeological research in Maunalua Ahupua‘a to construct a history of land use and to assess the potential for the presence of historic properties within the project area.

Hawaiian organizations, agencies and community representatives were contacted in order to identify native Hawaiian cultural resources, beliefs and practices associated with the project area that might be impacted by highway improvement project. The entities consulted included the State Historic Preservation Division (SHPD), the Office of Hawaiian Affairs, the O‘ahu Island Burial Council, and Hui Mālama I Nā Kūpuna O Hawai‘i Nei.

D. Natural Setting

The Kalaniana‘ole Highway corridor between Keāhole Street and Hawaii Kai – at 3ft. above mean sea level – traverses the coast of Maunalua Ahupua‘a *makai* of the extensive Hawaii Kai residential and commercial development. According to the O‘ahu soil survey (Foote et al. 1972) most of the present highway project area sits upon fill land. ***Only near Keāhole Street does the *makai* side of the highway sit upon a the *makai* side of the highway corridor at the Natural deposits of jaucus sand beneath the highway corridor in the vicinity occur only to the northwest in Kuli‘ou‘ou and to the southeast as the highway approaches Portlock Road. Annual rainfall in this area of O‘ahu is less than 1000 millimeters (40 inches) per year (Giambelluca, Nullet and Schroeder, 1986) falling predominantly in the winter months.

II. TRADITIONAL AND LEGENDARY ASSOCIATIONS OF MAUNALUA

The present project area is located in the Hawaiian land division of Maunaloa. In traditional Hawaiian times, Maunaloa Valley was an *'ili* of Waimanalo Ahupua'a in the Ko'olaupoko District. In 1859 Maunaloa became part of the Kona District as an *'ili* of Waikiki Ahupua'a (Takemoto et al. 1975). Subsequently Maunaloa was considered an *ahupua'a* itself.

The traditional Hawaiian past of Maunaloa has been well documented by the work of Marion Kelly (Kelly et al 1984) and Anne Takemoto (1975). The following is a brief overview of the mythological accounts and oral traditions of Maunaloa.

"Mauna-lua"--literally "two mountains" (Pukui et. al. 1981:149 -- probably refers to Koko Head and Koko Crater, the prominent volcano remnants that dominate the landscape. It seems only fitting that the mythology of a region named after its two prominent volcanoes would contain references to the volcano goddess Pele. The mythical activities of Pele and her youngest sister Hi'iaka are the basis for many of the landmarks and place names in Maunaloa (Takemoto 1975:6). According to tradition, Pele and her supernatural brothers and sisters came to Hawaii and began searching throughout the islands for a home. After investigating all of the islands, Pele eventually settled at Kilauea on the island of Hawai'i. Being the goddess of fire and volcanoes, Pele was in constant strife with the god of forests and growing things, Kamapua'a. Maunaloa, as a more arid region, would be the domain of Pele, and the adjacent windward region of Koolau would have been the domain of Kamapua'a (Kelly et. al 1984:23).

One mythical account of the inter-deity strife between Pele and Kamapua'a is tied to Koko crater. Pele was once attacked by Kamapua'a near Kalapana, Hawai'i. In order to save Pele from being raped, Pele's sister Hi'iaka sent her *kohe lele*, or flying vagina, as a lure to distract Kamapua'a and lead him away from the scene of the attack. The ploy worked and Kamapua'a followed the lure to Koko Crater, O'ahu, where it left an imprint, giving the volcano remnant its name, *Kohelepelepe*, literally, vagina labia minor. (Pukui and Elbert 1971:388; Pukui, Elbert, and Mookini 1974:115 cited in Kelly et. al 1984:23).

Another Maunaloa location specifically tied to Pele mythology was a stone called *Kawa'aopele*, "Pele's Canoe". Originally located on the Honolulu side of the Davis ranch house (at Kaloko), this rock had the mark from Pele's canoe when she landed after the Pele migration came to Maunaloa (Sterling and Summers 1978:260). The stone was washed away by the 1946 tsunami.

Pele battled and conquered *Namaka-o-Kaha'i*, another goddess. The *Namaka-o-Kaha'i* stone at Hanauma Bay was left by the defeated goddess--but the landmark has since disappeared. "The stone was covered with dregs of *awa*, a narcotic drink made by chewing roots and used in religious ceremonies, which gave the dark stone a florescent glow in the night" (Summers and Sterling 1962:46 cited in Takemoto 1975:6).

At the southern end of *Kapali o Kamo* stands the large geologic formation known as Pele's Chair or Pele's Throne. Clearly visible on its promontory, from a distance this natural formation looks like a throne and is said to be one of the places from which Pele departed O'ahu for other islands (James 1991:42).

Pele's youngest sister Hi'iaka, plays further roles in Maunaloa mythology. Before the 1946 tsunami, between Makapu'u Point and the Davis ranch house, were a set of stones. The story goes that the site of the "balancing stone" was made up of the lithified remains of a brother and sister from Maui who incurred the wrath of Hi'iaka. The woman was turned to stone first for wasting Hi'iaka's gift of an uhu fish. Her brother, in failing to reach his sister before the sun came up, was subsequently turned to stone (Sterling and Summers 1978:260).

Hi'iaka was also involved with two *kupua* (supernatural beings) associated with the Makapu'u area, Makapu'u and Malei. Makapu'u was a supernatural woman of frightening appearance because of her many glowing eyes [Makapu'u means literally 'hill beginning' or 'bulging eye' (Pukui et. al. 1981:142)]. In one account Hi'iaka was traveling to O'ahu in a canoe with companions. When the canoe passed Makapu'u Point and was nearing the shore at Waimanalo, the *kupua* Makapu'u was sighted on the beach by the men on board. Although Hi'iaka invited all to have a meal with her friend Makapu'u, the men were too frightened and only willing to land on the Kona side of Makapu'u Point where they left Hi'iaka as they hurried away. Hi'iaka had to walk to Makapu'u, who had prepared a meal for them (Sterling and Summers 1978:257-258). Legend has it that the *kupua* Makapu'u came from Kahiki with the famous priest Pa'ao (Sterling and Summers 1978:258, quoting Green 1926:21). Another legend identifies Makapu'u as one of two sisters that came to O'ahu with the Kaua'i chief, Moikeha when he came from Kahiki (Kelly et. al 1984:4).

Malei is another female *kupua* associated with the Makapu'u area. She "assumed various bodily forms" and was associated with the uhu fish (Sterling and Summers 1978:258). The Malei stone was originally placed in the Waimanalo Gap overlooking Makapu'u. According to one legend, the Malei stone was placed at Makapu'u by Ai'ai, the son of the famous fish god, Ku'ula (Kelly et. al 1984:4).

From Makapu'u to Hanauma Bay, the uhu fish multiplied under her [Malei's] care. When she was established on this land all the chiefs and commoners went to give offerings of leis made of lipoa seaweed. They were placed on the stone Malei with prayers. The fisherman were lucky on these beaches and Malei was happy with her leis of lipoa seaweed . . . The stone Malei remained there for a long time at Makapu'u. The fisherman of Waimanalo constantly ascended the cliff at Makapu'u. (Sterling and Summers 1978:259)

According to legend the Malei stone stood over Makapu'u until it was removed by John Cummings and taken to his house during the time of King Kalakaua. With Cummings' death the stone was returned only to be removed or thrown into the sea by a Makapu'u lighthouse keeper who died not long after (Kelly et. al 1984:4-5). By the time of McAllister's visit (1930) only a cement foundation remnant was visible at the previous location of the Malei stone (McAllister 1933:58-59).

Legend credits Hi'iaka with giving the *kupua* Makapu'u and Malei encouragement and advice. The region of Kealakipapa Valley and Makapu'u lacked vegetable foods, which had to be supplied from adjacent Waimanalo. Hi'iaka encouraged the legendary women Malei and Makapu'u to cultivate the plain by planting sweet potatoes to relieve their hunger (Sterling and Summers 1978:257-258).

Maunalua was traditionally "an ili of the ahupua'a of Waimanalo and originally belonged to Ko'olaupoko district" (Sterling and Summers 1978:257). As a part of Ko'olaupoko, Maunalua surely had a trail that connected it with Waimanalo. The easiest communication between these two regions would have been through Kealakupapa Valley and down the Waimanalo Gap. Kealakupapa means literally "paved road", the road from Wawamalu to Makapu'u (Pukui et. al. 1981:102). This name implies that the Kealakupapa road (McAllister's site 3) could possibly be of prehistoric origin. Pukui (cited in Sterling and Summers 1978:260) believed the road was pre-European. Described as Kealanuikipapa, Pukui states that "an ali'i who lived at Wawamalu had the road built. He made the people who annoyed him build the road".

III. MAUNALUA : HISTORICAL BACKGROUND

The history of Maunalua has been well documented by the work of Marion Kelly (Kelly et al 1984) and Anne Takemoto (1975). The following is an overview of Maunalua's history.

A. Early Historic Period

During the inter-island warfare that preceded Kamehameha's unification of the Hawaiian archipelago, Maunalua's natural harbors of Hanauma and Koko (Maunalua Bay) were considered vulnerable points in the defense of O'ahu. Alapai, the 18th century ali'i nui of the island of Hawai'i attempted an attack of O'ahu. After his warriors were driven back first at Waikiki, then at Waialae, and then at Koko, Alapai's troops were beaten a final time at Hanauma Bay (Kamakau, 1961:71 cited in Takemoto 1975:12). Following this successful defense of O'ahu, O'ahu's rulers maintained the rulership of their island for a number of years. However, in 1783, Kahekili, the King of Maui, defeated the forces of the ruler of O'ahu in a battle at Honolulu and took control of the island (Ibid.).

It was during the rule of Kahekili that the first Europeans landed and traded at Maunalua. On June 1st, 1786 the English ships King George and Queen Charlotte, under the commands of captains Nathaniel Portlock and George Dixon, respectively, anchored in Maunalua Bay. The next day in quest of water, Portlock and Dixon went ashore near Koko Head. They found a small, insufficient spring in the dry landscape 50 yards back from the coast--and were told that any substantial fresh water sources were a considerable distance westward. Traveling by boat northward from the first landing, Portlock and Dixon landed on a sand beach, where they were told that water sources were further to the west. Setting off on foot to the west along the beach with a guide, the landing party came up against a "salt water river" that stopped their progress along the coast. This salt water river is likely the waterway between Kuapā Fish Pond and Maunalua Bay (Takemoto 1975:13-15). Returning to the boats, the landing party experienced difficult passages through the reef and trouble with waves. The captains realized too great an effort would be required to water at this location. Water was eventually purchased around Diamond Head, in Honolulu (Ibid.).

Informants told Portlock that Honolulu was a more populous, more productive place where plenty of hogs and vegetables could be obtained. However, because Portlock already had his needed supply of water, the ships remained in Maunalua until June 5th (Ibid.). Portlock described the Maunalua landing site as follows: "the low land and vallies being in a high state of cultivation, and crowded with plantations of taro, sweet potatoes, sugar cane, &c. interspersed with a great number of cocoa-nut trees" (Portlock 1968:74 cited in Takemoto 1975:14).

Portlock and Dixon returned in November of the same year to a less hospitable welcome. Until King Kahekili's official visit the ships were placed under tabu and no commerce or visitors to the ships were allowed. A priest warned Portlock that Kahekili was considering attacking the ships. Kahekili was dissuaded by a demonstration of the power of the ship's guns. Following Kahekili's arms lesson, Portlock observed the demolition of a heiau on the shore--the same structure he had watched being constructed before his encounter with Kahekili. It appeared that Kahekili's plans for the structure were abandoned once he appraised the fighting potential of Portlock and Dixon's ships (Takemoto 1975:15).

Kahekili died in 1794, splitting his kingdom between his sons Kalanikupule and Kaeo. Kalanikupule briefly ruled O'ahu and Moloka'i before being defeated by Kamehameha in 1795

at the battle of Nuuanu. Following this conquest Kamehameha followed custom and made a tour of the island he had conquered. Concerned that the productivity of the land be restored rapidly after the disruption of war, Kamehameha is said to have worked on several fishponds during his tour, including the Kuapā Fishpond at Maunaloa. Kamehameha did this to demonstrate to his people the importance of hard work and productivity (Takemoto 1975:16). One account cited in Handy and Handy (1972:485) describes the route that Kamehameha took in his work tour of the O'ahu, ". . . Kamehameha and his followers left Kailua and proceeded on to Waimanalo. From Waimanalo they went to Makapu'u and from there to Honolulu".

Kamehameha gave the *'ili* of Maunaloa to his faithful warrior Kuihelani. However Kuihelani lost his lands due to the indiscretions of his wife and Maunaloa reverted to Kamehameha's control (Takemoto 1975:19). Kamehameha next gave Maunaloa to his father-in-law Ke'eamoku (father of Ka'ahumanu). Ke'eamoku died in an epidemic (thought to be cholera) that passed through Maunaloa in 1804 (Ibid.). The population of Maunaloa including the eastern coastal area of O'ahu, may have been reduced drastically during this epidemic (Schmitt 1968:24 cited in Kelly et. al 1984:25). Following Ke'eamoku's death the ownership of Maunaloa passed on to Ka'ahumanu, his daughter. It was during this period that the land ownership of Maunaloa became tied to the title of premier. Ka'ahumanu passed the land ownership and title of premier to Kinau, a daughter of Kamehameha. Kinau in turn passed on both the land of Maunaloa and the title of premier to her daughter, Victoria Kamāmalu (Takemoto 1975:20). It was Victoria Kamāmalu who secured the land title of the *'ili* of Maunaloa during the Mahele.

John 'Ī'i, a member of Kamehameha's court, visited Maunaloa sometime around 1810. Traveling aboard the ship Apuakehau from Honolulu to the island of Hawaii, 'Ī'i stopped at Kawaihoa--the landing at Maunaloa Bay that was a common stop-over point for inter-island and circle-island navigation at this time ('Ī'i 1983:108). It also discusses the old trails systems extant on O'ahu "about" the year 1810. Regarding the route to southeast O'ahu from Honolulu 'Ī'i notes several trails that met at "the sand and go along Keahia and so on to Maunaloa, to the sea of Koko, to Makapu'u, and so on" ('Ī'i 1983:94). Undoubtedly the route ran through Maunaloa, through Kealakupapa Valley, to Waimanalo via the cliff at the Waimanalo Gap. There are several accounts of early missionaries taking this route in their tours of O'ahu.

Gilbert Mathison most likely followed this same route during his excursion around the island of O'ahu in 1821. Within Maunaloa he noted the large salt water lake (Kuapā Fishpond) around which he saw scattered approximately 100 huts. The people of the area were described as fisherman (Takemoto 1975:17).

In July and August of 1826 Ka'ahumanu made a tour of the island of O'ahu to talk with her subjects and preach the new Christian religion. In her company was the missionary Hiram Bingham, along with 200-300 other people. Bingham described the journey as follows:

Availing myself of the facilities thus afforded for our work, I made the tour with them [Ka'ahumanu's entourage], employing a month to good advantage, giving my attention chiefly to preaching, and the care and establishment of schools, and reading the Scriptures . . . Several horses, two wagons, and two canoes, constituted the principal accommodations, as vehicles for parts of the company, much of the way. Most of the company traveled on foot, some making the whole circuit, of about one hundred and thirty miles, and some but smaller portions of it, as we

passed round from Honolulu to the east, north, west, and south, then to the east again . . . We spent a Sabbath at Kaneohe, and passed through Palikoolau . . . (Bingham 1847:294-295)

From this account it is clear that Ka'ahumanu's party passed through Maunalua and continued on through Waimanalo to reach Kāne'ohe, where, after spending the Sabbath, they crossed the Ko'olau Mountains via the Nu'uaniu Pali. Unfortunately, no mention was made of the settlement and population of Maunalua, or the Kealakupapa Road, although the party most certainly observed them. This testimony does indicate that this route around the southeast end of O'ahu was a commonly traveled one.

Levi Chamberlain made two tours of O'ahu (1826 and 1828) to inspect and bolster the newly founded mission schools. On Chamberlain's first trip around the island, he approached the settlement at Kuapā Fishpond (called Keawaawa) from Makapu'u. Chamberlain did address 30 people at what must have been a sizeable village at Kuapā Fishpond (Handy and Handy 1972:483). Chamberlain suggests that during his visit much of the population was away cutting sandalwood, although Maunalua had little in the way of sandalwood resources (Takemoto 1975:17). On his second trip, Chamberlain approached Maunalua from Waialae. His descriptions indicate Maunalua was once populous. However, based on the decrease in student enrollment in the mission school over a four-year period, the community was undergoing steady depopulation (Takemoto 1975:17-18).

During Chamberlain's first tour of O'ahu he described the road way or path at Kealakupapa leading down from the Waimanalo Gap (McAllister's site 3):

(Leaving Makapu'u to cross Maunalua) After descending gradually some distance over a raised walk formed of rocks and pieces of lava brought together for the natives the road took a turn in a west-south-west direction giving me the sea on the left and a ridge of barren hills on the right . . . (Levi Chamberlain, "Trip around Oahu in 1826" cited in Sterling and Summers 1978:260)

Once the sandalwood gave out, economic activities of Hawaiian settlements focused on the cultivation of crops that could be exchanged with the foreign sailing vessels--in particular those of the whaling industry which had its boom period from 1820-1850 (Jones 1996:20; Takemoto 1975:18). Maunalua was no exception. At least two settlements were active as anchorage and provisioning sites for foreign vessels in the early 19th century. Wawamalu village was located at Queen's Beach and exploited the famous sweet potato agricultural land of Kealakupapa Valley for cash/barter crops. At Kuapā Fishpond, Keawaawa village also raised trade crops for the whaling and trade vessels that anchored off Maunalua for provisions. Additionally:

According to the last surviving kama'āina of Maunalua, sweet potatoes were grown in the small valleys, such as Kamilonui, as well as on the coastal plain. The plain below Kamiloiki and Kealakupapa was known as Ke-kula-o-Kamauwai. This was the famous potato-planting place from which came the potatoes traded to ships that anchored off Hahaione in whaling days. The village at this place, traces of which may still be seen, was called Wawamalu. (Handy "Hawaiian Planter" Vol. I, p. 155 cited in Sterling and Summers 1978:257)

Another similar village was located in Waimanalo, at the current site of Sea Life Park. Referred to as Kaupo, its proper name according to an official Bishop Estate map was Koanapou

(McAllister 1933:193). Kelly (et. al 1984:25) suggests this village shared the cultivation lands of Kealakupapa Valley and coastal plain below with the inhabitants of Wawamalu, Kaho‘ohaihai, and Ka‘ili‘ili. Certainly the trail up the Makapu‘u cliff at the Waimanalo gap would have provided easy access to these agricultural lands. When McAllister visited the ruins of Kaupo/Koanapou in 1930 his informants said the village had been built during the small pox epidemic of 1853 (McAllister 1933:193). Kelly suggests, because of the site’s excellent location and resources for a traditional Hawaiian village, that the village was abandoned during the early part of the 19th century and only re-inhabited in 1853 during the small pox epidemic (Kelly et. al 1984:25).

In the early historic period, the victualing trade was the life's blood for many traditional Hawaiian settlements, including those at Maunalua. It maintained resident populations in areas that would have otherwise become depopulated under the dual effects of epidemics and the relocation of inhabitants to growing towns such as Honolulu (a fate that seems to have befallen Kaupo village). When the victualing trade gave out, settlement in these regions declined. By the early 1850s the hey-day of whaling was passing. In 1852 the Hawaiian government passed legislation requiring all foreign vessels to call at Honolulu where they could be taxed. This further reduced the number of ships that anchored at smaller landing sites such as those at Maunalua (Jones 1996:21; Takemoto 1975:20). "It is clear that Maunalua lost much of its population and economic independence as an agricultural ili with the end of the whaling ships" (Takemoto 1975:25).

The depopulation of Maunalua by the mid-19th century preceded and facilitated the replacement of traditional Hawaiian land use with ranching and commercial fishing.

B. Mid-1800s to 1900

After the mid-1800s, Maunalua became predominantly ranch land for the next 80 years. Land ownership and land use rights were complicated through much of this period by numerous leases, frequent litigation, and the frequent deaths of land holders and/or lease-holders (Takemoto 1975:27).

Prior to the Mahele, the land of Maunalua was part of the lands held by the premier. Ka`ahumanu had passed the land and title to Kinau, who had in turn passed them on to Victoria Kamāmalu (Takemoto 1975:20). On April 7, 1854 Kamāmalu was granted Land Commission Award 7713, the land title to Maunalua. No *kuleana* land grants were awarded within this overall land award--another indication that population may have declined drastically by the time of the Mahele.

In 1856 all of Maunalua, except for Kuapā Fishpond, was leased to William Webster--the government employee and land surveyor who had surveyed the region five years earlier and produced the region’s first map. Webster used the land for ranching, adding it to the other lease hold land he used for ranching in Waimanalo. When Webster died in 1864, the remainder of his Maunalua lease was taken over by Manuel Paiko, who was leasing the adjacent lands at Kuliouou. Maunalua continued to be used as ranch land.

Victoria Kamāmalu mortgaged her lands in Maunalua to Charles Bishop in order to pay off accumulated debts. When Kamāmalu died in 1866 it fell to her father, Kekuanaoa, to pay off the debts and the mortgage in order to be awarded the title to Maunalua (Jones 1986:22-23; Takemoto 1975:21). With the death of Kekuanaoa, the land of Maunalua passed into the hands of Lot Kamehameha V. When Lot died without a will, the probate court decided that his half

sister, Ruth Ke‘elikolani, would inherit his entire land holdings. When Ruth died in 1883 Maunalua was passed down to Bernice Pauahi Bishop. Bernice Pauahi Bishop was the last surviving Kamehameha and as a result inherited all of the Kamehameha lands, becoming the largest land-holder in the Kingdom of Hawaii. When Bernice Pauahi Bishop died in 1884 her husband Charles Bishop, followed her will and set up the Bishop Estate Trust, of which Maunalua became a part (Takemoto 1975:21-23). Maunalua continued to be used as ranch land throughout this period.

It was at this time that a second map of Maunalua was completed by Geo. E. Gresley Jackson (1884). This map shows roads circling Kuapā Fishpond. A road extends between Kamehame Ridge and Koko crater, crosses the coastal flat of Wawamalu, climbs Kealakupapa Valley to Waimanalo Gap and descends the gap into Waimanalo. The structural remains of Kaupo Village are visible *makai* of this roadway in Waimanalo. No other indications of habitation are made on the map--suggesting that by 1884 habitation in eastern Maunalua was slight to non-existent.

The fishing rights to the Kuapā Fishpond and Maunalua's offshore fishing grounds were important resources that were leased out to various parties from the time Victoria Kamāmalu obtained the land title to Maunalua. The Kuapā Fishpond was leased in 1856 at a high yearly sum for the time, indicating the value placed on fishing resources. The offshore fishing rights were leased and sold to various individuals until 1900 when Territorial and United States legislation began deconstructing the legality of the traditional idea of ownership of offshore fishing rights. It is clear from the high lease rates for the time period that the fishing resources of Maunalua were productive and highly valued (Takemoto 1975:21-27).

The population of Maunalua continued to decline during this period. Tax records show that in 1855 there were 38 households with 98 people living in Maunalua. This fairly large population owned 68 houses as well as horses, mules and dogs. In 1860 Maunalua had lost over half its population and held only 16 households. By 1870 there were only 6 households and population bottomed out in 1880 with only 4 households. This depopulation is undoubtedly the result, at least in part, of resettlement of inhabitants in more economically viable areas. These decreases in the number of households were accompanied by reductions in the numbers of horses, mules, and dogs--indicating a relatively impoverished population compared to the 1855 inhabitants of Maunalua. In 1900 population had risen once again, however it is clear that traditional settlement and land use had been largely, if not entirely, replaced by ranching and commercial fishing activities (Takemoto 1975:24-25). Takemoto notes:

By 1900, Maunalua Ranch and Yit Lee Company, who owned a big fishing complex, employed most of the inhabitants. Maunalua Ranch had over 1500 head of cattle, ten oxen, sixty-four horses, thirteen mules and six pigs roaming throughout Maunalua. Five Chinese families were working for the Damons [who held the lease for Maunalua at the time], probably as ranch hands. Five other Chinese families worked for Yit Lee. The eight Hawaiian families on the land, including one blind man, were truck farmers of some sort since all but two owned carts used for bringing goods to Honolulu . . . Thus by the turn of the century most families in the ili were ranch hands, fishermen, or truck farmers living a relatively quiet life in an area which would be considered the country. (1975:25)

Maunalua from 1850 to 1900 witnessed the decline of traditional Hawaiian settlement, land use, and population and the rise of commercial ranching and fishing. Although no Kuleana land grants were awarded within Maunalua during the Mahele--the 1855 tax records indicate that it

was populated and appeared to enjoy a degree of prosperity. Maunaloa's prosperity and population drastically declined until 1900, when tax records show an upturn of both based on commercial fishing and ranching.

C. Early 1900's to Present

Maunaloa became more closely tied to the modern world after 1900. In 1906 the luxury steamer *Manchuria* ran aground off Waimanalo. The result of the outcry that followed was the construction, in 1909, of the Makapu'u lighthouse--which then and now contains the largest magnifying lens of all U. S. lighthouses (Dean 1991:Part I4). In 1914, the Marconi Wireless Telegraph Company of America built a receiving station on the slopes of Koko Head on land that was leased from the Bishop Estate for 50 years. The station was built to receive messages 24-hours a day from San Francisco and was billed as the most powerful wireless station in the world. The station linked the Hawaiian islands with the mainland and Asia on a 24-hour basis. Early in the 1920s the Marconi station was taken over by the Radio Corporation of America and was used for transmission (Takemoto 1975:28).

Agriculture, in the form of truck farming and an agricultural school, increased in Maunaloa after the turn of the century. The Kamehameha School for boys ran an agricultural farm in Hahaione Valley with 45 acres for vegetables and 200 acres for livestock (Jones 1996:27). Truck farmers increased in number in the area as well, providing hogs, flowers, lettuce and other vegetables for the growing population of Honolulu. Much of the area around Kuapā Fishpond was occupied by truck farmers by the 1930s and this type of farming would expand (Kelly et. al 1984:47). By 1959 this truck farming community of over 170 families was producing 60 percent of Oahu's hogs and a similar percentage of flowers and lettuce (Takemoto 1975:28).

Maunaloa Ranch controlled most of the land of Maunaloa outside of the Kuapā Pond. From its inception in 1900 until it closed in 1926 over 1500 cattle made up the ranch's stock (Jones 1996:23). In 1920 the Maunaloa Ranch sublet parcels to the Honolulu Honey Company, Ltd., which had 8 apiaries. The ranch land also had charcoal makers harvesting kiawe during this time (Kelly et. al 1984:47).

The Maunaloa Ranch Co. closed in 1926 and their subletters were given direct leases from the land owner, Bishop Estate. Alan Davis and others were given a ranching lease in 1932. They started the Wawamalu Ranch. The Davis home and swimming pool were constructed near the shore at Ka'ili'ili, while various ranch infrastructure, such as corrals, wall, and water tanks was situated at Kaloko (Kelly et. al 1984:56).

The Alan Davis ranch house at Kaloko was the easternmost private residence on O'ahu during the 1930s and 1940s, until its destruction in the 1946 tsunami. Ranching didn't prove profitable enough, so the subleasing of Maunaloa land for truck and flower farms, chicken farms, and piggeries was expanded. Pig farmers and other were pushed out of the Hawaii Kai area and moved over the hill back of Koko Crater and into Kalama and Wawamalu Valleys. As farmers were evicted from other communities, such as when Wai'alae-Kamala, Wailupe, and Niu were urbanized, more of them moved to Maunaloa with short-term leases. (Kelly et. al 1984:56)

The construction of Kalaniana'ole Highway through Maunaloa was finally completed in 1932, when the last stretch of road from Waimanalo to Wawamalu was completed. The bridge at Wawamalu was constructed in 1931. The coastal portions of this alignment of Kalaniana'ole

Highway from Sandy Beach to Kaloko were washed out by the 1946 tsunami. The highway was reconstructed slightly further inland, with a new bridge at Wawamalu, between 1946 and 1948.

Prior to the completion of Kalanianaʻole Highway through Maunaloa, there were unimproved roads that provided access to this easternmost part of Oʻahu. The USGS Makapuʻu quad map from the survey of 1908-1913 (1922) shows unimproved roads going both makai and mauka of the Kuapā Fishpond. The *makai* road forked, providing access to Hanauma Bay and the makai portion of Koko Crater. The *mauka* road passes Hahaione, runs between Kamehame ridge and Koko crater and provides access to the Sandy Beach/Blow Hole area, the Wawamalu/Kahoʻohaihai area, and to the lighthouse at Makapuʻu. These roads offered access to the primary resources/destinations within Maunaloa at this time period (just after the turn of the century). Roads to the coast undoubtedly were used for fishing and other marine exploitation. The roads also provided access for ranching, facilitating the construction and maintenance of needed infrastructure such as water tanks and fences. Finally, the lighthouse access road was important for communication with and resupply of the lighthouse caretaker and his family living out on Makapuʻu Head.

The USGS Makapuʻu Quad. from the survey of 1927-1928 (1928) shows how access had changed in Maunaloa between the years 1913 and 1928. Paved roads extended to Hanauma Bay. The unimproved road from Hanauma Bay had been extended along the coastal trail, *makai* of Koko crater, to the Sandy Beach area. This road would be paved over to complete the southeastern portion of Kalanianaʻole Highway in only a few years.

In 1942 the Federal Aviation Administration receiver station was constructed in Wawamalu at the current location of the makai portions of the Hawaii Kai golf course. This facility allowed point to point communication with stations as far away as Samoa, Guam, and Tokyo. Known as the "Kaloko" facility it was moved to Molokaʻi in 1962 (Kelly et al. 1984:56).

The tsunami of 1946 was one of many that undoubtedly affected the coastal sections of Maunaloa to varying degrees. Before 1946, tsunami of similar scale occurred in 1837, April 2, 1868, and 1877. These tsunami are among the nearly 40 tsunami that were recorded to hit Hawaii, with effects ranging from none to severe, between 1819 and 1946 (Shepard et al. 1950:400-1). Tsunami are known to scour coastlines by both washing material landward with the inrushing waves as well as washing material seaward with the retreating waves. Coastal vegetation, coastline formation, and the force of the wave are some of the factors that influence the destructive force of tsunami (Shepard et al. 1950:460-2).

Between 1932 and 1946, as has been noted earlier, ranching was less and less economically viable at Wawamalu Ranch. Increasingly ranch land was sublet to truck farmers, who were being displaced by the expansion eastward of Honolulu and its suburbs. This trend continued until 1959 when fewer leases were awarded and old leases were not renewed.

In 1959 the Hawaii Kai Development Corporation, a subsidiary of Kaiser Industries, received the development rights for Bishop Estate property in Maunaloa and the development of the planned community of Hawaii Kai began (Kelly et. al 1984:vii). Kuapā Fishpond was dredged to a consistent depth of six feet and dredge material was used to construct and reclaim land masses in the former swampy landscape. Large portions of former fishpond and ranch land were graded and prepared for construction of housing developments, golf courses, and shopping centers.

IV. HISTORIC DOCUMENTATION OF THE PROJECT AREA

The present Kalanianaʻole Highway project area and the Hawaii Kai Development surround Kuapā Pond, a traditional Hawaiian fishpond formerly known as Keahupua-o-Maunaloa. The pond's later name reflects its typology. It is a *loko kuapā*, defined by Apple and Kikuchi (1975: 9) as “a fishpond of littoral water whose side or sides facing the sea consist of a stone or coral wall usually containing one or more sluice gates.” More specifically, it is a “*loko kuapā* Ib” “whose wall completely closes the mouth of a bay.”

There is some question as to the antiquity of this pond. The account of Portlock's 1786 visit (Portlock 1968:70) suggests an open communication to the sea with no sea wall (as Takemoto et al. 1975:15 understand it) yet the wall was definitely there at the time of the visits of the missionaries Gilbert Farquar Mathison in 1821 (Mathison 1825) and Levi Chamberlain (1826, 1828). According to the pioneering Hawaiian historian Samuel Kamakau, Kamehameha I “worked at the fishponds at ...Maunaloa” (Kamakau 1961:192) and it has been suggested that “the initial construction of the *kuapā* wall across the bay may have been prompted by Kamehameha” (Putzi et al. 1998:20).

Indicative of its importance, stewardship of the pond stayed close to the Kamehameha dynasty passing to the governor of Oʻahu Kuihelani, Kamehameha's wives Kalola and Kaʻahumanu, his daughter Kīnaʻu and grand-daughter Victoria Kamāmalu, Kekūanaʻōa, Lot Kamehameha V, Ruth Keʻelikōlani and Bernice Pauahi Bishop. Upon her death in 1884 the fishpond became part of Bishop Estate.

The fishpond was leased to Chun Hoon in the mid 1800s and appears to have been operated by a succession of parties of mostly Chinese and Japanese ancestry. Kuapā pond is understood to have been stocked and tended up to 1960 (Takemoto et al. 1975:31). While specific records do not appear to be available, fishpond production on Oʻahu was overwhelmingly of mullet (*amaʻama*, *Mugil cephalus*) until circa 1959 by which time the relative importance of *ʻōʻio* (*Albula vulpes*), *awa* (*Chanos chanos*) and *ulua* (*Carangidae*) had increased significantly.

Contemporary scholarship on Hawaiian fishponds has emphasized the role of these ponds in supporting Hawaiian social structure over their role in aquacultural production. Clearly Kuapā pond was a prize possession of the Hawaiian aristocracy. On the other hand, if the commoners of Maunaloa did have some access to the production, given the size of the pond (reported as 523 acres in 1851) Kuapā could have been a major source of food given the probable small resident population. The pond was also a storied place or *wahi pana* with legendary associations as the abode of jilted lovers and the *moʻo* (water spirit) named Lau-kapu who looked after the fish, the chief and the people of the area.

Historic photographs and maps dating back to the early decades of the 20th century document that century's changes to Kuapā pond and the development of the present Kalanianaʻole Highway corridor, including the present project area.

As noted in Section III above, construction of the Kalanianaʻole Highway segment between Kuliʻouʻou and Waimanalo was started in the late 1920s and completed in 1932. The original Maunaloa landscape before the highway and the present Hawaii Kai development is shown on an aerial photograph of 1921 (Figure 3). The photograph reveals only a narrow causeway likely



Figure 5. 1921 aerial photograph with location of present project area indicated within Kuapā Pond (Hawai'i State Archives)

including the wall of Kuapā pond in place of the flat expanse of land comprising the present landscape. The location of the present project area is actually within Kuapā pond, itself.

Further confirmation of that location is revealed on a 1927-28 USGS map showing the landscape following the construction of Kalanianaʻole Highway but before the Hawaii Kai development (Figure 4). The present alignments of Kalanianaʻole Highway and Keāhole Street are plotted on the map. Clearly, the present project area is situated within Kuapā Pond.

As noted in Section III above, the development of the Hawaii Kai community – on 6,000 acres of Bishop Estate land – began in 1959. The community was the brain child of the industrialist Henry J. Kaiser. It was designed around a marina created from Kuapā Pond which was extensively dredged. According to a privately-printed history of Hawaiʻi Kai by Lambreth Hancock, an executive in the Kaiser organization, “dredging Kuapā Pond and creating the Hawaiʻi Kai Marina was really the major task in creating Hawaii Kai...” The pond was dredged by two methods: “the narrow waterways [of the pond] by dragline and the more open areas by suction dredge.”

The Kalanianaʻole Highway project area only begins to appear on maps after the mid-1960s (see Figure 1, USGS map above). These maps also indicate that the modern Kalanianaʻole Highway corridor which includes the present project area is a realignment of the original highway corridor created in the 1920s.

That the project area was created by landfill during the development of Hawaii Kai is documented by an aerial photograph of 1968 (Figure 5). The photograph shows the entire land mass – including the project area – that extends across the center of the Kuapā Pond to be newly-created fill land.

The present project area corridor was created in the mid-1990s during the Phase II Widening Project on Kalanianaʻole Highway that extended 1.4 miles from East Halemaʻumaʻu Road to Keāhole Street.

Thus, based on the historic documentation, the land under the present project area is a man-made construction originating in the 1960s during the development of Hawaii Kai and the filling of Kuapā Pond. The highway itself, between Keāhole Street and Hawaii Kai Drive, is a modern development of the 1990s that has replaced the original highway constructed in the late 1920

s.

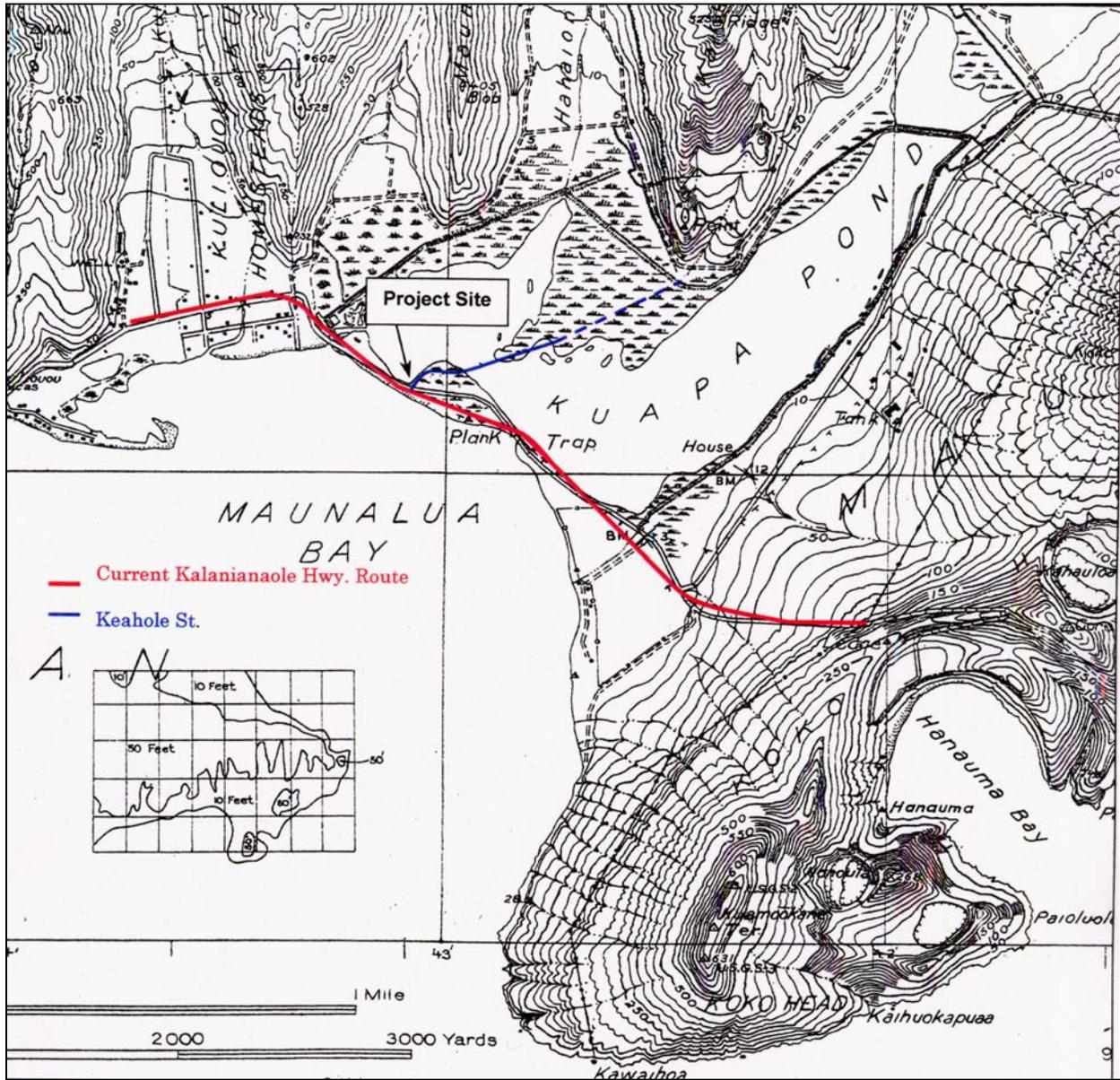


Figure 6. 1927-28 USGS map showing with location of present project area and routes of present Kalaniana'ole Highway and Keāhole Street indicated



Figure 7. 1968 aerial photograph with location of present project area indicated on new fill land within Kuapā Pond (Bishop Museum Archives)

V. ARCHAEOLOGICAL RESEARCH IN MAUNALUA AND THE PROJECT AREA

A. Archaeological Studies of Maunalua

Extensive summaries of previous archaeology conducted within Maunalua Ahupua‘a already exist. The following summary is based on information presented in McAllister (1933), Kelly et al. (1984), Walker et al. (1996), and Jones (1996).

The first archaeological survey in Maunalua was conducted by McAllister (1933) in 1930. As part of his nine-month, island-wide, archaeological survey of O‘ahu, McAllister located, mapped, and described 49 archaeological sites in the Maunalua region. In the Maunalua region, McAllister described sites of traditional Hawaiian origin as well as historic sites related to activities such as ranching and road construction. The site and functional types documented by McAllister are typical of traditional Hawaiian coastal settlements, which generally had habitation near the marine resources being exploited, religious structures for supernatural assistance in fishing and other daily activities, canoe houses near natural landing sites, and burials and agricultural features adjacent to the settlement.

The historic or historically utilized sites described by McAllister were sometimes traditional sites or features that were utilized or re-utilized, sometimes with changes in function or form, in the historic period. McAllister noted that Maunalua was traditionally considered an *ili* (subdivision) of Waimanalo and the path up Kealakupapa Valley and down Waimanalo gap was the obvious route connecting the regions (McAllister 1933:59).

It is clear from McAllister's site descriptions that settlement in the region prior to European contact was well established--if not exactly thriving. The archaeological documentation by McAllister correlates well with the mythological and traditional accounts of settlement in the area--i.e. the area was populated by coastal dwellers who harvested the sea and grew their crops on the plains and into the valleys of Maunalua. From historical accounts and documents it is evident that change came about in the region with western contact. This change was noted by McAllister in terms of changing structural forms, rock stealing from older habitation sites, and the building of large enclosures for ranching.

In western Maunalua McAllister also recorded sites, a large number located near the Kuapā fishpond that was transformed into the Hawaii Kai residential area. These sites included heiau, burial caves, rock shelters, petroglyphs, and agricultural fields.

Emory and Sinoto (1961) report the results of University of Hawai‘i excavations in site 03, a natural rockshelter at the northeastern corner of the beach at Hanauma Bay (carried out in 1952). The majority of recovered artifacts were unsurprisingly related to fishing and the creation and maintenance of fishing gear. The midden consisted primarily of marine shell and fish bone, although a small amount of dog, pig, and bird bone were also recorded within the shelter. The remains of hearths were also recorded.

In 1966 students from the University of Hawai‘i excavated and conducted limited surface survey at the Kaloko point region (Wallace et al. 1966). This research was carried out in McAllister's high site density area around the Kaloko point area. Excavations uncovered no structural remains, with the exception of hearths. The artifact and midden deposits characterize

the occupation as marine oriented. Surface survey brought to light a few structural remnants--drastically reduced in number from those reported by McAllister. The work made clear that road construction and the 1946 tsunami had heavily impacted the archaeological deposits since they were reported by McAllister in 1930 (Wallace et. al 1966:6).

Further University of Hawai'i excavations and survey were carried out at the western and southern margins of Kaluanui Ridge at the mouth of Hahaione Valley. Conducted over a period of three years, these investigations documented features from more than one related complex. Occupation of these features spanned from the late prehistoric to early 20th century (Bayard 1969:1). Features included rock shelters, house platforms, stone "cairns", and a stone enclosure. Bayard also conducted excavations at site 50-80-15-2908, the Hawaii Kai rock shelter. Three dates ranging from AD 1330 to 1800 were obtained (Bayard 1965: 7-8, cited in Jones 1996:181).

Sponsored by the US Army Corps of Engineers, Anne Takemoto wrote a cultural and historical overview for the Kuapā fishpond area in western Maunalua. This report included a literature and document search, an analysis of place names, oral traditions, and 19th century historic accounts, summaries of previous archaeological investigations, as well as recommendations on how additional information might be obtained with further research (Takemoto 1975). The mythological and historical resources of the region are highlighted. Regarding the archaeology of the region Takemoto notes:

The quantity and quality of the archaeological sites discovered in the area does not significantly help unfold the history of the Kuapa Pond region. It can be assumed that the area was not extremely populous and that its importance compared to other ahupua'a was marginal. (Takemoto 1975:4)

Takemoto further states in her conclusions: "Maunalua and Kuliouou today have only a few archaeological sites still in existence. . . The sites McAllister found in the 1930's have been destroyed" (Takemoto 1975:32).

During the development of the Kuapā fishpond area into the residential neighborhood of Hawaii Kai, Hawaiian burial sites were discovered on Kaalakei Ridge and Maunalua O Ahi Ridge (McCoy 1971 and Bevacqua 1972, respectively, cited in Jones 1996:12).

The area of Kaluanui received several archaeological investigations as the result of development plans. The land around Hawea heiau was systematically surveyed and, although previously bulldozed, 11 sites were recorded. The sites found included a historic habitation, caves, platforms, petroglyphs, and the possible remains of Hawea heiau (Price-Beggarly and McNeill 1985). Further work was conducted by Rosendahl, Inc. (PHRI) as part of an inventory survey within a 21-acre portion of the same approximately 36-acre Kaluanui parcel investigated by Price-Beggarly and McNeill. PHRI relocated sites and tested the "bedrock cavities" for cultural remains. Results were negative (Carlson and Rosendahl 1990).

In 1993 Cultural Surveys Hawai'i surveyed a 5-acre parcel along Hawaii Kai Drive just south of Kaluanui ridge at the site of the proposed Kaluanui Park. Re-location and limited sub-surface testing of sites found by McAllister, Bayard, and Price-Beggarly and McNeill was carried out. The fieldwork documented limited prehistoric subsurface deposits at site 50-80-15-2900 (described by Price-Beggarly and McNeill as a U-shape enclosure) and made several reinterpretations of previously described features. Excavations carried out by Cultural Surveys Hawai'i at site 2900 yielded a radiocarbon date of 1800-1940. This supports the interpretation

that the site was used in the historic period through Maunaloa's prominence in the "victualing trade" into the early 20th century (Folk et. al 1993).

The investigations at Kaluanui document archaeological resources which include habitations, burials, historic house-sites, petroglyphs, historic road-way remnants, and religious structures. The area was utilized from the prehistoric through the historic era. It is evident that modern development has greatly impacted the archaeological resources of the region.

Davis (1984) conducted excavations and reconstructions at the site of Pahua heiau. This work was carried out intermittently from the mid-1970s to 1985 by the Bishop Museum as part of a larger settlement pattern study of the region of southeast O`ahu.

In eastern Maunaloa, there have been a number of archaeological and cultural studies since the 1980s. In 1984 a "Cultural Resource Overview for the Queen's Beach Park Feasibility Study" was prepared for the Department of Parks and Recreation by Kelly, Kurashina, and Sinoto (1984). This study consisted of "a historical overview and assessment of the surface archaeological resources" for an area that included all of the current project area as well as the Kaloko peninsula and the coastline from Kapali o kamoia to Makapu`u Point (Kelly et al. 1984).

Kurashina and Sinoto wrote up the assessment of archaeological remains. In their field reconnaissance Kurashina and Sinoto could not relocate McAllister's sites 5-13 along the coast of the project area. They state that these sites were likely destroyed by the recent dredging, material stockpiling, and bulldozing from the Kaiser development plans--and by the devastating effects of the 1946 tsunami (Kelly et al. 1984:11). The only McAllister sites that were relocated consisted of sites 2 (a pile of stones with coral), 3 (historic road way), and the cement foundation/emplacement of the Malei stone--all within Kealakupapa Valley. Kurashina and Sinoto failed to detect structural remains of site 2--but did note the presence of coral on the valley slopes in the general vicinity of site 2. They suggest the stones of the structure were removed for construction of the adjacent military pill-boxes on the Makapu`u cliff face (Kelly et al. 1984:9). Related to the McAllister's site 3 paved roadway, they report seeing 11-15 foot wide sections of the stone paved road between the Coast Guard road and Makapu`u Lookout (Ibid.).

Kurashina and Sinoto located previously unrecorded sites: site T-1, T-2, T-3 and T-4. Site T-1 is a cave located on the coast between Kapali o Kamoia and Makapu`u Point. Site T-2 was the Davis Ranch swimming pool, at Ka`ili`ili peninsula, T-3 is a midden site on the Kaloko peninsula, and T-4 is the Davis Ranch boundary wall at Wawamalu Beach.

Barrera (1986) conducted archaeological reconnaissance on 30 acres between the Hawaii Kai Golf Course and Koko Crater. McAllister had recorded a house site (site 36) and terraces (site 37) in this area. No sites of any kind were located during the fieldwork, however. Barrera indicates this was due to modern ground disturbance.

Thirty-one acres of proposed golf course and subdivisions were surveyed by PHRI mauka of Sandy Beach (Spear 1987). No surface features were observed and shovel and auguring tests yielded no evidence of subsurface cultural deposits.

Shun (1988) carried out archaeological inventory survey on 26 acres on the southern portion of Kamehame ridge. No archaeological features were found, although numerous small caves and rock overhangs were observed within the project area. Also on Kamehame ridge, Cultural Surveys Hawai`i conducted inventory survey for the relocation of an electrical transmission line. Due to the steepness of the slope, survey was generally limited to pole

locations along the 8,400 foot transmission line. No archaeological sites were found (Borthwick and Hammatt 1991a). The archaeological survey for the proposed Kamehame Ridge Water Reservoir was also done by Cultural Surveys Hawaii. The reservoir site and the associated access roads contained no archaeological features (Borthwick and Hammatt 1991b).

Cultural Surveys Hawai'i conducted survey and subsurface testing for the proposed Fiber Optic Cable Landing at Sandy Beach Park. Although located in the suspected area of Wawamalu village, no archaeological features or deposits were found. This was due to the disturbed beach sediments in the project area (Borthwick and Hammatt 1992).

Archaeological Consultants of Hawaii conducted surface survey and subsurface testing for an extension to Sandy Beach Park at Wawamalu. No surface features were found and subsurface testing located no cultural deposits. Stratigraphy in the project area indicates that road construction (both the original and re-aligned Kalaniana'ole Highway) as well as the 1946 tsunami have removed "any traces of historic or prehistoric sites" (Kennedy and Denham 1992:1).

In 1990 State Historic Preservation Division officials were called to the naupaka-covered coastal dunes just northwest of Wawamalu Beach--just northeast of the boundary wall between the beach park and the former Davis Ranch. Approximately 30 m northwest of the water-line, off-road recreational vehicles had disturbed an in situ prehistoric burial (Kawachi and Smith 1990). This burial was located in the general area of the midden deposit (site T-3) recorded by Kelly, Kurashina, and Sinoto. They noted a gray stained area of compacted sand containing a disturbed stone alignment, marine shell midden, and basalt flakes. They suggest this may represent a prehistoric occupation floor (Kelly et al. 1984:14).

In 1992, as part of the feasibility study for the inclusion of the Makapu'u Head and Queen's Beach area within the State Parks System, Alan Carpenter did a field check of the Kealakupapa Road remnants (McAllister's site 3) (Carpenter 1992). Carpenter reports two sections of the road that could still be discerned. One section consisted of switchbacks (paved road surface with terraced road bed) extending down the steep cliff from Makapu'u Lookout towards Waimanalo. The second section is located in the same area described by Kelly, Kurashina, and Sinoto (1984) parallel to Kalaniana'ole Highway, just up slope of the lighthouse access road. Carpenter describes this section as "straight . . . conspicuously clear of large rocks and . . . very level . . . The sides of the road are roughly defined on the west by a border of stones and on the east by a rough boulder alignment modifying a natural ledge" (Carpenter 1992:5). He also describes the road as nearly devoid of flat paving stones and very much overgrown (Ibid.). From this description it appears that the mossrock pickers observed by Kelly in 1984 have continued to degraded the road remnant.

PHRI conducted an archaeological assessment of the Queen's Beach area in 1994. The report's primary objective was to "assess the potential impacts of proposed development upon any significant archaeological resources that might be present within the project area" (Walker et. al 1996:ii). Background historical document research and a review of previous archaeology together with one day of limited ground survey were the basis for this report. Three previously identified sites were relocated. Kelly, Kurashina, and Sinoto's site T-3 (midden deposit) at Wawamalu Beach and the 1931 Wawamalu bridge (Kelly et. al 1984) were relocated. McAllister's site 3, Kealakupapa Road was relocated and was described by Walker et al. (1996:11) as "a cleared zone within the kiawe, usually containing no vegetation other than

grasses or small shrubs. The road is relatively straight, and no curb stones or paving were visible." Kurashina and Sinoto recorded seeing stone paving along the road way in 1984 (Kelly et al. 1984:9). The PHRI assessment makes recommendations for a full inventory survey of the project with subsurface testing to locate any buried cultural deposits.

The most recent report within Maunaloa Ahupua'a was completed by Aki Sinoto Consulting on a total of 375 acres in 9 separate parcels scattered about Maunaloa (Jones 1996). The investigation consisted of surface survey and limited test excavations. Four of their parcels (Marina 1/Strip, Marina 4B, Golf Course 2/1A, and Kalama Valley) were found to be without archaeological or historic sites due to extensive prior disturbances. These disturbances included dredging and expansion of land masses with dredged material. The remaining 5 parcels, located in valleys and ridges contained 11 archaeological sites consisting of 71 features. However, even within the 5 parcels containing archaeological sites, there has been ample modern disturbance from road construction, bulldozing, and grading.

The 11 sites found within the 5 parcels consist almost exclusively of temporary habitation and/or activity areas, burials, and agricultural features. One of the most common site types reported is a modified rock shelter. These natural shelters are found along the ridges within the project area parcels. They provide ready-made shelter from sun, wind, and rain. They are also located adjacent to the agricultural land in the valley and drainage bottoms. These agricultural areas were celebrated in historical and traditional accounts for their sweet potato production (Summers and Sterling 1978:257). The rock shelters contain basalt lithic scatters, volcanic glass, kukui endocarps, marine shell midden, and fish and bird bone. These midden deposits are consistent with recurrent, temporary habitation and the use of the sites as activity areas, e.g. lithic reduction and tool manufacture. The elevation and distance from the ocean of these sites, in most cases, allowed good accessibility to agricultural land as well as marine resources.

The rock shelters are also the sites of human burials. Interment in lava tubes and bedrock cavities was a common practice in prehistoric and early historic Hawai'i. Jones (1996) described incomplete burials and bundle burials which often appeared disturbed or redeposited.

The agricultural features reported by Jones are located in the vicinity of Kamilonui and Kamiloiki valleys. Site 4950 is an extensive agricultural complex that incorporates "much of the traditional Hawaiian types of irrigation and agricultural systems in its construction" (Jones 1996:183).

Five radiocarbon dates were obtained from charcoal samples excavated within the 11 sites recorded within the project area. Three rockshelter features were dated to the precontact period. Sites 4941-8, 4945-1, and 4951-2 were dated to 1655 AD, 1475 AD, and 1665 AD, respectively. Site 4942-1, a rock shelter located in the Mau'uwai parcel was dated to the late historic period (1880 AD). This late date is credited to ranching activity. The large agricultural complex, site 4950, was dated to AD 1900-1930. Jones suggests the complex "represents the efforts of Chinese lessees common in Kamilonui Valley from the 1860s to modern times (1996:160).

In summary, the previous archaeology of Maunaloa documents a progression of changes which transformed the landscape. Traditional Hawaiian settlement consisted of coastal settlement (house sites, ko'a, canoe sheds, and heiau) with agricultural features in the plains and valleys behind the coast. Natural rock shelters were utilized as temporary habitations or activity areas as well as interment places for the dead. Heiau were constructed in the interior. The large

Kuapā fishpond was constructed and was another location of settlement. Trails connected these settlements.

Unfortunately, the small number of radiocarbon dates from Maunaloa offer little towards settlement chronology. We do know that utilization of the ridge rock shelters was occurring by at least the 15th century (Jones 1996:180). Bayard's excavations at the Hawaii Kai rock shelter yielded three dates spanning AD 1330-1800 (Bayard 1965: 7-8, cited in Jones 1996:181). From these dates it is clear that settlement occurred by the 14th century, possibly earlier.

In the historic era traditional settlement gave way to ranching and cash-crop farming. More permanent coastal settlement was replaced in many areas with recurrent temporary habitation. Agricultural fields were maintained in some areas, and abandoned and incorporated into ranch lands in others. The 1946 tsunami was a major destructive force. In the 1960s and 1970s, the development of Hawaii Kai drastically changed large portions of Maunaloa--including the current project area.

B. Archaeological Study of the Project Area

During the mid-1990s, the present project area was the subject of archaeological monitoring during the Phase II Widening of Kalaniana'ole Highway Project from East Halema'uma'u Road to Keāhole Street (Putzi et al. 1998). The highway widening project extended 1.4 miles from Kuli'ou'ou Ahupua'a to Maunaloa Ahupua'a.

Both human burial and non-burial sites were documented during the project. Seven burial sites (50-80-15-4837, 4838, 4840, 4841, 4938, 4939, and 5084) containing 40 human burials were encountered (Putzi et al. 1998:i). Non-burial features, grouped into four sites (50-80-15-5083, 4733, 4841, and 4694), included: historic trash pits with associated features; a pig interment; fire pits; postholes, and cooking/midden/trash pits (Ibid.).

All sites were encountered in Jaucus sand deposits in Kuli'ou'ou Ahupua'a. No sites were encountered within Maunaloa Ahupua'a, including the present project area between Hawaii Kai Drive and Keāhole Street.

VI. RESULTS OF COMMUNITY CONTACT PROCESS

Throughout the course of this evaluation, an effort was made to contact and consult with Hawaiian cultural organizations and government agencies which might have knowledge or and/or concerns about traditional cultural practices specifically related to the project area. This effort was made by letter, email and telephone. In all cases, contacts were given a summary of the historic background information that is presented in Section IV of this report. Also given were copies of the historic maps and photographs that are also presented in Section IV.

The individuals, organizations, and agencies attempted to be contacted and the results of any consultations are presented in the table below. More extensive responses were provided by Hui Mālama I Nā Kūpuna O Hawai‘i Nei and the Office of Hawaiian Affairs (OHA) and are presented in full below the table.

Table 1 Community Contact Table

Name	Background, Affiliation	Comments
Ayau, Halealoha	Hui Mālama I Nā Kūpuna O Hawai‘i Nei – Po‘o	See below.
Diamond, Van Horn	O‘ahu Island Burial Council Chair	No response.
Nāmu‘o, Clyde	Office of Hawaiian Affairs – Administrator	See below.
Napōka, Nathon	State Historic Preservation Division – Culture and History Branch	No response.

In an email response on June 2, 2005, Mr. Halealoha Ayau, the *po‘o* or head of Hui Mālama I Nā Kūpuna O Hawai‘i Nei, noted the following concern:

During the Kalaniana‘ole Highway Improvement Project (early-mid 1990s), many Hawaiian and Chinese burials were disturbed when the highway was widened. The *iwi* were reburied at an empty lot along Kalaniana‘ole Highway. There is a file at the State Historic Preservation Division with the number of individuals and the location of the reburial site. I would imagine that additional unmarked Hawaiian burial sites will be impacted by this current project.

In a letter dated June 14, 2005, Mr. Clyde W. Nāmu‘o, the Administrator for the Office of Hawaiian Affairs, responded:

The office of Hawaiian Affairs (OHA) is in receipt of your June 2nd, 2005 request for comment on the above listed proposed project, TMK: 3-9-17:20-30. OHA has no comment at this time.

OHA further requests your assurances that if the project goes forward, should *iwi* or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

The concerns noted by Hui Mālama I Nā Kūpuna O Hawai'i Nei and the Office of Hawaiian Affairs are addressed below in the SUMMARY AND RECOMMENDATIONS section of this report.

VII. TRADITIONAL CULTURAL LANDSCAPE OF MAUNALUA AND THE PROJECT AREA

Oral traditions, historic accounts, and archaeological investigations all indicate that traditional Hawaiian settlement and land use existed in Maunalua Ahupua‘a well into the late prehistoric and early historic period. As the English navigator Nathaniel Portlock observed while visiting Maunalua Bay in 1786: "the low land and vallies being in a high state of cultivation, and crowded with plantations of taro, sweet potatoes, sugar cane, &c. interspersed with a great number of cocoa-nut trees" (Portlock 1968:74 cited in Takemoto 1975:14).

It is likely that Maunalua Valley – whether designated as an *‘ili* or *ahupua‘a* – followed the typical Hawaiian *ahupua‘a* pattern, extending *mauka* from the coast to the upland forest areas. Within the *ahupua‘a* could be found a wide variety of cultural practices and resources, depending on location within the *makai* to *mauka* context. Forest areas miles inland would have been utilized for a variety of purposes, especially gathering of timber, avian resources, medicinal plants, and famine food resources.

In the *makai* area of Maunalua, above Maunalua Bay, was Kuapā Pond, a traditional Hawaiian fishpond “whose side or sides facing the sea consist of a stone or coral wall usually containing one or more sluice grates” (Apple and Kikuchi 1975: 9).

As documented in Section IV above, the present project area sits on modern landfill imported into Kuapā Pond during the 1960s. Thus, except for its presence in a former Hawaiian fishpond, the project area itself is a modern construct that has no association with traditional Hawaiian culture, practices or beliefs in Maunalua.

VIII. SUMMARY AND RECOMMENDATIONS

The historic documentation presented in this report – including historic maps and photographs – indicates that the present Kalanianaʻole Highway alignment between Keāhole Street and Hawaii Kai Drive sits on landfill deposited within Kuapā pond – a traditional Hawaiian fishpond – in the 1960s during the construction of the Hawaii Kai development. It is thus unlikely that any subsurface historic properties are present beneath the highway, particularly on its *mauka* side where the improvement project is planned. Additionally, in light of the extensive dredging within the pond itself during the Hawaii Kai development, it is unlikely that any of the original pond deposits remain undisturbed beneath the project area.

Sitting on fill land constructed in the 20th century, the project area contains no cultural sites or historic properties. Before the 20th century, traditional cultural practices in the vicinity focused on fish farming within Kuapā pond. No contemporary or continuing cultural practices occur within the project area.

In Section VI above, Mr. Halealoha Ayau of Hui Mālama I Nā Kūpuna O Hawai‘i Nei recalls that human burials were encountered during a Kalanianaʻole Highway widening project in the 1990s and suggests that “additional unmarked Hawaiian burial sites will be impacted by this current project.” As noted in Section V (Archaeological Research) above, that widening project included the present project area (documented in Putzi et al. 1998). All burials were encountered in undisturbed *Jaucus* sand deposits in Kuli‘ou‘ou Ahupua‘a. Significantly no burials were encountered along Kalanianaʻole Highway in Maunalua Ahupua‘a, including the present project area, where the highway sits on modern landfill. Given the negative results of this past archaeological monitoring and the modern creation of the project area landform in the 1960s it is unlikely that *in situ* human interments are present in the project area.

Consequently, the Kalanianaʻole Highway improvement project between Keāhole Street and Hawaii Kai Drive will have minimal impact upon native Hawaiian cultural resources, beliefs and practices. It should be noted, however, that historic properties – such as traditional Hawaiian and historic artifacts, and fragmented or isolated human remains – are occasionally encountered in landfill materials. As a precautionary measure, personnel involved in highway improvement activities in the project area should be informed that the State Historic Preservation Division must be notified concerning any potential historic properties encountered during the project.

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U.S. Department
of Transportation
**Federal Highway
Administration**

FILE COPY

Hawaii Division
Box 50206
300 Ala Moana Boulevard, Room 3-306
Honolulu, HI 96850

February 15, 2006

In Reply Refer To:
HEC-HI

Ms. Melanie Chinen
State Historic Preservation Division
Department of Land and Natural Resources
Kakuhihewa Building
601 Kamokila Blvd., Rm. 555
Kapolei, HI 96707

Dear Ms. Chinen:

Subject: Section 106, National Historic Preservation Act Consultation
Kalaniana'ole Highway Improvements
Vicinity of Hawai'i Kai Drive to Ke'āhole Street
(TMK 3-9-17:20, Maunalua Ahupua'a, Kona District, O'ahu)

The U.S. Department of Transportation, Federal Highway Administration (FHWA), respectfully requests initiation of consultation under Section 106 of the National Historic Preservation Act for the above-referenced project.

A federal Categorical Exclusion (CATEX) is being prepared for this project, as well as an Environmental Assessment in accordance with State of Hawai'i (HRS Chapter 343) environmental guidelines and requirements.

An Archaeological Literature Review and Field Inspection was completed for the project by Cultural Surveys Hawai'i (CSH) (July 2005). The purpose of the Archaeological Literature Review and Field Inspection was to determine if archaeological sites have been recorded on or near the property, and to identify any sensitive areas that might require further investigation or mitigation prior to construction. A companion Cultural Impact Evaluation (July 2005) was also prepared to comply with Chapter 343 HRS, which requires consideration of a project's effect on traditional cultural practices. Copies of both documents are enclosed.

Project Description and Purpose

The State of Hawai'i Department of Transportation (HDOT) is proposing improvements to a section of Kalaniana'ole Highway in east Honolulu. The project area is located across Maunalua Bay Beach Park in Hawai'i Kai. The project location and Area of Potential Effect (APE) are shown in Figures 1 and 2.



The purpose of the project is to improve the operational efficiency of the Kalaniana'ole Highway and Keāhole Street intersection. Roadway improvements will be made within an 800-foot stretch on the mauka side of Kalaniana'ole Highway (Honolulu-bound), between Hawai'i Kai Drive and Keāhole Street. The project will modify one of the two existing right turn lanes from Keāhole Street onto Kalaniana'ole Highway (Honolulu-bound) to an exclusive, "free right-turn" lane. Vehicles in the right-most turning lane will be able to turn without yielding to west-bound traffic on Kalaniana'ole Highway. The improvements will also relocate the mauka sidewalk and bike lane on Kalaniana'ole Highway to accommodate this turning lane. Electrical utility connections and relocations will occur along Kalaniana'ole Highway about 260 feet beyond the Keāhole Street intersection, and slightly beyond Hawai'i Kai Drive in the west-bound direction. Electrical improvements will also extend about 170 feet along Keāhole Street. Some land outside the existing highway right-of-way will be acquired from the Bishop Estate (Figure 2).

Findings

The study area sits on landfill deposited within Kuapā Pond--a traditional Hawaiian fishpond--in the 1960's during construction of the Hawai'i Kai development. It is thus unlikely that any subsurface historic properties are present beneath the highway, particularly on the mauka side where the improvements are planned. Additionally, in light of the extensive dredging within the pond itself during the Hawai'i Kai development, it is unlikely that any of the original pond deposits remain undisturbed beneath the project area.

In the mid 1990's, during archaeological monitoring for widening of Kalaniana'ole Highway, no historic properties were encountered in the current project area. All properties documented during that project—including human burials and non-burial sites—were encountered in Jaucus sand deposits beneath the highway corridor in the Kuli'ou'ou Ahupua'a, northwest of the current project area. No burials were encountered along Kalaniana'ole Highway in the Maunalua Ahupua'a, where the project is located and where the highway sits on landfill.

Sitting on fill land constructed in the 20th century, the project area contains no surface or subsurface cultural sites or historic properties. No contemporary or continuing cultural practices occur within the project area.

Hawaiian organizations, agencies and community representatives were contacted as part of the Cultural Impact Evaluation. The SHPD, Office of Hawaiian Affairs, O'ahu Island Burial Council, and Hui Mālama I Na Kūpuna O Hawai'i Nei were asked to identify native Hawaiian cultural resources, beliefs and practices associated with the project area that might be impacted by the project.

The Hui Mālama noted that burials were found during the highway widening in the 1990's, and indicated that additional unmarked burials may be impacted by this project. However, as stated above, no burials were found in Maunalua Ahupua'a location of the current project. The Office of Hawaiian Affairs requested assurance that if Native Hawaiian cultural or traditional deposits be found, work will cease and the appropriate agencies contacted.

In summary, given the negative results of past archaeological monitoring and the creation of the project area by fill in the 1960's, it is unlikely that *in situ* human interments are present in the project area. Based on the findings, CSH concluded that no further archaeological work is warranted.

Determination of Effect

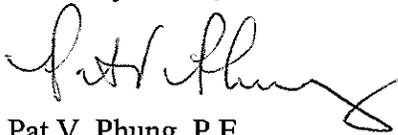
The project is unlikely to encounter human remains or traditional artifacts, and will have minimal impact on native Hawaiian cultural resource, beliefs, and practices. In the unlikely event that traditional Hawaiian and historic artifacts, and fragmented or isolated human remains are encountered in the fill material, construction personnel will be instructed to notify the State Historic Preservation Division. This mitigation will address the concerns noted by Hui Mālama and the Office of Hawaiian Affairs.

As such, we have determined that the project will have "no effect" on archaeological or cultural resources. We respectfully request your review of the documentation provided, and your concurrence on the APE and our determination of no effect.

Thank you for your comments and cooperation in this matter.

Please contact me at (808) 541-2700, extension 305, if there are any questions.

Sincerely Yours,



Pat V. Phung, P.E.
Transportation Engineer

Enclosure: Cultural Impact Evaluation

cc: Rod Haraga, State of Hawaii Department of Transportation
Reid Tokuhara, State of Hawaii Department of Transportation
Harold Takemoto, KN Consulting

PPhung/bjs

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

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HAWAII DIVISION

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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAOHOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

April 3, 2006

Mr. Pat V. Phung, P.E.
U.S. Department of Transportation
Federal Highway Administration-Hawaii Division
Box 50206
300 Ala Moana Boulevard, Room 3-306
Honolulu, Hawai'i 96850

LOG NO: 2006.0885
DOC NO: 0603CM101
Archaeology

Dear Mr. Phung:

**SUBJECT: National Historic Preservation Act Section 106 Review [Federal/DOT] –
Kalaniana'ole Highway Improvements
Vicinity of Hawai'i Kai Drive to Keāhole Street
Maunaloa Ahupua'a, Honolulu [Kona] District, Island of Oahu
TMK: (1) 3-9-017:020 (portion)**

Thank you for the opportunity to comment on the aforementioned project. We received your documents, including a cover letter and two attached reports by Cultural Surveys of Hawai'i (CSH), on February 23, 2006. The proposed undertaking consists of improvements to an approximately 800-foot section of the Kalaniana'ole Highway in Hawai'i Kai. Our review of this project is based on records available at the State Historic Preservation Division (SHPD) and on the reports by CSH. No field inspection was conducted by the SHPD.

According to research conducted by CSH (*Archaeological Literature Review and Field Inspection for a Highway Improvement Project on an Approximately 305-Meter Long Section of Kalaniana'ole Highway Between Keāhole Street and Hawaii Kai Drive, Maunaloa Ahupua'a, Kona District, O'ahu Island, TMK (1) 3-9-17:20*), the proposed project area was located within the seaward (*makai*) margins of a historic fishpond (Kuapā, Site 49 in *Sites of Oahu*). Archival photographs from the 1920s compiled by CSH (*ibid.*) clearly indicate the presence of a narrow causeway—probably representing the margins of the historic fishpond—immediately adjacent to (*makai* of) the proposed project area. Soil distribution data indicate the proposed project area consists of “fill lands” associated with the 1960s development of Hawai'i Kai. Jaucas sand deposits are not located within the proposed project area, although they are located nearby to the west and east.

Based on these observations, CSH (*ibid.*:28) concludes as follows: “It is thus unlikely that any subsurface historic properties are present beneath the highway, particularly on its *mauka* side where the improvement project is planned...[I]t is [also] unlikely that any of the original pond deposits remain undisturbed beneath the project area.” We concur with these conclusions.

Mr. Phung
Page 2

According to your cover letter, Hui Mālama I Na Kūpuna O Hawai'i Nei has "...noted that burials were found during the highway widening in the 1990s, and indicated that additional unmarked burials may be impacted by this project." As you have stated, however, these burials were all located west of the proposed project area (in Kuli'ou'ou Ahupua'a), in Jaucas sand deposits. In fact, the proposed project area probably would have represented a very poor choice of location for traditional burials, in view of the fact that it would have been under water well into the 20th century.

Finally, as stated by CSH, it is possible that historically-significant cultural resources, including previously-disturbed human remains, may sometimes be located in landfill materials. However, unless specific information regarding the presence of bones in fill is available, we cannot mitigate against such low probability occurrences.

In conclusion, we concur with your determination of "no effect" on historic properties for the proposed undertaking. If historic resources, including human skeletal remains, are identified during the construction activities, all work needs to cease in the immediate vicinity of the find, the find needs to be protected from additional disturbance, and the SHPD needs to be contacted immediately at (808) 692-8015.

Please contact Dr. Chris Monahan at (808) 692-8015 if you have any questions about this letter.

Aloha,


Peter Young, Chair
State Historic Preservation Officer

CM



U.S. Department
of Transportation
**Federal Highway
Administration**

Hawaii Division
Box 50206
300 Ala Moana Boulevard, Room 3-306
Honolulu, HI 96850

February 13, 2006

In Reply Refer To:
HEC-HI

Mr. Clyde Namu'o, Administrator
Office of Hawaiian Affairs
711 Kapiolani Boulevard, Suite 500
Honolulu, HI 96813-5249

Dear Mr. Namu'o:

Subject: Section 106, National Historic Preservation Act Consultation
Kalaniana'ole Highway Improvements
Vicinity of Hawai'i Kai Drive to Ke'ahole Street
(TMK 3-9-17:20, Maunalua Ahupua'a, Kona District, O'ahu)

This is in response to the Office of Hawaiian Affairs' (OHA) comment letter dated June 14, 2005 regarding the above-referenced project. The project is proposed by the State of Hawai'i Department of Transportation (HDOT) and the Federal Highway Administration (FHWA), and involves roadway improvements within an 800-foot stretch of Kalaniana'ole Highway in Hawai'i Kai.

The OHA letter was sent to Cultural Surveys Hawai'i as part of a Cultural Impact Evaluation. Cultural Surveys Hawai'i was conducting a Cultural Impact Evaluation for the project.

Archaeological and Cultural Impact Findings

An Archaeological Literature Review and Field Inspection was also completed to identify archaeological sites on or near the property, and areas that might require further investigation or mitigation prior to construction. The study noted that the project area sits on landfill deposited within Kuapā Pond—a traditional Hawaiian fishpond—in the 1960's during construction of Hawai'i Kai. Therefore, it is unlikely that any subsurface historic properties are present beneath the highway, particularly on the mauka side where the improvements are planned. Due to extensive dredging within the pond, it is unlikely that any of the original pond deposits remain undisturbed beneath the project area.

During previous archaeological monitoring in the 1990's for Kalaniana'ole Highway widening, no historic properties were encountered in the current project area.



In summary, the project area contains no surface or subsurface cultural sites or historic properties. There are no contemporary or continuing cultural practices within the project area.

OHA's June 14 Comment Letter

OHA's June 14, 2005 letter to Cultural Surveys Hawai'i stated:

The Office of Hawaiian Affairs (OHA) is in receipt of your June 2nd, 2005 request for comment on the above listed proposed project, TMK 3-9-17:20-30. OHA has no comment at this time.

OHA further requests your assurances that if the project goes forward, should iwi or Native Hawaiian cultural or traditional deposits be found during ground disturbance, work will cease, and the appropriate agencies will be contacted pursuant to applicable law.

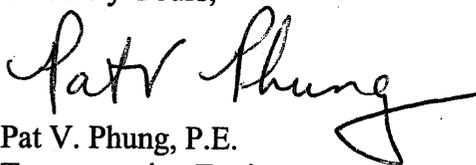
FHWA Response

The FHWA will comply with OHA's request. In the unlikely event that traditional Hawaiian and historic artifacts, and fragmented or isolated human remains are encountered in the fill material, construction personnel will be instructed to notify the State Historic Preservation Division.

Copies of the Cultural Impact Evaluation and the Archaeological Literature Review and Field Inspection for this project will be included in the Draft Environmental Assessment. They will be published shortly. A Draft EA will be transmitted to the OHA.

Thank you for your comments and cooperation in this matter.

Sincerely Yours,



Pat V. Phung, P.E.
Transportation Engineer

cc: Rod Haraga, State of Hawaii Department of Transportation
Reid Tokuhara, State of Hawaii Department of Transportation
Harold Takemoto, KN Consulting



U.S. Department
of Transportation
**Federal Highway
Administration**

Hawaii Division
Box 50206
300 Ala Moana Boulevard, Room 3-306
Honolulu, HI 96850

February 13, 2006

In Reply Refer To:
HEC-HI

Hui Mālama I Nā Kūpuna O Hawai'i Nei
Mr. William Aila
P.O. Box 746
Waianae, Hawai'i 96792

Dear Mr. Aila:

Subject: Section 106, National Historic Preservation Act Consultation
Kalaniana'ole Highway Improvements
Vicinity of Hawai'i Kai Drive to Keāhole Street
(TMK 3-9-17:20, Maunalua Ahupua'a, Kona District, O'ahu)

This is in response to comments made by Mr. Halealoha Ayau on behalf of Hui Mālama regarding the above referenced project. The project is proposed by the State of Hawai'i Department of Transportation (HDOT) and the Federal Highway Administration (FHWA), and involves roadway improvements within an 800-foot stretch of Kalaniana'ole Highway in Hawai'i Kai.

On June 2, 2005, Mr. Ayau's e-mailed comments on the project to Cultural Surveys Hawai'i as part of a Cultural Impact Evaluation they were conducting.

Hui Malama's June 2, 2005 Comments

In his June 2 e-mail, Mr. Ayau noted the following concern:

During the Kalaniana'ole Highway Improvement Project (early-mid 1990s), many Hawaiian and Chinese burials were disturbed when the highway was widened. The iwi were reburied at an empty lot along Kalaniana'ole Highway. There is a file at the State historic Preservation Division with the number of individuals and the location of the reburial site. I would imagine that additional unmarked Hawaiian burial sites will be impacted by this current project.

Archaeological Findings and FHWA Response

An Archaeological Literature Review and Field Inspection was also completed for the project (Cultural Surveys Hawai'i, 2005), to determine archaeological sites on or near the property and



to identify areas that might require further investigation or mitigation prior to construction. The study noted that the project area sits on landfill deposited within Kuapā Pond—a traditional Hawaiian fishpond-- in the 1960's during construction of Hawai'i Kai. Therefore, it is unlikely that any subsurface historic properties are present beneath the highway, particularly on the mauka side where the improvements are planned. Given the extensive dredging within the pond, it is unlikely that any of the original pond deposits remain undisturbed beneath the project area.

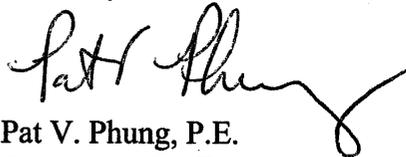
The previous Kalaniana'ole Highway widening referred to by Mr. Ayau included the present project area. However, all burials were encountered in undisturbed Jaucus sand deposits in Kuli'ou'ou Ahupua'a. No burials were encountered along Kalaniana'ole Highway in Maunalua Ahupua'a, including the present project area. Given the negative results of this past archaeological monitoring and the fact that the project area was created by landfill in the 1960's, Cultural Surveys Hawai'i stated that it is unlikely that *in situ* human interments are present in the project area.

However, we acknowledge that historic properties—such as traditional Hawaiian and historic artifacts and fragmented or isolated human remains—are occasionally encountered in landfill materials. As such, personnel involved in highway improvement activities will be instructed to notify the State Historic Preservation Division concerning any potential historic properties encountered.

Copies of the Cultural Impact Evaluation and the Archaeological Literature Review and Field Inspection for this project will be included in the Draft Environmental Assessment. They will be published shortly. A Draft EA will be transmitted to the Hui Mālama I Nā Kūpuna O Hawai'i Nei.

Thank you for your comments and cooperation in this matter.

Sincerely Yours,

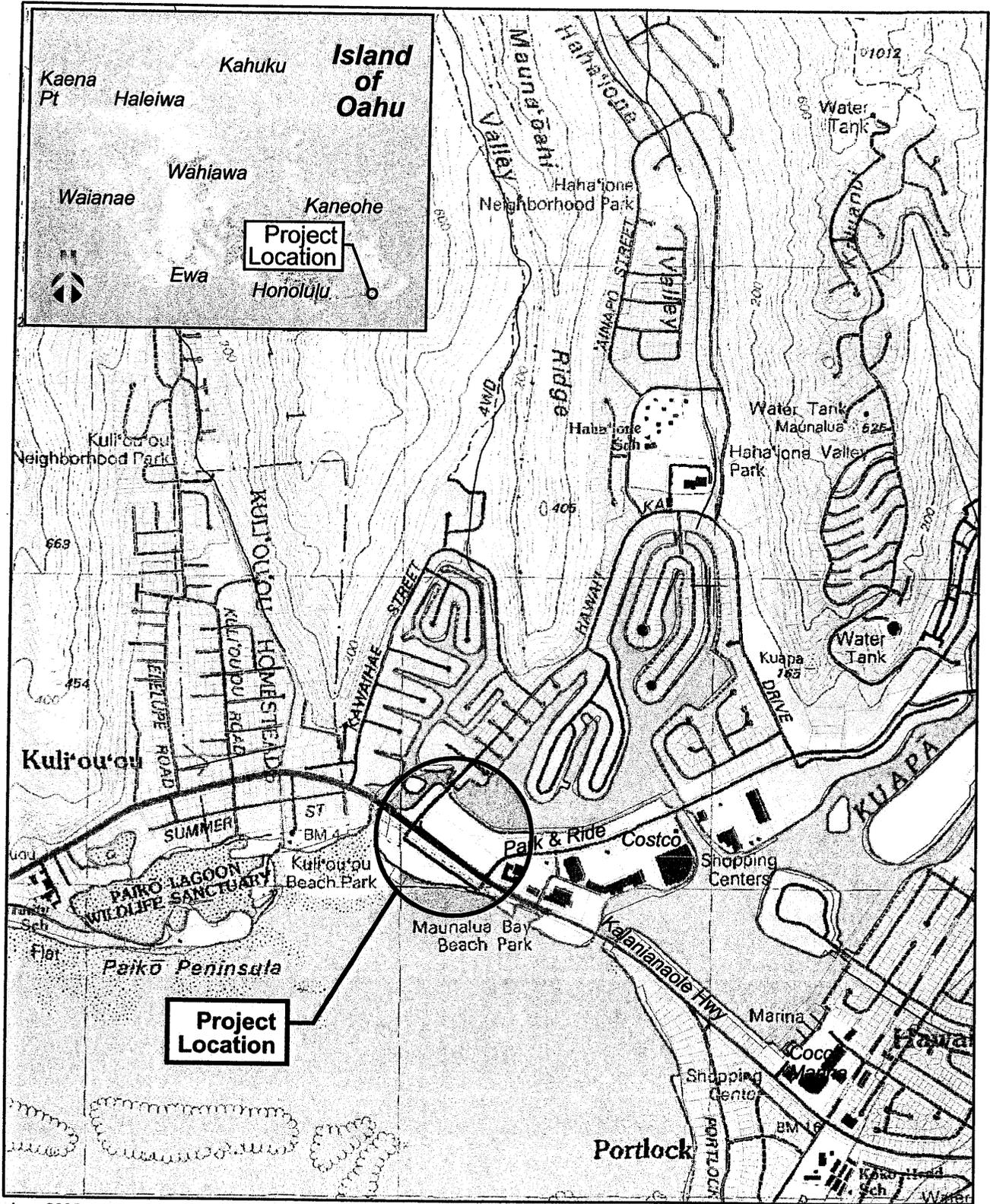


Pat V. Phung, P.E.
Transportation Engineer

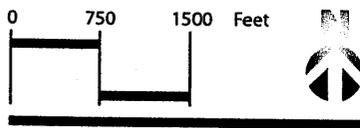
2 Enclosures: Location Map (Figure 1)
Area of Potential Effect (Figure 2)

cc: Rod Haraga, State of Hawaii Department of Transportation
Reid Tokuhara, State of Hawaii Department of Transportation
Harold Takemoto, KN Consulting

Kalaniana'ole Hwy Improvements



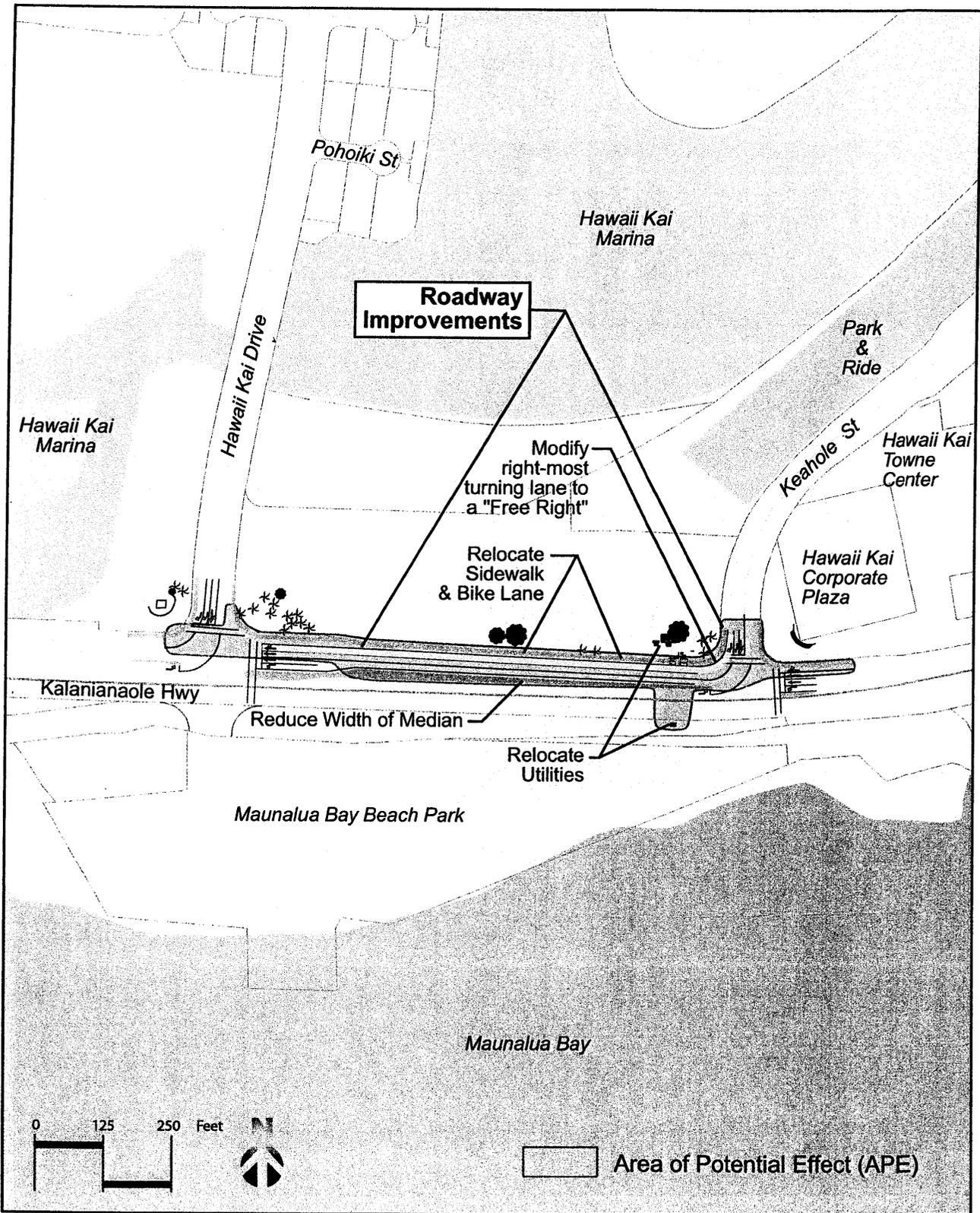
June 2005



1 Mile

Figure 1
Location

Kalaniana'ole Hwy Improvements



September 2005

Figure 2
Area of Potential Effect