LINDA LINGLE
GOVERNOR

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
BRUCE Y. MATSUI
BARRY FUKUNAGA
BRENNON T. MORIOKA
BRIAN H. SEKIGUCHI

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

IN REPLY REFER TO:

HWY-DS 2.7646

May 10, 2005

Ms. Genevieve Salmonson, Director
Office of Environmental Quality Control
(OEQC)
235 South Beretania Street, Suite 702
Honolulu, Hawaii 96813

Dear Ms. Salmonson,

Subject: Draft Environmental Assessment (DEA) for Kamehameha Highway Intersection Improvements at Kuilima Drive, TMK 5-7-01:31, Koolauloa, Oahu, Hawaii

The Hawaii State Department of Transportation has reviewed the draft environmental assessment for the subject project, and anticipates a Finding of No Significant Impact (FONSI) determination. Please publish a notice of availability for this project in the next available Office of Environmental Quality Control (OEQC) Notice.

We have enclosed a completed OEQC Publication Form, four copies of the DEA, and the project summary on disk. If you have any questions, please call Mr. Todd Nishioka at 692-7547, Technical Design Services Office, Design Branch, Highways Division.

Very truly yours,

Glenn M. Yasui
Administrator
Highways Division

DRAFT ENVIRONMENTAL ASSESSMENT (DEA)

For

KAMEHAMEHA HIGHWAY INTERSECTION IMPROVEMENTS AT KUILIMA DRIVE KAHUKU, KOOLAULOA, OAHU

State Highway Project No. 83B-01-99

This document has been prepared Pursuant to Chapter 343, Hawaii Revised Statutes (HRS) and the National Environmental Policy Act (NEPA)

Proposing Agency:

State of Hawaii
Department of Transportation
Highways Division

Prepared by:

Lyon Associates, Inc.
841 Bishop Street
Suite 2006
Honolulu, Hawaii 96813

May 2005

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EXECUTIVE SUMMARY

The State Department of Transportation, Highways Division (State DOT) proposes to improve the intersection of Kamehameha Highway and Kuilima Drive in Kahuku, District of Koolauloa, on the Island of Oahu. The proposed project includes roadway widening for the addition of traffic channelization lanes, highway lighting, removal and replacement of the existing box culvert crossing the Oio Stream with a bridge. A temporary detour with a temporary stream crossing will be constructed to accommodate traffic during the construction of the replacement bridge.

This Draft Environmental Assessment (DEA) was prepared for the project pursuant to Chapter 343, of the Hawaii Revised Statutes (HRS), and the State Department of Health Title 11-200 implementing rules for the environmental assessment process. The proposed project 'triggers' Chapter 343-5(1), of the HRS, because of the use of State funds for the construction of the project. This DEA is being submitted to the City and County of Honolulu pursuant to Chapter 205A, of the HRS, and Chapter 25, of the Revised Ordinances of Honolulu, because this project borders the Special Management Area (SMA). The Department will apply for a Special Management Area Use Permit.

Alternatives Considered

The five alternatives investigated for the proposed project include the following:

- Prohibit left turn movements into Kuilima Drive;
- Install additional traffic warning devices;
- Construct roadway widening for traffic channelization lanes;
- Install a traffic signal system; and
- No action.

The proposed alternative to construct roadway widening for traffic channelization lanes is based on the recommendations developed in the March 1999 Design and Construction Project Assessment Report for the project prepared by the State DOT.

Anticipated Impacts

It is anticipated that the impacts from the proposed project will be short-term and related to construction activities. Other short-term impacts will occur from the construction of the detour road and the alterations of traffic flow. Project area vegetation and stream topography will be temporarily affected and short-term visual, noise, and air quality effects may occur. There is no anticipated significant long term or cumulative impacts associated with the proposed project.

Applicable Environmental Permits

In addition to the environmental documentation requirements of Chapter 343, HRS, the proposed project requires various state and county permits. These permits include:

- City and County of Honolulu Special Management Use Area Permit (SMP)
- National Pollutant Discharge Elimination System (NPDES) General Permit Coverage for Construction (NOI C)
- National Pollutant Discharge Elimination System (NPDES) General Permit Coverage for Construction Dewatering (NOI G)

Determination

The Proposing Agency anticipates that a finding of no significant impact (FONSI) will be made in connection with this project.

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1. INTRODUCTION

1.1. Introduction

The State Department of Transportation, Highways Division (State DOT) proposes to improve the intersection of Kamehameha Highway and Kuilima Drive in Kahuku, District of Koolauloa, on the Island of Oahu (Figure 1). The proposed project includes roadway widening for the addition of traffic channelization lanes, new asphalt concrete pavement and replacement of an existing concrete culvert that carries Oio Stream under Kamehameha Highway[1]. The replacement crossing will be a bridge structure providing improved sight distances at the intersection. The project will provide highway lighting on both sides of the new intersection. A temporary detour with a temporary stream crossing will be constructed to accommodate traffic during the construction of the new bridge. The State intends to acquire additional right of way to accommodate the highway widening in the area.

This Draft Environmental Assessment (DEA) is prepared for the project pursuant to Chapter 343, of the Hawaii Revised Statues (HRS), and the State Department of Health Title 11-200 implementing rules for the environmental assessment process. The proposed project 'triggers' Chapter 343-5(1), of the HRS, because of the use of State funds for the construction of the project. This DEA is also being submitted to the City and County of Honolulu pursuant to Chapter 205A, of the HRS, and Chapter 25, of the Revised Ordinances of Honolulu, because this project borders the Special Management Area (SMA) and may require a Special Management Area Use Permit (SMP).

Agencies, citizen groups, and individuals consulted in making this assessment are listed in Chapter 8

1.2. Project Location

The project is located along Kamehameha Highway at the Kuilima Drive intersection (entrance to the Turtle Bay Resort) in the vicinity of Tax Map Key (TMK) 5-7-01:31, in Kahuku, District of Koolauloa, on the Island of Oahu.

Kamehameha Highway (State Route 83) is the main coastal thoroughfare on the island of Oahu. The project site is located north of Kahuku at the entrance to the Turtle Bay Resort Development (Figure 1).

The proposed construction area or Area of Potential Effect (APE) includes approximately 5.54 acres of land on the mauka and makai sides of Kamehameha Highway at the intersection of Kuilima Drive (Figure 2)

The intersection serves the Turtle Bay Resort. The Koolauloa Sustainable Communities Plan Land Use Map dated 1999 designates the Turtle Bay Resort as a Resort. The resort is owned by Kuilima Resort Company. The Turtle Bay Resort is a 26-acre site developed with a 410-room hotel with restaurants, retail and other commercial support services. There are 12 beach cottage units, a tennis pro shop near the hotel. 48 Ocean Villa units, bar/food service/restroom structures are at the Kuilima Bay beach. Condominium units are located on either side of Kuilima Drive on the approach to the hotel.

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[1] Although the Department of Transportation refers to this structure as concrete culvert, because the concrete culvert has concrete wing walls, traffic railings and exceeds a prescribed length, it is sometimes referred to as a bridge.

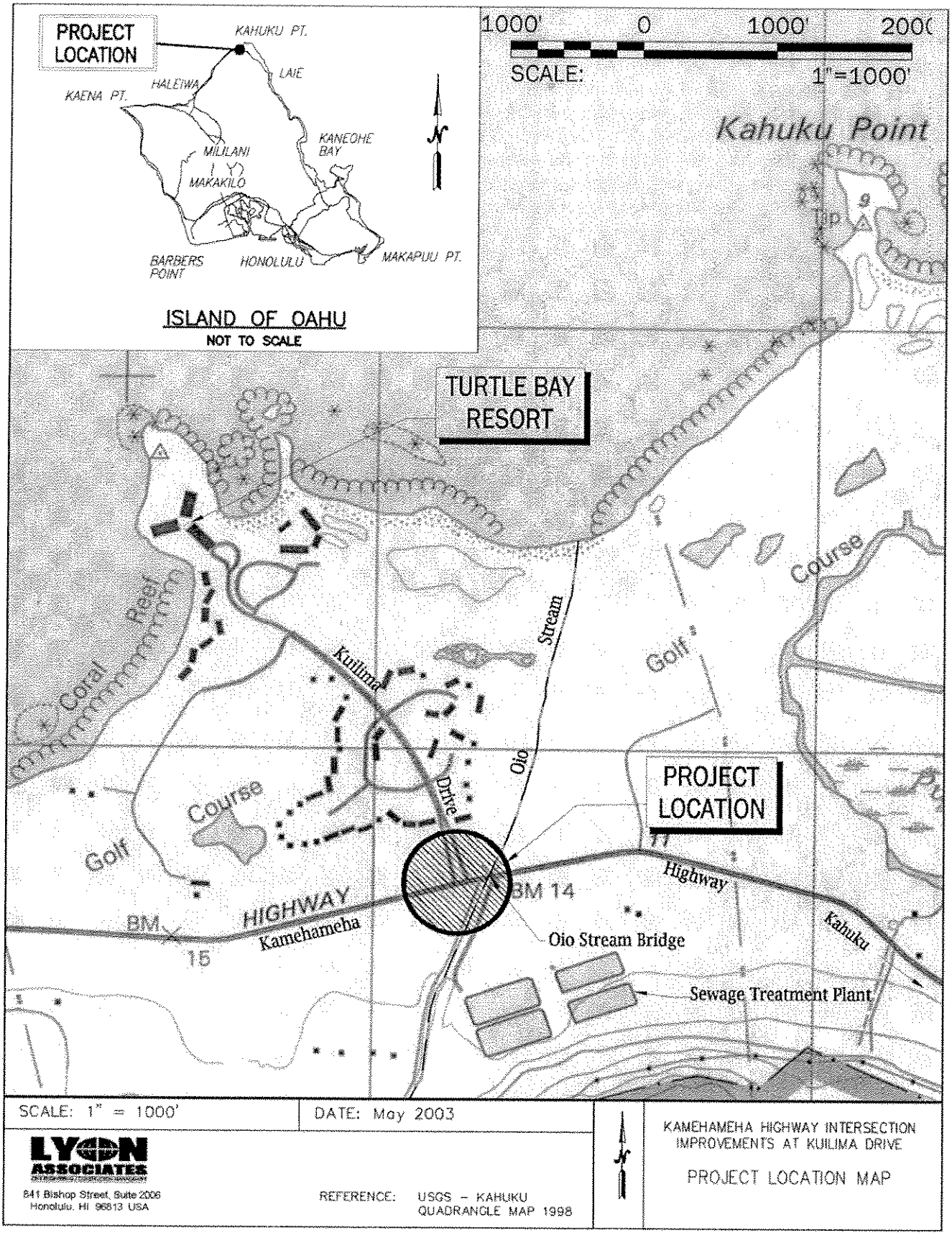

Figure 1 Project Location Map

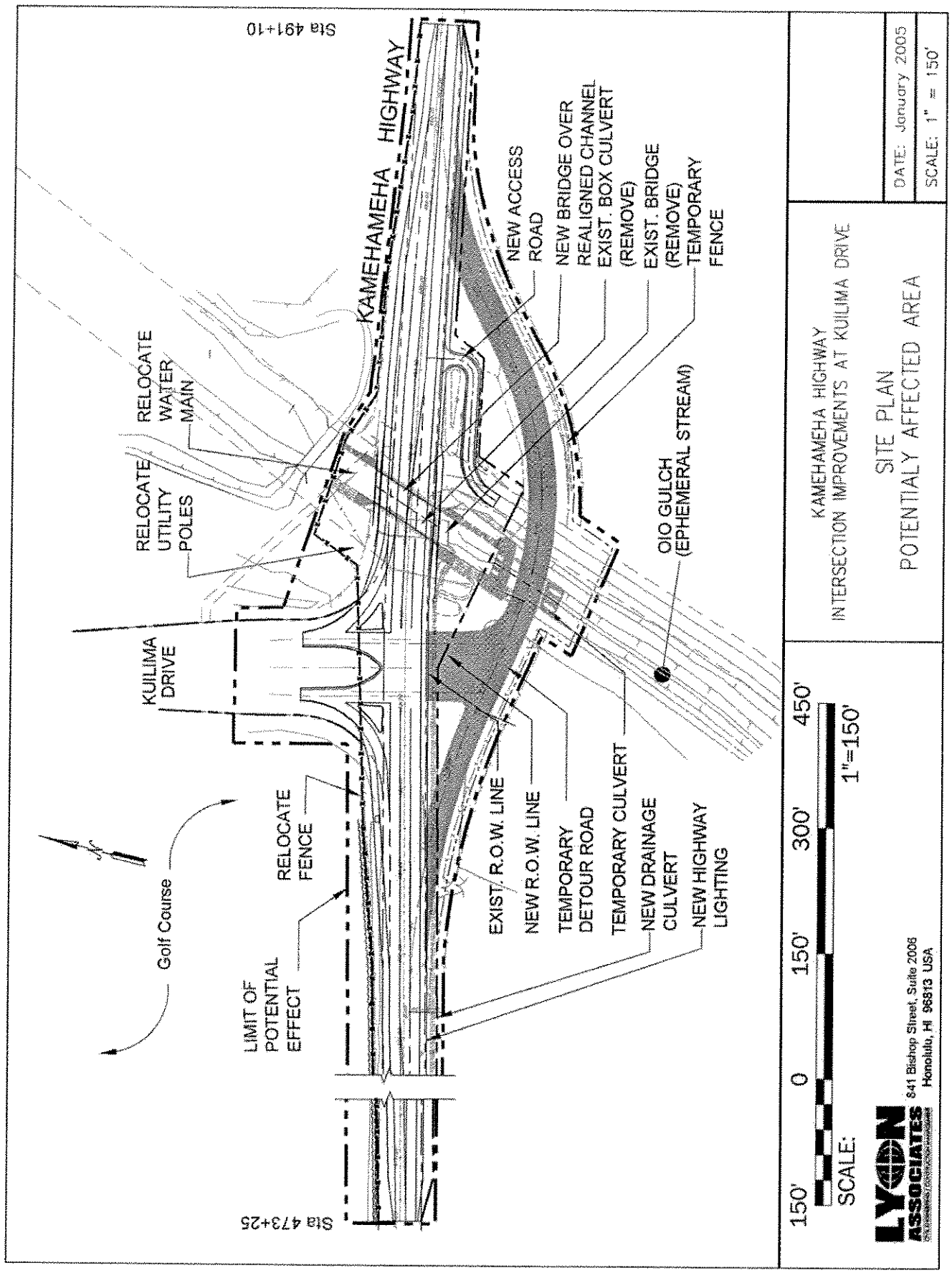

Figure 2 Site Plan and Potentially Affected Area

1.3. Permits

In addition to the environmental documentation requirements of Chapter 343, HRS, the proposed project requires various state and county permits or notices. These include:

- National Pollutant Discharge Elimination System (NPDES) General Permit Coverage for Construction Dewatering
- National Pollution Discharge Elimination System (NPDES), CWB NOI, and Form C: Storm water Discharge Associated with Construction Activities.
- Special Management Area (SMA) Permit (may be exempt).

1.3.1. U.S. Army Corps of Engineers Section 404 Permit

The U.S. Army Corps of Engineers (COE) has determined that the Oio Stream is an ephemeral stream[2]. Because of the ephemeral stream determination, the project is not subject to COE regulatory jurisdiction and 404 permit requirements.

1.3.2. State Stream Channel Alteration Permit

The State of Hawaii Department of Land and Natural Resources, Commission on Water Resources Management deemed that the Oio Stream does not have sufficient flows to support in stream use, therefore a stream channel alteration permit will not be required for the proposed bridge modification[3].

1.3.3. Section 401 Water Quality Certification

This project will not require a State Department of Health 401 Water Quality Certification (WQC).

1.3.4. Coastal Zone Management Consistency

A Coastal Zone Management (CZM) permit for federal consistency will not be required.

1.3.5. City and County of Honolulu Special Management Area (SMA) Use Permit

The City and County of Honolulu (City) regulates actions taking place in the SMA under Chapter 25, Revised Ordinances of Honolulu (ROH). The City and County of Honolulu confirms that the project site makai of the centerline of Kamehameha Highway is located within the Special Management Area (SMA)[4].

Chapter 25, ROH, exempts the "repair and maintenance of roads and highways within the existing right of way" from the SMA Permit process. It also exempts "the creation or termination of easements, covenants or other rights in structures and land." However, these exemptions may be denied by the Director, Department of Planning and Permitting (DPP), under certain circumstances.[5]

---

[2] See Appendix A - Letter from U.S. Army Corps of Engineers
[3] See Appendix A - Letter from State DLNR, Commission on Water Resources
[4] See Appendix A - C&C Honolulu, DPP Letter February 23, 2000, 2000/CLOG-820 (ST) to Lyon Associates, Inc.
[5] ROH Chapter 25, Section 25-1.3(2) (B) and (J); ROH Chapter 25, Section 25-1.3(3) and (4).

Thus, it is concluded:

- The acquisition of additional right-of way is not subject to the SMA Permit requirements.

- The Highway improvements and bridge construction may be exempt under Section 25, 1.3(B), "repair and maintenance of . . . highways within and existing the right of way".

A final determination regarding the need for a SMA Permit will be made after review of this Environmental Assessment by the C& C Department of Planning and Permitting.

1.3.6. NPDES General Permit Coverage for Construction Dewatering

Title IV, Permits and Licenses, of the Clean Water Act (CWA) grants the United States Environmental Protection Agency (EPA) with the authority and responsibility to issue discharge permits to every point source discharger. Section 402 (33 United States Code (USC) 1342) of the CWA describes the NPDES permit system. The CWA allows states to request EPA authorization to administer the NPDES program within their borders. The State of Hawaii, Department of Health (DOH), Clean Water Branch (CWB), regulates the General Permitting process in the state pursuant to HAR Chapter 11-55, Notice of Intent (NOI). The NPDES Construction Dewatering Permit is covered by the CWB-NOI Form G. The NPDES Construction Permit is covered by the CWB-NOI Form C.

1.3.7. State Historic Preservation Clearance

The proposed project will remove the existing culvert and cane haul road bridge at Oio Stream. The culvert was constructed in 1931, thus it is over 50 years old and is defined as a "Historic Structure" under the State Historic Preservation Act[6]. The culvert is not listed in the State or National Register of Historic Places. In 2000, the State Department of Land and Natural Resources, Historic Preservation Division, commented that is not likely that any archaeological sites are in the area and the culvert is not listed in the state historic inventory as high preservation priority[7]. As a "Historic Structure", the site will be documented by photography prior to demolition.

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[6] Hawaii Revised Statutes (HRS), Section 6E. The Act is designed to minimize project impacts to historically or archaeologically significant sites.

[7] See Appendix A - DLNR, SHPD Letter DOC NO. 0002tm23 of February 28, 2000 to Lyon Associates, Inc.

2. PURPOSE AND NEED

2.1. Purpose and need for the proposed action

This project is proposed under the State's participation in the Federal Highway Administration hazard elimination program[8].

It is proposed that a left turn storage lane into Kuilima Drive and an acceleration lane on Kamehameha Highway from Kuilima Drive be incorporated as part of the project. In addition, the sight distance and highway lighting will be improved.

The project is included in the hazard elimination program and approved for federal funding participation as State Highway Project No. 83B-01-99.

[8] 23 USC 152, Hazard Elimination Program

3. PROJECT DESCRIPTION

3.1. Project Description

This chapter provides a general description of the proposed project's technical, social, economic, and environmental characteristics pursuant to Chapter 343, HRS, and the State DOH Title 11-200-10, HAR, content requirements for an environmental assessment.

3.2. Proposed project

The State DOT proposes to improve Kamehameha Highway at the intersection of Kuilima Drive by improving sight distances and providing turning, acceleration and deceleration lanes. To accomplish these improvements, the Oio Stream box culvert will be replaced with a bridge (Figure 3). The new construction will remove sight distance obstructions. Deceleration and acceleration lanes will be provided for westbound traffic. A left turn lane into Kuilima drive will be provided for eastbound traffic. Street lighting at the intersection may be added based on current state requirements. The existing hydraulic capacity of the Oio stream crossing will be improved and provisions will be included in the design to allow future expansion.

Utility poles and overhead wires including power, telephone and cable television/data will be relocated along the north (makai) side of Kamehameha Highway to accommodate the proposed roadway widening.

The 12" water main on Kamehameha Highway will be rerouted within the new state right of way to avoid interference with the new Oio Stream crossing.

The existing road to the Kahuku Sewage Treatment Plant will be realigned at its intersection with Kamehameha Highway, east of the Oio stream crossing. An existing agricultural road (cane-haul road) stream crossing within the existing Kamehameha Highway right-of way, south (mauka) of the Oio stream crossing will be removed. Access to fields and agricultural operations Mauka of Kamehameha Highway will be maintained.

Approximately 2,875 feet of Kamehameha highway will be re-graded and repaved. A drainage system will be provided on the southern side.

The State DOT will acquire additional right-of-way to accommodate the proposed roadway improvements and relocated utilities. Temporary access rights will be obtained from adjoining landowners to accommodate the detour road.

3.3. Construction activities

Since Kamehameha Highway is the only roadway access through the project area, a 1,146-foot long temporary detour road will be constructed to maintain two-way traffic through the construction area at all times. The temporary detour road will span the Oio Stream on corrugated metal pipe culverts south (mauka) of the existing Oio culvert. The cross section of the temporary detour will have two 11-foot wide lanes, 4-foot wide shoulders, and a 6-foot wide pedestrian access way. Current drainage patterns will be maintained through all phases of construction.

Access to the Turtle Bay Resort, Golf Course, and private residences (Turtle Bay Resort Development) will be maintained at all times by temporarily modifying the existing intersection. Additional signs will be installed during construction notifying drivers of the

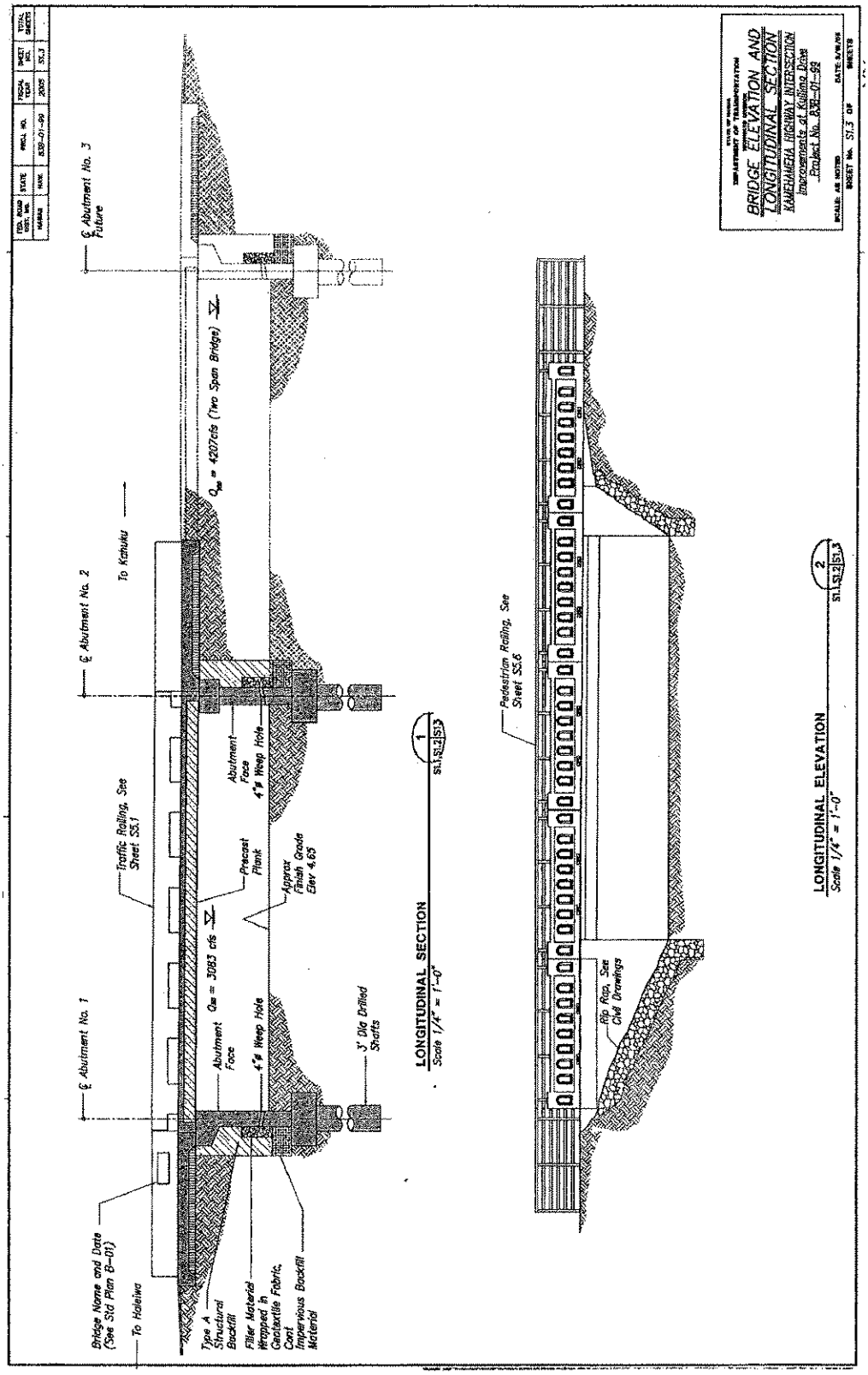

Figure 3 Proposed Bridge

location of the Turtle Bay Resort entrance. Access to agricultural fields and the Kahuku Sewage Treatment Plant will also be provided along the temporary detour road.

Construction vehicles and equipment will be stored within the project area throughout the duration of the work.

Temporary road infrastructure, the stream crossing, and all fill material from the detour road will be removed after construction of the intersection improvements. All excavated material, fill, and debris from the existing culvert will be removed, and placed in a DOH approved landfill on Oahu. With the exception of minor re-routing of the access road to the sewage treatment plant and removal of the agricultural road bridge crossing, the affected areas will be restored to their pre-construction state at completion of the project. Native botanical species will be used to revegetate the areas impacted by the temporary detour construction.

4. ALTERNATIVES CONSIDERED

4.1. Alternatives Considered

This chapter discusses the alternatives considered in the development of the proposed project. The five alternatives investigated include the following:

- Prohibit left turn movements;
- Install additional traffic warning devices;
- Construct roadway widening for traffic channelization lanes;
- Install a traffic signal system; and
- No action.

The proposed alternatives are based on the recommendations developed in the March 1999 Design and Construction Project Assessment Report for the project prepared by the State DOT.

4.1.1. Alternative 1 - Prohibit Left Turn Movements

Prohibiting left turn movements into and out of Kuilima Drive would drastically limit access to the Turtle Bay Development. Since Kuilima Drive provides the only access to Kamehameha Highway to and from the Turtle Bay Resort, restricting the turning movements at the intersection would have a significant adverse impact to the hotel, golf course, and residences. This alternative is undesirable and is not recommended for implementation.

4.1.2. Alternative 2 - Install additional Traffic Warning Devices

Alternative 2 proposes installation of additional interim traffic warning devices along Kamehameha Highway to warn drivers of the upcoming intersection and possible crossing vehicles. Additional warning signs, beacons, rumble strips, and striping would supplement existing warning devices at the intersection.

The additional traffic warning devices would provide a relatively low cost mitigation measure that would address the limited sight distance at the intersection; however, this alternative would not provide a permanent solution to the problem.

4.1.3. Alternative 3 - Sight Distance Improvements and Roadway Widening

Alternative 3 proposes widening the existing highway near the intersection to accommodate acceleration, deceleration and turning lanes and the replacement of the existing Oio Stream culvert with a new 70-foot wide bridge to improve sight distance at the intersection.

Widening the roadway to accommodate the new lanes will move the bridge railing and guardrails and improve sight distance at the intersection. The addition of lanes will facilitate entrance and exit movements at Kuilima Drive. The roadway profile will be adjusted to increase vertical sight distance along the highway near the new bridge. Highway lighting may be added pursuant to current State standards. Access to the fields and to the Kuilima Sewage treatment Plant will be realigned. The small concrete agricultural vehicle bridge, located in the state right-of way crossing Oio Stream Mauka of the existing culvert, will be removed.

A 1,150-foot long temporary detour road will be constructed to accommodate traffic through the construction area at all times. The temporary detour road will span the Oio Stream with corrugated metal pipe culverts south (mauka) of the existing Oio Stream culvert. The temporary detour will have two 11-foot wide lanes with 4-foot wide shoulders, and a 6-foot wide pedestrian access way.

The detour will permit access to the Turtle Bay Resort, Golf Course, and private residences (Turtle Bay Resort Development) by temporarily modifying the existing intersection. Access to the agricultural fields and the Kahuku sewage treatment plant will be provided along the temporary detour road. Additional signs will be installed during construction notifying drivers of the location of the Turtle Bay Resort entrance.

Current drainage patterns will be maintained through all phases of construction.

Alternative 3 will require the State to acquire additional right-of-way (ROW) along both sides of Kamehameha Highway. The ROW to be acquired on the makai side is currently part of the Turtle Bay Golf Course and owned by the Kuilima Resort Company. The land on the mauka side of the highway is currently leased by FPI Commercial Inc. for agricultural purposes, and is owned by the Aina Nui Corporation, an affiliate of The Estate of James Campbell. An agreement for temporary use of private land will be required to construct the temporary detour route on the mauka side of Kamehameha Highway

Utilities will be relocated along the makai side of Kamehameha Highway to accommodate the proposed roadway widening. Some of these utilities will be located in the new ROW discussed above.

Construction vehicles and equipment will be stored within the project area throughout the duration of the proposed project.

The road infrastructure, the existing Oio Stream crossing culvert, and all fill material from the temporary detour road will be removed when the intersection improvements are completed. All excavated material, fill, and debris will be removed, and disposed of. The areas affected by the temporary detour road will be restored to their pre-construction state following completion of the project. Native botanical species will be used to revegetate the areas impacted by the temporary detour construction.

4.1.4. Alternative 4 - Install New Lanes and Traffic Signal System

Alternative 4 proposes converting the existing intersection of Kamehameha Highway and Kuilima Drive to a fully signalized intersection in addition to widening the roadway to accommodate traffic deceleration and turning lanes.

Installation of traffic signals would improve safety at the intersection by controlling turning and through vehicle movements. In general, signals are not justified where safety can be improved through other means, especially on rural highways. New signals may be justified after engineering studies conclude they are warranted by satisfying one or more factors presented in the Federal Highway Administration Manual on Uniform Traffic Control Devices (MUTCD). The State DOT has determined that this intersection does not meet these criteria at this time.

4.1.5. Alternative 5 - No Action

The 'no action' alternative would retain the existing conditions at the intersection. The hazard elimination program will not be implemented.

4.2. Discussion

Alternative 3, construct roadway widening and additional lanes, was selected as the preferred alternative for the proposed project. Sight distance at the intersection will be improved resulting in safer left turns into and out of Kuilima Drive. The addition of traffic channelization lanes will improve the safety at the intersection.

Demolition of the existing concrete culvert under Kamehameha Highway, installation of a bridge and construction of a temporary detour route would affect Oio Stream during construction. When the project is complete, the areas of the stream affected by the project will be restored to pre-construction conditions and revegetated with native botanical species.

The 'no action' alternative was not selected because of the need to improve safety at the highway intersection. If the proposed project is not constructed, the intersection will not be brought into compliance with current State highway standards.

5. DESCRIPTION OF THE ENVIRONMENTAL SETTING

5.1. Description of the Affected Environment

This chapter provides a description of the environment affected by the proposed project. A map of the potentially affected area is shown in Figure 2.

5.2. Land use and ownership

The proposed project will affect land owned by the Kuilima Resort Company and The Estate of James Campbell. The existing State right-of-way along Kamehameha Highway is 50-feet wide.

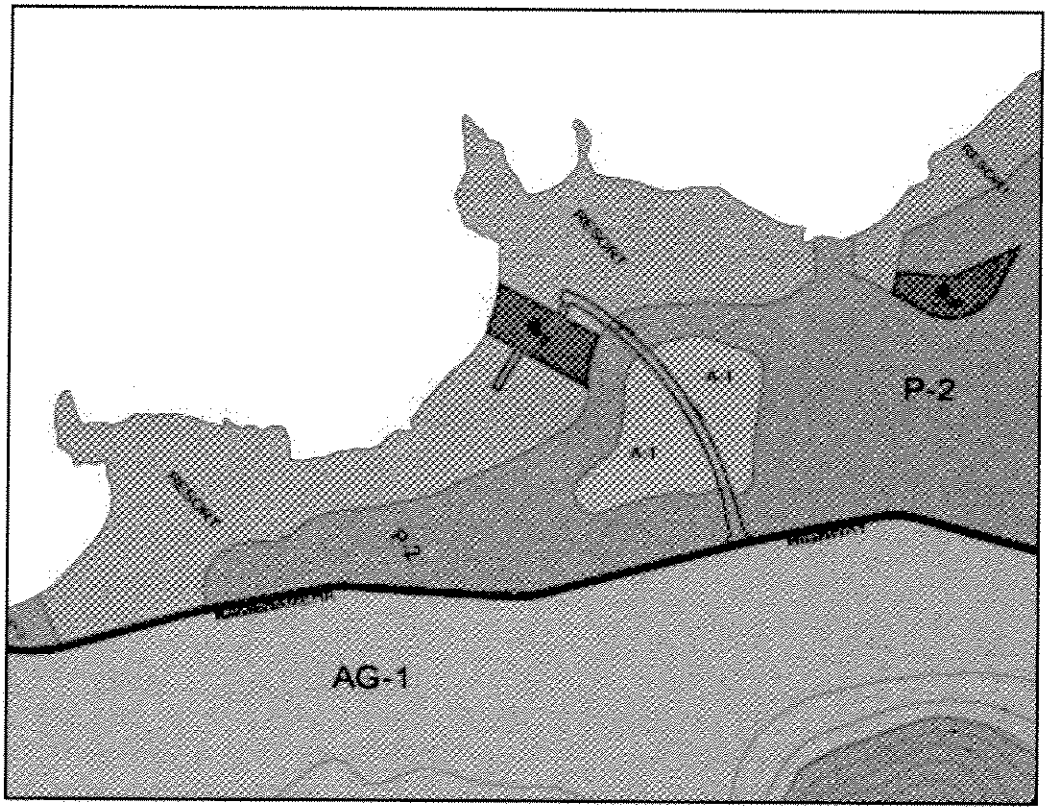

Figure 4 Zoning Map

Widening of the roadway along the makai side of the highway to accommodate traffic channelization lanes will require acquisition of right-of-way from the Kuilima Resort Company and The Estate of James Campbell. All new construction will be within the State Highway Right of Way and is not within the State Conservation Zone

Figure 4 shows the zoning surrounding the project. The resort is presently occupied by the Turtle Bay Resort and Golf Course, and is zoned P-2, General, A-1, Low-density apartments and B-1, Neighborhood business. The land use is urban. Access to Kamehameha Highway from the Turtle Bay Resort is provided by Kuilima Drive, which is a private road also owned by the Kuilima Resort Company.

Construction on the mauka side of the highway will require right of way acquisition and construction access in portions of land owned by The Estate of James Campbell. The land is leased by FPI Commercial Inc. and is used for farming. The land is zoned Ag-1, restricted, and the land use is agricultural. Additional right of way is needed parallel to Kamehameha Highway as well as upstream of the Oio Stream bridge. The State will also request that approximately 0.16 acres of an existing field be made available for construction of the temporary detour road. This land will be restored and can be returned to production when the detour road is removed.

5.3. **Existing Highway and Concrete Culvert**

Kamehameha Highway near the project is a rural principal arterial with a posted speed limit of 35 miles per hour (MPH). Kamehameha Highway serves as the main arterial providing vehicular access along the north shore of Oahu. The highway alignment is essentially straight at the project location. The grade of Kamehameha Highway near the project is relatively flat with slopes averaging 1 percent. Elevations along the highway range from 10 to 15 feet above Mean Sea Level MSL). Figure 5 shows a longitudinal section of the existing roadway. .

Kuilima Drive, the main entrance to the Turtle Bay Resort, intersects Kamehameha Highway within the project area forming a T-intersection. Kuilima Drive is a divided two-lane road with a posted speed of 25 mph. The landscaped median area at the intersection contains signage for the Turtle Bay Resort.

The Oio Stream culvert, constructed in 1931, crosses the stream approximately 170 ft. east of the Kuilima Drive intersection. The culvert is a reinforced concrete structure supported on driven piles.

There is an existing concrete agricultural (cane-haul) road bridge crossing Oio Stream on the upstream (Mauka) side of the Oio Stream culvert. This bridge is partially within the existing state right-of way. This crossing will interfere with the intersection improvements and it is proposed to eliminate this bridge without replacement.

The mauka banks of the Oio Stream near the concrete culverts are lined with cement rubble masonry. Downstream, a golf cart bridge spans the Oio Stream approximately 150 feet makai of Kamehameha Highway.

5.4. **Climate**

The climate in Kahuku is moderate. The summer months from July to October are typically drier and warmer, while the winters are usually wetter and cooler. The area is subject to prevailing northeast trade winds with average velocities around 15 mph for the majority of the year. Stronger gusts up to 25 mph do occur intermittently. Trade winds are prevalent 90 percent of the time during the summer and 50 percent in the winter. During the winter months, the area is also susceptible to Kona winds (winds from the south) and storms.

The average rainfall in the Kahuku area is between 39 and 59 inches per year. Average temperatures vary from 70 to 85 degrees Fahrenheit in the summer and from 62 to 75 degrees Fahrenheit during the winter.

5.5. Geography and Topography

The proposed project is located 0.52 miles from the Pacific Ocean shoreline on the coastal plain at the northeastern tip of the Koolau Mountain Range on the island of Oahu. The coastal plain was formed by deposition of sediments on coral reef and changes in sea level.

The Koolau Mountain Range is the eroded remnant of a major shield volcano, and forms the rugged interior boundary of windward Oahu from Makapuu Point at its southeastern most point to Kahuku Point

at its northernmost point. The topography of the Koolau Mountain Range was formed as basalt lava flows were eroded by persistent rainfall and runoff into streams.

The project lies at the northern edge of the coastal plain encompassing the area bounded by Kawela Bay, Kahuku Point, and the foothills of the Koolau Mountains. The upper elevations of the Koolau Mountains serve as the watershed for the Oio Stream basin. Oio Stream was formed as runoff from the basin concentrated over time and scoured the soil. The stream mauka of Kamehameha Highway has been classified by the U.S. Army Corps of Engineers as an ephemeral stream and is therefore not within their regulatory jurisdiction.

Figure 6 depicts the drainage area upslope of the project site. It consists of 1555 acres of mountainous terrain and coastal plain. The runoff is collected from the watershed in Oio Stream and flows under Kamehameha Highway, through the golf course to the Pacific Ocean. The flow commingles with the runoff from Punaho'olapa Marsh on the golf course and enters the ocean through the East Main Drain. The East Main Drain is a parallel array of pipes that are cyclically obstructed by sand carried into the drain by the northeastern ocean wave pattern.

5.6. **Water Resources**

The proposed project will impact the Oio Stream. The Oio Stream flows in a makai direction from an elevation of approximately 1700 feet above MSL to the coast approximately 0.7 miles southwest of Kahuku Point. The Army Corps of Engineers has determined that the Oio Stream near the project is an ephemeral stream (See Appendix A). The State of Hawaii Department of Land and Natural Resources, Commission on Water Resources Management deemed that the Oio Stream does not have sufficient flows to support in stream use, therefore a stream channel alteration permit will not be required for the proposed bridge modification (See Appendix A).

The ground water makai of Kamehameha Highway centerline is designated by the Department of Health (DOH) as below the underground injection control line. This designates the aquifer as a non-potable. The area mauka of the highway centerline is designated as above the underground injection control line. Thus, the project is over an aquifer protected as a source of drinking water.

Figure 5 Longitudinal Section

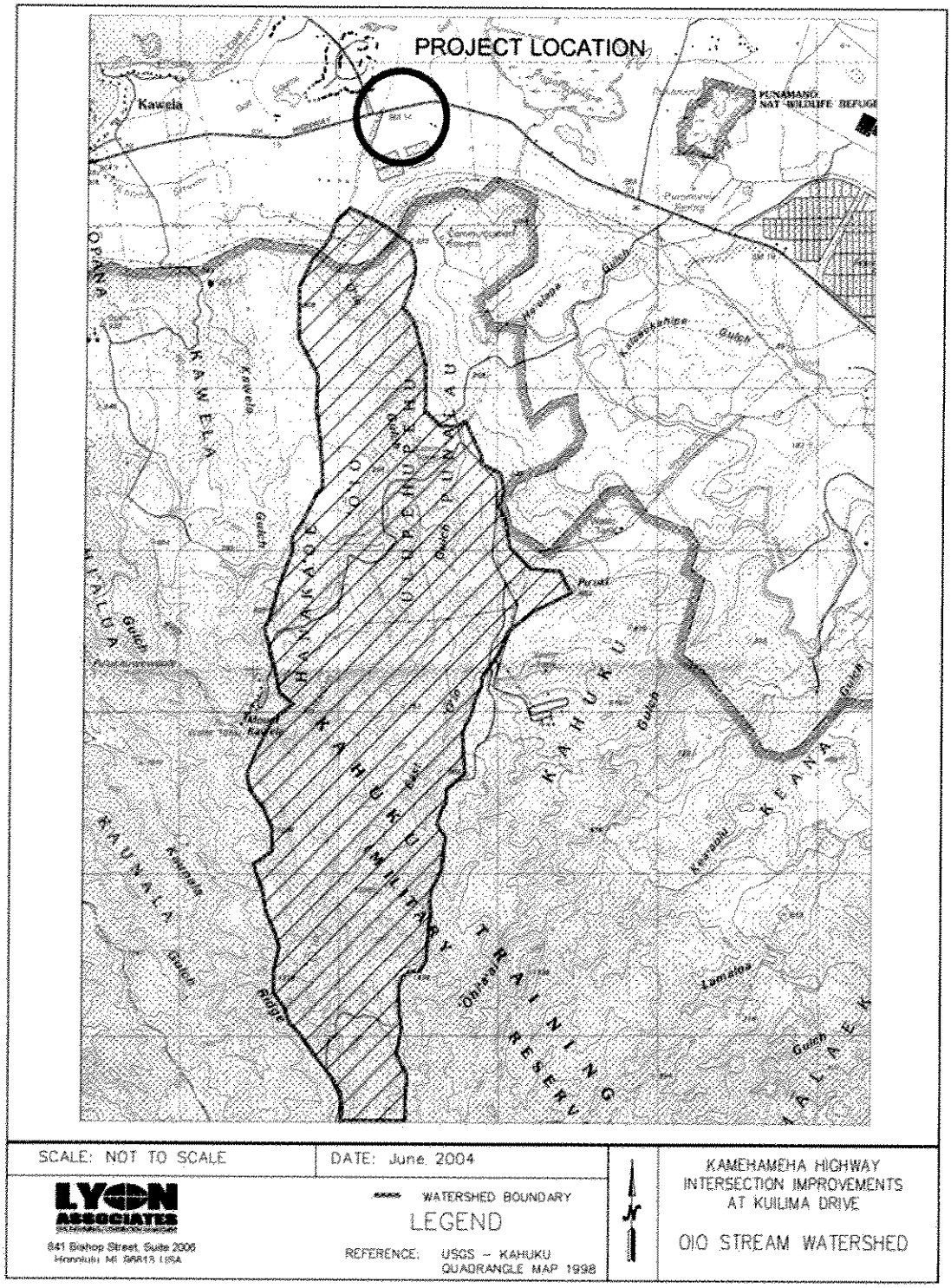

Figure 6 Oio Stream Watershed

5.7. **Natural Hazards**

The project area could be susceptible to floods, tsunamis, hurricanes, earthquakes, and other severe natural events. The severity of the impact that these natural hazards have on the area and the proposed project are as follows.

5.8. Floods

Review of Figure 7, Flood Insurance Rate Map (FIRM), reveals that the project is in Zone X area thus is determined to be outside the 500-year flood plain.

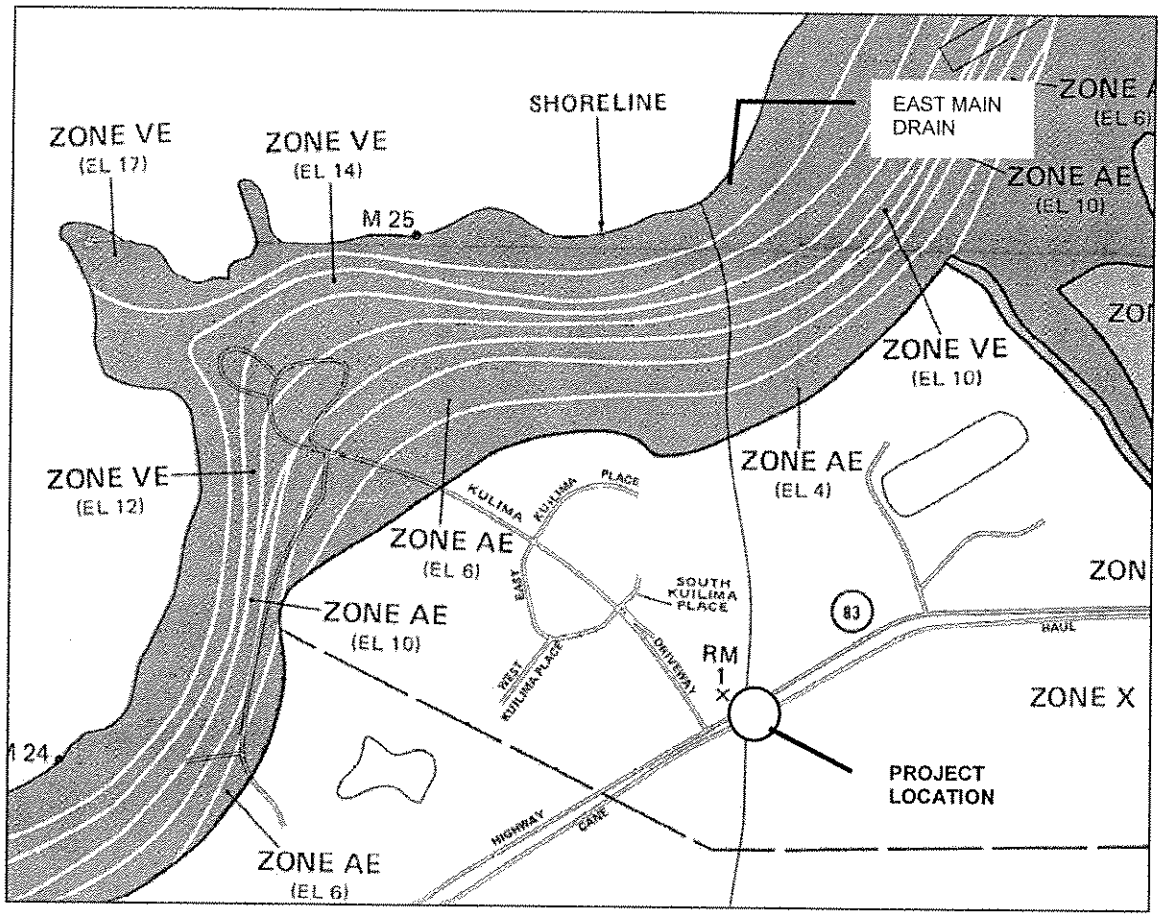

Figure 7 FIRM Map

Flow in Oio Stream was modeled as part of the design analysis for the new bridge proposed in this project.[9] The model predicts that the area surrounding the proposed project site could be flooded if Oio Stream experiences flows exceeding 1,400 cubic feet per second (CFS). It is estimated that this flow could be generated by a rainstorm of less than a 25-year recurrence rate. It should be noted, however, that the project site, and the Oio Bridge in

[9] Lyon Associates, Inc., Honolulu, Hawaii, "Hydrologic and Hydraulic Report for Kamehameha Highway Intersection Improvements at Kuilima Drive", Project No. 83B-01-99, January 2005, State of Hawaii Department of Transportation, unpublished

particular, is at a higher elevation than portions of Kamehameha Highway in the vicinity. Thus, it is expected that the surrounding area could be flooded, while the project site is not.

The City and County of Honolulu, Department of Design and Construction, in collaboration with The Turtle Bay Resort, Koolauloa Vision Team, and Oceanit, Inc. has monitored several near shore stations (Oio Stream, Turtle Bay and Kawela Bay). This effort was intended to develop baseline environmental conditions for this part of the coastline. This effort is intended to assess the potential impact of possible flood control improvements that may be considered to reduce flooding in the Kahuku area.

A Draft Report was completed in April 2002[10]. The Study focused on the East Main Drain/Oio Stream Outlet located east of the Turtle Bay Resort. It includes one year of water quality monitoring data at six stations offshore at the East Main Drain. An in-situ water-quality monitoring device was installed to obtain continuous (30 minute interval) physical water quality data at an off-shore site near the Ocean Villas parking lot located immediately east and adjacent to the Ocean Villas.

The Oceanit Report determined that minor increase in flood flow would have no adverse effect on the near shore environment because the marine community is already adapted to existing fresh water flows. This coupled with the fact that Kuilima Bay experiences strong currents that tend to move storm discharge out into the Pacific Ocean at a rapid rate, minimizes the impacts on the green sea turtle and the coastal environment in near shore waters.

The Report further concludes that minor increases in flood flow would have no adverse effect on the near shore environment because the marine community is already adapted to existing fresh water flows. The Report recommends assessing the magnitude of the changes to the streambed and its potential impact on storm water volume, velocity and water quality. Finally, the Report recommends that if a level of runoff combined with entrained pollutants is significant enough to threaten the marine environment, then engineering alternatives including retention basins in the lowland flood areas should be considered.

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[10] Oceanit, Inc., Honolulu, Hawaii, "Flood Control Improvements in Kaaawa/Hauula and Kahuku/Laie – Nearshore Baseline Environmental Monitoring Report for East Main Drain/Oio Stream Outlet for Flood Control Improvements (Contract No. F73360)." unpublished.

5.9. Tsunamis

Tsunamis are a series of destructive ocean waves generated by seismic activity that could potentially affect all shorelines in Hawaii. Tsunamis affecting Hawaii are typically generated in the waters off South America, the West coast of the United States, Alaska, and Japan, as well as from seismic activity in Hawaii.

The State of Hawaii Civil Defense establishes tsunami inundation zones and maps for all coastal areas in Hawaii. Figure 8 illustrates that only the makai edge of the Kamehameha Highway is within the tsunamis inundation zone. The proposed project site is not within the Tsunami inundation zone.
Source: Oahu Telephone Directory, 2005

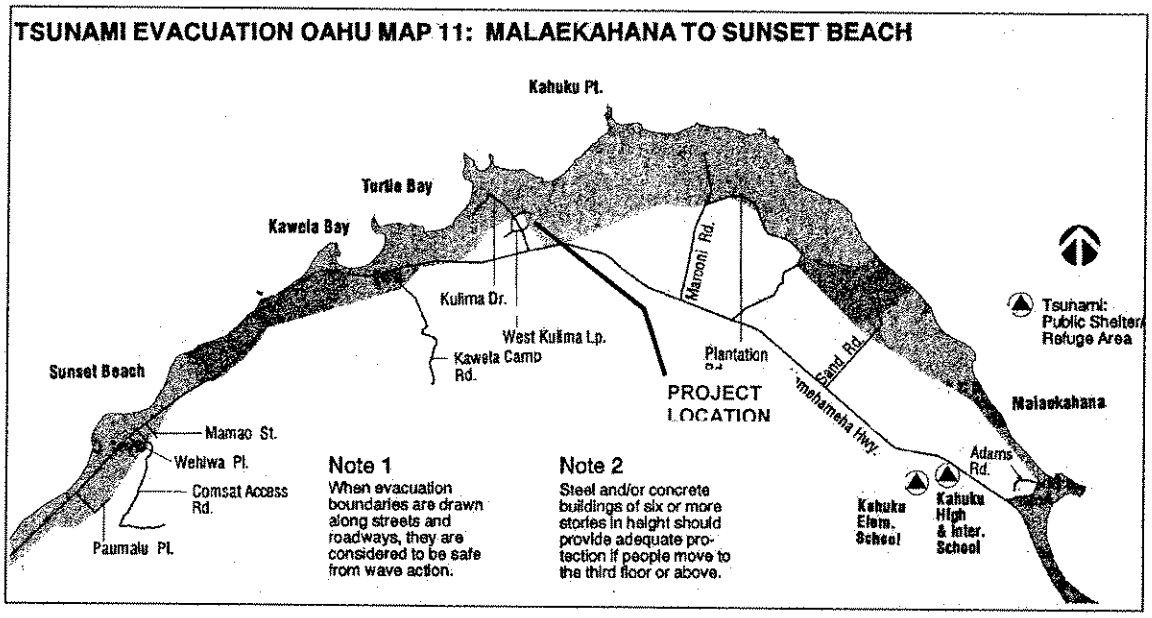

Figure 8 Tsunamis Inundation Zones

5.10. Soils

Figure 9 is reproduced from the US Department of Agriculture Soil Survey for the Islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii (August 1972). It identifies the soils along within the project limits as Kaloko clay (Kfa) and Waialua silty clay, 0 to 3 percent slopes (WkA).

Kfa soil is described as nearly level soil that occurs on coastal plains. Some areas identified as Kfa consist mainly of coral fragments or marly material; areas of clayey, very poorly drained soil that is underlain by peat or muck; and areas of dark reddish-brown, very deep, moderately well drained alluvial soil. The surface layer is dark-brown clay about 12 inches thick. The subsoil is about 8 inches thick and is dark reddish-brown and weak-red clay. Below the subsoil is mottled; white to light-gray, platy silty clay about 13 inches thick over dark greenish-gray and dark-gray massive Kfa soil is mildly alkaline to neutral throughout the profile. Permeability is moderately slow to slow, and runoff is slow to very slow, with an erosion hazard that is no more than slight.

WkA soils are found on smooth coastal plains. In a representative soil profile, the surface layer is dark reddish-brown silty clay about 12 inches thick. The subsoil is about 26 inches thick dark reddish-brown and reddish-brown silty clay with sub angular blocky structure. The substratum is dark reddish-brown, mottled silty clay. WkA soils are neutral in the surface layer and slightly acidic in the subsoil layers. Permeability of the soil is moderate, and the runoff is low with a no more than slight erosion hazard.

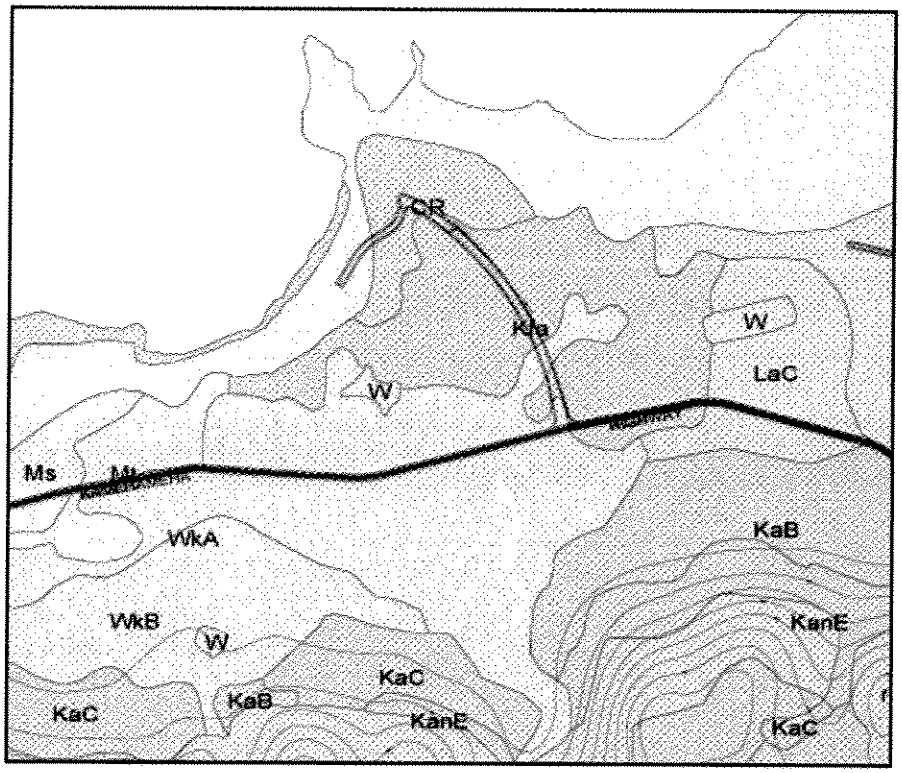

Figure 9 Soil Survey Map

Underlying the surface clay and silt deposits, soil borings at the site revealed silty coralline gravels and sand to a depth of about 42 feet below the surface. Fractured basalt was then encountered.

5.11. Aquatic biology

The Oio Stream is a somewhat degraded, partially channelized, ephemeral drainage ditch. Agricultural practices in the area, channelization, and deposition of silt are characteristic of Oio Stream upstream of the highway. The stream crosses Kamehameha Highway through a culvert and travels across Kuilima Golf Course and discharges to the Pacific Ocean through parallel pipe culverts on the Turtle Bay Resort property.

The previously mentioned Draft Report by Oceanit, Inc. concludes that the East Main Drain outfall, with its present water quality and flow rate is not impacting near shore coral, fishery resources, adjacent surfing or other recreational uses of this shoreline.

The green sea turtle and may frequent the offshore marine area during certain seasons. The green sea turtle (Chelonia mydas), although not endangered, is listed as a threatened species under the U.S. Endangered Species Act.

The proposed project will not increase the flood flow in the downstream reach of Oio Stream nor will it increase the level of runoff with entrained pollutants. It is therefore concluded that the project will not affect aquatic biology.

5.12. Wetlands

The proposed project site is not located within a wetland or wildlife preserve. Punaho'olapa Marsh, owned by Kuilima Resort Company, is located over 2,500 feet to the east. It is maintained as a habitat for native Hawaiian water birds and other wetland species. The marsh is protected and managed in accordance with the "Revised Wetland Development Plans for Punaho'olapa Marsh" suggested by the United States Department of the Interior, Fish and Wildlife Service.

All four of the Hawaiian water birds sighted at the Punaho'olapa Marsh, the Hawaiian Stilt, the Hawaiian Duck, the Hawaiian Gallinule and the Hawaiian Coot are listed on the State of Hawaii and Federal endangered species list.

The project site is also located about 1.2 miles from the James Campbell National Wildlife Refuge that serves as a habitat for Hawaiian water birds. Figure 10 shows the location of the Punaho'olapa Marsh and the James Campbell National Wildlife Refuge with respect to the project site.

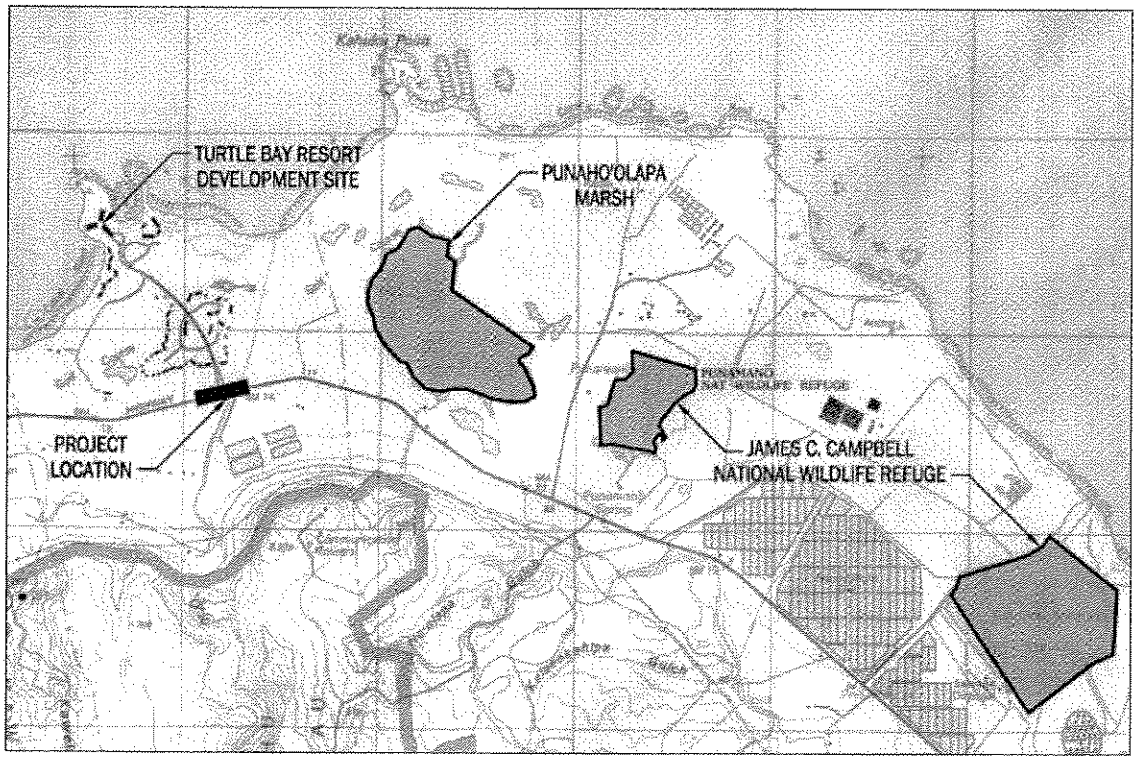

Figure 10 Wetlands near the project

The project's distance from these two habitats will provide a more than adequate buffer to ensure protection for the native Hawaiian water birds.

5.13. Flora

The project site is bounded on the North (Makai) by Kuilima Golf Course. The Kuilima Drive Intersection median is planted with ornamental shrubs, flowering plants, coconut trees and lawn.

The "Revised EIS for the Kuilima Resort Expansion" dated 7 October 1985, prepared by Group 70, noted the following in a reconnaissance-level vegetative survey:

"On the Resort grounds many ornamental and landscaped plant species were observed accompanied by weedy vegetation that occurs in patches throughout the Resort area."

Other plants previously identified on the Resort property, but not near the project site, include other common species e.g. ironwood, coconut, false kamani, monkeypod, African tulip, authograph, coral, hala, bech heliotrope, kou plumeria sea grape, and silver buttonwood trees. Both date coconut and loulu palm are included. The herb layer in the resort included Bermuda, wedelia, seashore paspalum, zoysia, mondo grasses, bird of paradise, bougainvillea, canna, croton, tiare gardenia, ginger, heliconia, hibiscus, monstera, oleander, philodendron selloum, sanchezia, spider lily, ti, dwarf carrissa, ilima, lauae liriope, naupaka, pothos, walking iris, wax ficus and beach morning glory.

The property line (ROW Line) along the golf course is planted with a hibiscus and oleander hedge.

The southerly property adjacent to the site is generally consists of agricultural fields planted in banana near the project site. The borders of the cultivated fields contain weedy vegetation and overgrowth primarily halekoa. A stand of Ironwood trees borders the ROW for about 500 feet along the southwestern line.

None of these species is considered rare, threatened or endangered.

Because the project will convert portions of existing planted area to Highway ROW, the plants and landscaping in these areas will be relocated or replaced in kind.

5.14. Avifauna and Fauna

5.14.1. Avifauna

The following indigenous birds and alien (introduced) birds as having been sighted or presumed to habitat the Kuilima area[11]:

Indigenous: Black-crowned Night Heron, Golden Plover, Osprey, and wedge tailed shearwater

Alien: Cattle Egret, Spotted or Laced-necked Dove, Barred Dove or Zebra Dove, Barn Owl, Melodious Laughing-thrush, Red-vented Bulbul, Shama, Japanese Bush Warbler, Japanese

[11] Group 70, Honolulu, Hawaii, "Revised Environmental Impact Statement Volume I Kuilima Resort Expansion", 7 October 1985, unpublished

White-eye, Common Indian Myna, Spotted Munia or Ricebird, Black-headed Munia, House Sparrow, Red-eared Waxbill, Red-crested Cardinal, Cardinal, and House Finch.

It is expected that these birds are more prevalent in the undeveloped areas and for the most part appear in lesser number near the developed Turtle Bay Resort and Kamehameha Highway. None of these birds is considered endangered or threatened.

5.14.2. Fauna

The following mammals, none of which are considered endangered or threatened, were sighted in the Kuilima area and like the bird population are more prevalent in undeveloped areas[12]: house mouse, roof rat, Polynesian rat, Norway rat, small Indian mongoose, feral cat and feral dog.

No impact on the marine environment is anticipated.

5.15. Transportation

The predominant mode of transportation at the project area is motor vehicles. Other modes include city bus, pedestrians and bicycles. Kamehameha Highway and Turtle Bay Resort are serviced by the City Bus system.

Kamehameha Highway (Route 83) is a rural road connecting several communities on the windward side of Oahu. Kamehameha Highway serves as the only route for travel between Haleiwa and Kaneohe. Six rural communities are served by the highway including Laie and Kahuku. The highway is State maintained with a 50-foot right of way and 10-foot lanes in either direction. Kuilima Drive, the only access serving Turtle Bay Resort, intersects Kamehameha Highway 170 feet west the Oio Bridge. The posted speed limit is 35 miles per hour approaching the bridge and intersection from either direction.

To the immediate west of the project area on the Mauka side of the highway is an unimproved access road (cane-haul road) owned by the James Campbell Estates. The road crosses Oio stream on a one lane concrete bridge within the State right -of -way. The access road primarily serves the estate's agriculture operations. Traffic use information is not available for the road; however, reconnaissance observations indicated that the road is used primarily by farmers, agricultural workers, and employees of James Campbell Estate. Access to the adjacent fields will be unaltered by the project. The bridge will be removed by the project.

An access road to the Kuilima Sewage Treatment Plant intersects Kamehameha Highway east of Oio Stream Bridge within the project area. It is proposed to reroute this entrance to the east of its present location to accommodate changes in road grade at the new bridge. Access to the plant will be maintained during construction.

5.15.1. Vehicle traffic

The character of the area around the project site is rural. High volumes of tourist traffic are experienced during the day, as Kamehameha Highway is the only route connecting the Oahu north shore communities. Additionally, the highway is the only emergency route between Haleiwa and Kahuku.

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[12] Group 70, Honolulu, Hawaii, "Revised Environmental Impact Statement Volume I Kuilima Resort Expansion", 7 October 1985, unpublished

A traffic analysis was completed to review flow patterns at the Oio Bridge and assess potential impacts of the proposed project on traffic in the area. Data for the analysis was obtained from the State DOT 24-hour traffic counts from one counting station near the site.

The data used is from State DOT traffic survey Station 26-F. It is located on Kamehameha Highway at Kii Bridge, approximately 2 miles east of the project location. Since there are no significant exit or entrance points between Kii Bridge and Oio Stream, the traffic volume at Kii Bridge is considered to represent the volume at Oio Bridge as well. The survey date is April 18, 2001 (Wednesday).

The 24-hour volume at 15-minute interval is shown in Figure 11. The data is summarized in the Table below.

	Total	West		East	
Daily Volume	6,393	3,136		3,257	
April 18, 2001 Wednesday		**Number**	**Peak Hour Factor (PHF)**	**Number**	**Peak Hour Factor (PHF)**
A.M. Peak					
1100-1200		258	0.88	217	.85
P.M. Peak					
1415-1515		275	0.79		
1530-1630				304	0.90

Source: State of Hawaii, Department of Transportation

Table 1 24-Hour Traffic Summary, Kii Bridge - April 18, 2001, Wednesday

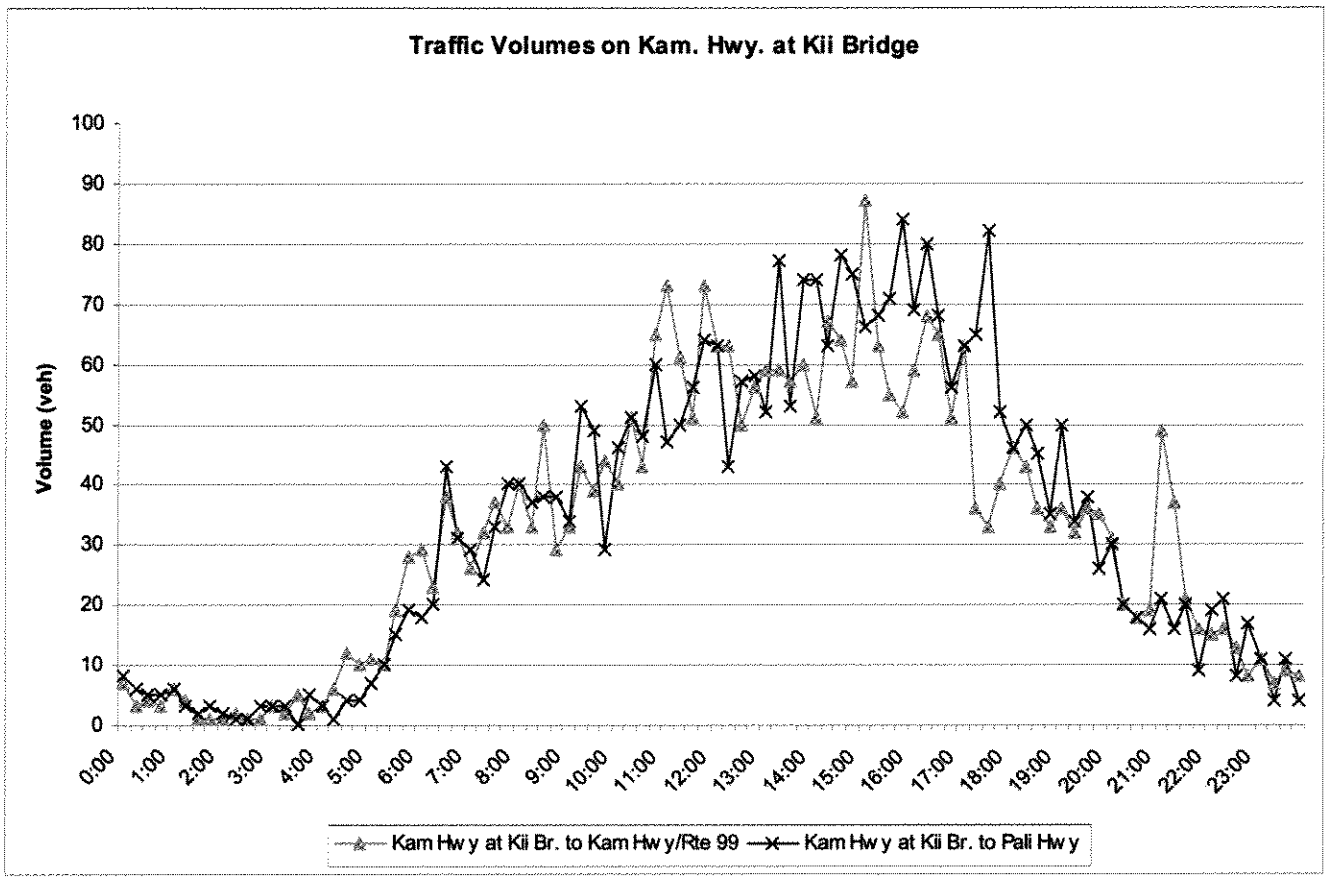

Figure 11 Traffic Volumes

5.15.2. Public Transit

The Turtle Bay Resort is a scheduled stop for Routes 55 and 88A. It can be expected that on weekdays, a bus will arrive and depart Turtle Bay Resort every 15 minutes.

5.16. Cultural Resources

Cultural resources are prehistoric and historic sites, structures, districts, artifacts, or any other physical evidence of human activity considered important to a culture, subculture, or community for scientific, traditional, religious, or any other reason. For the purpose of the EA, cultural resources are defined to include prehistoric and historic archaeological sites, historical buildings and structures, and traditional (i.e., native Hawaiian) sites.

Because this document analyzes potential impacts from an undertaking that is partially financed by federal funds, federal statutes and regulations also apply. In addition to NEPA, these laws include the National Historic Preservation Act and its implementing regulations (36CFR 800) and the Native American Graves Protection and Repatriation Act (NAGPRA). Review of cultural resources also has been conducted in accordance with Hawaii Revised Statutes, Chapter 6E, Historic Preservation. Potential effects on cultural and historical resources also are a component of the Coastal Zone Management Act review process.

To prevent sensitive archaeological areas from unauthorized collection and/or vandalism, the Freedom of Information Act (5 USC 552(b)) exempts site location information from disclosure; therefore, no site location maps are provided within this EA. Site records can be reviewed at the Hawaii State Historic Preservation Division, Department of Land and Natural Resources (HPD, DLNR).

The area of potential effect (APE) for cultural resources encompasses approximately 5.54 acres of land at the intersection of Kamehameha Highway and Kuilima Drive. In conjunction with the previously sited Revised EIS for the Resort, an archaeological survey and study was completed for the entire Kuilima Resort area. Subsurface archaeological deposits were found at Kawela Bay, Kahuku Point and Punaho'olapa Marsh. No subsurface archaeological deposits were found at the 26-acre Turtle Bay Resort site. The area mauka of the highway has been in agricultural use for decades.

5.17. Historic Buildings and Structures

The only structures within the project area are the concrete culvert under the highway; the highway itself and a small cane haul bridge over Oio Stream. None are listed on the Hawaii or National Registers of Historic Places or Structures

5.18. Socioeconomic Changes

The socioeconomic characteristics of the project area include demographics, employment, and commercial activities. The Turtle Bay Resort development is the dominant economic generator within this district. The hotel has been in operation since the early 1970's.

The Kahuku Community has been a relatively stable residential community with little change over the past 30 years or more. This is a typically "country" area where homes are relatively small with an older look. The Turtle Bay Resort is located at Kuilima Point, which is relatively secluded from the residential areas of Kahuku. Turtle Bay Resort has been a part of the Kahuku Community for approximately 30 years, and largely, due to its isolated location, has not had a significant adverse effect on the community.

The Turtle Bay Resort presently offers employment to many residents of the Kahuku area and other communities on the North Shore. The construction will cause temporary inconvenience to these employees and likely increase their travel time to and from work. This project will generate temporary construction jobs but is not expected to generate a significant increase in permanent employment for the district.

5.19. Noise

Noise is defined as sound that is undesirable because it interferes with speech communication and hearing, or is intense enough to damage hearing, or is otherwise annoying. Under certain conditions, noise can interfere with human activities at home or work and affect people's health and well being. The accepted unit of measure for noise levels is the decibel (dB) because it reflects the way humans perceive changes in sound amplitude. Sound levels are easily measured, but human response and perception to the wide variability in sound amplitude is subjective.

Different sounds have different frequency content. When describing sound and its effects on a human population, A-weighted (dBA) sound levels are typically used to account for the response to the human ear. The term "A-weighted" refers to a filtering of the noise signal to

emphasize frequencies in the middle of the audible spectrum and to de-emphasize low and high frequencies in a manner corresponding to the way the human ear perceives sound. This filtering network has been established by the American National Standards Institute (ANSI 1983). The A-weighted noise level has been found to correlate well with a person's judgment of the noisiness of different sounds and has been used for many years as a measure of community noise. Sound levels created by various machinery are illustrated in Figure 12.

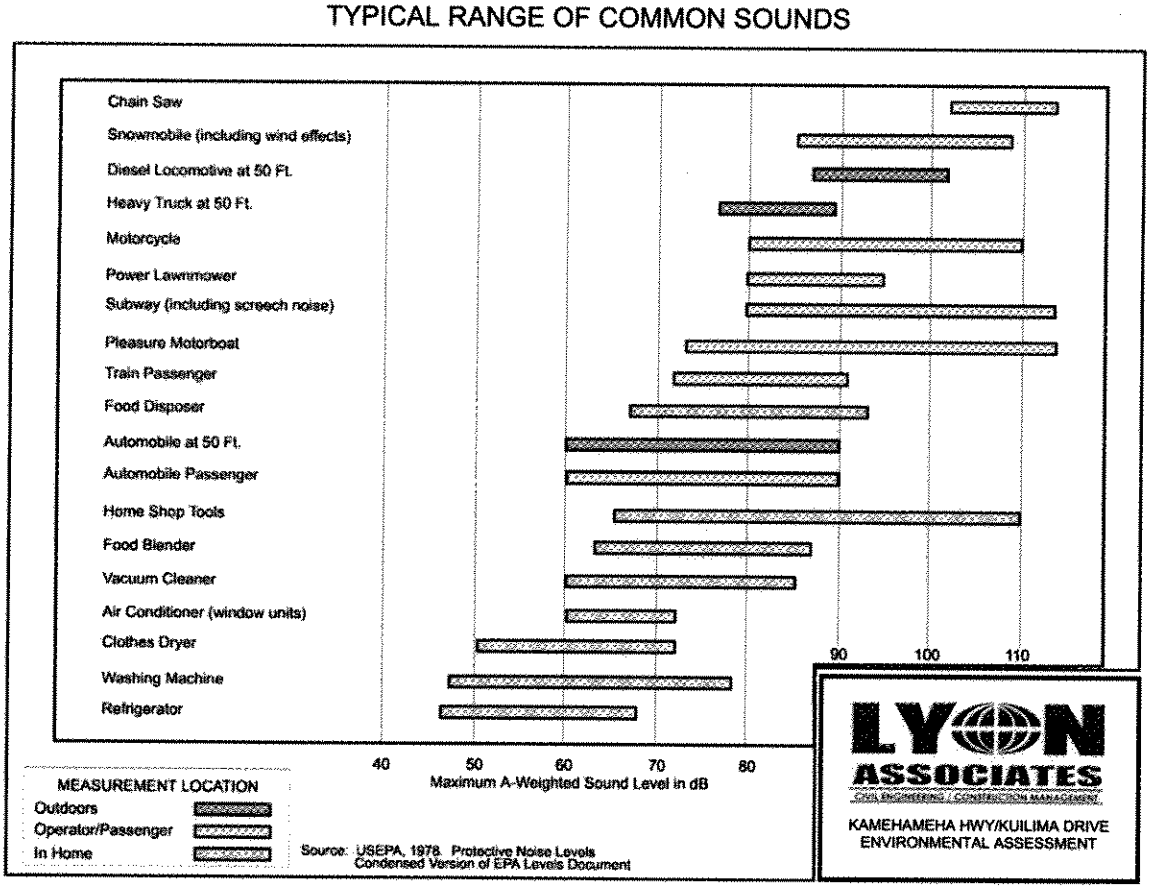

Figure 12 Comparative Noise Levels

Community noise levels change continuously during the day; therefore, to compare levels over different times, several descriptors have been developed that take into account this time-varying nature. The most common descriptor is the annual average day-night sound level (Ldn). The Ldn is the average A-weighted level for a 24-hour period with a 10dB upward adjustment added to the nighttime levels (10:00 PM to 7:00 AM). This adjustment accounts for the increased sensitivity of most people to noise in the quiet nighttime hours. Ldn has been adopted by many federal and state agencies as the accepted unit for quantifying human annoyance to general environmental noise and for assessing and correlating the various effects of noise on human and animals, including land use compatibility, sleep interference, annoyance, hearing loss, speech interference, and startle effects.

The Hawaii State Department of Health monitors noise issues in accordance with HRS, Title 19, Chapter 342F. Noise permits are issued by the Director only when excessive noise

levels are expected. In addition, the Occupational Safety and Health Act of 1970 (OSHA) was established to "assure safe and healthy working conditions for working men and women." OSHA regulations established a maximum noise level of 90 A-weight decibels (dBA) for continuous 8-hour exposure (typical work day); maximum noise levels for shorter periods are higher.

5.19.1. Affected Environment

The nearest sensitive noise receptors (human) to this project area would be the Turtle Bay Resort condominiums (Ocean view villas) the nearest of which is approximately 500 ft away. Additionally, there will be resort guests and residents playing golf adjacent to the construction site. The 17th tee is about 25 feet from the construction site boundary and the 4 tee and 16th green are about 150 feet from the Highway.

The nearest significant wildlife sensitive noise receptors are more that 2,000 feet from the project area.

The primary contributor of noise in the project area is vehicular. As describe in Section 5.11, the Kamehameha Highway is the primary transportation corridor along this section of the windward Oahu. Because of this, traffic is somewhat continuous and ambient daytime noise levels are intermittently above that which is expected in a rural landscape.

5.20. Visual Resources

Visual resources are the aggregate of characteristic features imparting visually aesthetic qualities to a natural, rural, or urban environment. This resource is assessed during the environmental assessment process to determine whether projects will be compatible with the existing landscape. Potential visual resource effects are also a component of the Coastal Zone Management Act review process.

5.20.1. Affected environment

The City and County of Honolulu commissioned the "Coastal View Study" dated 1987 that recognized this area. The study indicated that due to the 2,000-foot distance between the shoreline and the coastal highway (Kamehameha Highway) views of the ocean from the highway are too far to be of significance. Roadway views instead focus on the landscape frontage of Turtle Bay Resort and include penetrating views the golf course. The landscape along this segment of Kamehameha Highway is predominantly rural in visual character. Vegetation buffers both sides of the Kamehameha Highway. The Turtle Bay Resort with its golf course is on the makai side of the highway and an agricultural plane below the pali is on the mauka side. The scenic vistas and/or view planes will not be permanently diminished by this project.

Construction activities adjacent to the 17 Tee of the Kuilima golf course may cause short-term distraction for players.

5.21. Air Quality

Existing air quality conditions and the potential effects of the proposed action on these conditions are required to be assessed as part of the Chapter 343, HRS, the environmental assessment process. Ambient air quality, which refers to the purity of the general outdoor atmosphere, is regulated under the Clean Air Act and the EPA National Ambient Air Quality

Standards (NAAQS) (50CFR 40). The State of Hawaii Department of Health also regulates air quality and established ambient air quality standards (Chapter 11-59, HAR) that are as strict or in some cases stricter than the NAAQS. Table 2 summarizes the national and state ambient air quality standards.

The Department of Health has been monitoring ambient air quality in the State of Hawaii since 1957. Until 1971, there was only one air-monitoring site, which was located on the island of Oahu. The number of stations in the state's ambient air monitoring network varies according to the current needs and requirements. Today there are 16 stations, 9 on Oahu, 1 on Kauai, 2 on Maui and 4 on Hawaii. The primary purpose of the statewide monitoring network is to measure ambient air concentrations of the six criteria pollutants that the United States Environmental Protection Agency (EPA) has promulgated National Ambient Air Quality Standards (NAAQS). The six criteria pollutants with NAAQS are: carbon monoxide, nitrogen dioxide, sulfur dioxide, lead, ozone, and particulate matter less than or equal to 10 micrometers (PM10).). PM10 comprises approximately half of the total suspended particulate matter (TSP) in Hawaii. The State of Hawaii also established standards for fugitive dust emissions emanating from construction activities. This standard prohibits any visible release of fugitive dust from construction sources.

Pollutant	*Averaging Time*	*National Ambient Air Quality Standard[a] ppm (μg/m³)*	*Hawaii Ambient Air Quality Standard[b] ppm (μg/m³)*
Carbon Monoxide	1-hour	35 (40,000)	9 (10,000)
	8-hour	9 (10,000)	4.5 (5,000)
Nitrogen Dioxide	Annual	0.05 (100)	0.035 (70)
Sulfur Dioxide	3-hour	0.5 (1,300)	0.5 (1,300)
	24-hour	0.14 (365)	0.14 (365)
	Annual	0.03 (80)	0.03 (80)
Fine Respirable Particulate Matter	24-hour	150 $\mu g/m^3$	150 $\mu g/m^3$
	Annual	50 $\mu g/m^3$	50 $\mu g/m^3$
Ozone	1-hour	0.120 (235)	0.051 (100)
	8-hour	0.080 (157)	0.080 (157)
Lead	Quarterly	1.5 $\mu g/m^3$	1.5 $\mu g/m^3$

a. National standards, other than ozone and those based on annual or quarterly averages are not to be exceeded more than once a year. Standards based on annual or quarterly averages are not to be exceeded. The ozone standard is not to be exceeded on more than an average of 1 day a year over a 3-year period.

b. Hawaii standards, other than those based on annual or quarterly averages, are not to be exceeded more than once in any 12-month period. Standards based on annual or quarterly averages are not to be exceeded.

Table 2 National and State Ambient Air Quality Standards

The State of Hawaii also has standards for carbon monoxide and nitrogen dioxide more stringent than the NAAQS and an ambient air standard for hydrogen sulfide. Ambient air monitoring for lead was discontinued in October 1997 with EPA approval. Since sampling for lead began, levels in the state have been far below the federal standard, and with the

elimination of lead in gasoline, measured levels were consistently zero or nearly zero. In addition, in September 2001, the state's ozone standard was revised from a one-hour 100 µg/m3 to an eight-hour 157 µg/m3 standard to reflect the latest health studies and to be consistent with the new federal eight-hour ozone standard.

Most commercial, industrial and transportation activities and their associated air quality effects occur on Oahu where nine of the stations are located. Agricultural operations produce the greatest air quality impacts on Maui and Kauai. Impacts on ambient air quality from the ongoing eruption of the Kilauea Volcano and from activities associated with geothermal energy production are being monitored on the island of Hawaii. Current plans call for the continuation of sampling at these sites, however, relocations, additions and/or discontinuations can occur in the future as the need arises

The following section describes the existing ambient air quality conditions at the Kamehameha Highway intersection improvements at Kuilima Drive area.

5.21.1. Affected Environment

There is no ambient air quality monitoring station in the vicinity of the project area. The nearest monitoring site on the windward side of Oahu is in Waimanalo. In general, however, it can be assumed that air quality at the project area is good. Persistent trade winds during approximately 70 percent of the time in the summer months and 50 percent of the time in the winter months contribute to favorable climatic conditions in the area for air quality. Agricultural activities (spraying of pesticides and fungicides) and natural sources (sea spray and pollen) also contribute to air pollution in the area. Agriculture activity, however, has declined. The most noteworthy source of air pollution is the vehicular traffic that produces carbon monoxide (CO) and carbon dioxide (CO_2).

Although it is located 25 miles to the south, air quality data from Waimnalo gives an indication of ambient air quality levels in the project area. Waimanalo is a rural community on the windward side of Oahu with similar characteristics to the project area. There is little commercial and industrial activity other than the Waimanalo sewage treatment plant where the monitoring site is located. The State has monitored PM10 in Waimanalo since 1971, and the data indicates that particulate levels are within federal and state standards. Table 3 shows PM 10 monitoring data for Waimanalo.

Particulate Matter ($\mu g/m^3$); Monthly Average – 24-Hour Sampling

	Month												
Year	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual Average*
1979	34	30	38	31	30	30	32	26	26	30	30	24	30
1980	30	29	46	39	24	25	24	23	25	27	34	23	29
1981	34	37	27	23	26	31	24	22	20	20	37	32	28
1982	20	31	29	31	30	17	31	25	29	19	34	27	27
1983	20	38	26	28	23	22	20	20	21	26	21	19	26
1984	23	17	29	27	22	22	27	23	16	23	24	36	25
1985	24	25	43	29	29	24	24	18	20	27	20	39	26
1986	30	39	36	37	28	26	20	22	22	23	32	23	28
1987	29	32	30	28	28	25	27	26	28	22	21	30	25
1988	34	43	36	27	25	22	29	26	25	18	27	34	29
1989	30	30	24	32	33	30							

PM-10* ($\mu g/m^3$); Monthly Average – 24-Hour Sampling

	Month												
Year	*Jan*	*Feb*	*Mar*	*Apr*	*May*	*Jun*	*Jul*	*Aug*	*Sep*	*Oct*	*Nov*	*Dec*	*Annual Average*
1989							19	16	13	16	16	13	16
1990	20	15	14	15	14	15	11	11	16	16	20	18	15
1991	17	22	23	19	27	12	11	13	13	11	16	19	17
1992	17	16	16	19	18	19	16	17	21	12	15	17	17
1993	12	15	17	16	32	--	20	18	12	14	14	18	17

Particulate matter equal to or less than 10 microns in diameter. Source: Hawaii State Department of Health

Table 3 Hawaii Air Monitoring Data

5.22. Hazardous Wastes and Materials

No known hazardous wastes and materials or petroleum is stored at the project site. There are no known sources of contamination in the project area.

5.23. Utilities and Infrastructure

Utility lines and infrastructure are located in or near the project area, including electric lines and poles, telephone and cable lines, water pipelines, storm drains, sewer force main and traffic signs. Electric lines run aboveground on the makai side of Kamehameha Highway, and water lines run below the existing shoulder along Kamehameha Highway. There are two power/cable/telephone lines crossing the highway within the project area.

The nearest fire stations are located at Sunset Beach and Kahuku, and are a distance of 3 miles away in either direction. Approximate response time from the Kahuku Fire Station under ideal conditions is seven minutes. Fire hydrants are along Kuilima Drive and Kamehameha Highway. Police protection is provided through the City and County of Honolulu, Kaneohe District Headquarters. Approximate response time under ideal conditions is seven minutes to the project area.

The nearest health care facility is the 26-bed Kahuku Hospital in Kahuku.

Turtle Bay Resort is serviced by a Board of Water Supply (BWS) distribution system that includes a 20-inch main from a 2.0 million gallon reservoir to Kamehameha Highway. This 20-inch main connects to a 16/12-inch main the runs along the makai side of Kamehameha Highway to Kuilima drive.

The wastewater from resort flows to a pump station located on the northwest side of Kuilima Drive just before the entrance to the Turtle Bay Resort main parking area. The pump station transports the wastewater to the Kuilima Resort Company Wastewater Treatment Plant (a private treatment plant) located on the mauka side of Kamehameha Highway. The effluent from the wastewater plant is returned to irrigate the golf course. Injection wells within the golf course are used as a back up disposal method in the event of inclement weather or mechanical interruptions.

6. ANTICIPATED ENVIRONMENTAL IMPACTS AND MITIGATION MEASURES

6.1. Anticipated Environmental Impacts and Proposed Mitigation Measures

Chapter 343, HRS, and Title 11-200-10 Hawaii Administrative Rules (HAR) require the identification and summary of impacts or effects on the environment within the project area or APE. Project related actions, both detrimental and beneficial, include primary, secondary, and cumulative effects. Primary effects are those that are caused by the action and occur at the same time and place. Secondary effects are those that are caused by the action and occur later in time or farther removed in distance, but are still reasonably foreseeable. Cumulative effects refer to those that result from the incremental impact of an action, when added to other past, present, and reasonably foreseeable future actions. Cumulative impacts can result from individually minor, yet collectively significant actions taking place over a period.

Effects of the proposed project may also be divided into short-term and long-term effects. Short-term effects are related to construction activities. Long-term effects refer to those caused from the operation of the proposed action, and are longer in duration.

Environmental assessments are required to contain a summary of proposed mitigation measures. These measures are designed to lessen the extent or duration of anticipated environmental effects.

The following is a summary of anticipated environmental effects and proposed mitigation measures for the Kamehameha Highway intersection improvements at Kuilima Drive. In general, environmental impacts will be short-term and related to construction activities.

6.2. Water Resources

Water resources, including drainage, stream flow, and water quality, will be temporarily affected by the proposed project. Environmental effects related to water resources are anticipated to be short-term and primarily related to construction activities. It is anticipated that there will be no long-term negative effects to water resources from the proposed action.

The Oio Stream drainage will be temporarily affected during the placement and removal of the existing culverts, installation of a new bridge and grading activities for the project. The existing drainage conditions, however, will be retained throughout the duration of the construction activities.

The replacement of the existing culvert with a bridge is anticipated to have a beneficial impact on long-term drainage of Oio Stream. The bridge will increase the capacity to accommodate storm water flows. The potential for obstruction of flow by debris accumulating under the bridge will be reduced, and, the frequency of maintenance to remove debris from under the bridge will decrease.

Due to the proximity of the project area to the coast (approximately 1 mile) and the existing water quality conditions, there are no anticipated long-term impacts for coastal waters. Increased sediment from the existing culvert demolition, placement and removal of the culvert for the detour road and construction of the bridge may temporarily affect water quality in the near shore area, but this is expected to be short term.

6.2.1. Cumulative Impacts

No other projects (federal, state, county or community) have been identified in the Oio Stream water shed or near the project site[13]. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative effects on water resources are expected.

6.2.2. Mitigation Measures

Even though Oio Stream is considered an ephemeral stream, culverts will be placed in the stream during the construction of the detour road in order to provide drainage for the duration of the project. The new stream channel across Kamehameha Highway will be constructed before the existing culvert is completely removed. Construction activities will be scheduled to avoid periods of heavy rains that may cause related delays.

During the construction, temporary erosion control best management practices (BMPs) will be implemented by the contractor. This includes, but is not limited to, the creation of control swales to channel runoff near the detour culvert, establishment of sediment traps, and construction of drainage control berms. Areas graded and denuded of vegetation will be covered by mulch during all phases of the project. Silt fences along the stream will be used to reduce silt transport and short-term erosion.

To the extent feasible, new bridge abutments will be constructed prior to the complete removal of the existing culvert in order to minimize the potential to water quality degradation. The contractor will comply with requirements of Section 639, "Temporary Project Water Pollution Control (Soil Erosion)," of the Standard Specifications for Road and Bridge Construction, State of Hawaii.

Permanent erosion control measures will be implemented immediately in the project area including the revegetation of the stream banks as the work reaches completion. A water quality monitoring program may be required during construction, pursuant to the requirements of the 401 Water Quality Certification.

6.3. Aquatic Biology

No aquatic species have been identified in the project area within Oio Stream.

Agricultural activity mauka of the project area continue to have some negative affect on the local aquatic population downstream and the near shore waters of the ocean. The impacts of construction activities to aquatic biota down stream are anticipated to be negligible. Any additional degradation is expected to be short-term and the existing ephemeral stream ecology will return following the completion of this activity. It is anticipated that aquatic species will most probably not suffer additional long-term negative effects because of the already degraded and silted conditions of their existing habitat due to natural erosion and agricultural actives upstream.

6.3.1. Cumulative Impacts

[13] The State Highway Department reports that the Kawela Stream Bridge, located about 3/4 mile to the west, will be replaced in 2006. This work is not expected to impact the Oil Stream water resources.

No other projects (federal, state, county or community) have been identified near the Kamehameha Highway intersection improvements at Kuilima Drive. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative effects on aquatic biology are expected.

6.3.2. Mitigation Measures

Erosion control best management practices will be used to control turbidity and decrease negative effects on water quality and the downstream ephemeral stream habitat (see Section 6.2).

6.4. Flora and Wetlands

Construction of the temporary detour road, intersection improvements and bridge construction will have short impacts on vegetation. Approximately 5.54 acres of riparian area will be disturbed; however, given the existing botanical conditions within the project area and the short duration of the construction activities, the proposed action is not expected to have any significant negative effects.

6.4.1. Flora

The project proposes to relocate existing hedges and several trees on the Turtle Bay Resort property. The relocation work will be consistent with the alterations to the entrance drive to provide acceleration and deceleration lanes.

It is anticipated that approximately 14 Ironwood trees bordering Kamehameha Highway on Campbell Estate property will be removed to accommodate the detour road alignment.

6.4.2. Wetlands

The wetland area of Punaho'olapa, which is over 2000 ft to the east, will not be affected by the proposed action.

6.4.3. Cumulative Impacts

No other projects (federal, state, county or community) have been identified near the Kamehameha Highway intersection improvements at Kuilima Drive project. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative effects on the floral resources and wetlands are expected.

6.4.4. Mitigation Measures

Wherever possible, grading and disturbances to vegetation in the area will be minimized. To the extent possible, areas will be revegetated with endemic, indigenous species to reduce erosion in the ephemeral stream area.

All projects related materials will be placed or stored in ways to avoid or minimized disturbance to the ephemeral stream area.

6.5. Avifauna and Mammals

Construction activities such as clearing and noise associated with the proposed action would temporarily affect local avifauna and mammal species near the project area. In particular, water birds that visit the area would be discouraged from foraging or nesting in the area during construction activities. Clearing of the near-stream vegetation will reduce cover used by various bird species. Effects on birds and their habitat are anticipated to be short-term; effects on endangered or threatened species are not expected.

6.5.1. Cumulative Impacts

No other projects (federal, state, county or community) have been identified near the Kamehameha Highway intersection improvements at Kuilima Drive project. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative effects on avifauna and mammal populations and their habitat are expected.

6.5.2. Mitigation Measures

During the clearing and construction phase of the project, if any nesting birds are discovered in the project area, clearing and construction activities will cease. The State Department of Land and Natural Resources and the U.S. Fish and Wildlife Service will be contacted for advice before proceeding.

Following completion of the proposed project, the area will be restored and revegetated to as close to its original condition as is possible. Cleared areas are expected to recover quickly.

6.6. Transportation and Traffic

The project includes the construction of a temporary detour road around the bridge construction site. The detour will accommodate two-lane traffic during the bridge construction, thus maintaining Kamehameha Highway as the vital link between Kahuku and Haleiwa at all times. The detour will also maintain the existing ingress and egress to Kuilima Drive.

It is expected that the outcome of this project will have a positive effect on traffic and transportation. Traffic disruption is expected to be short-term. It will be experienced primarily during the initial and final stages of the project. Occasional increases in traffic congestion will result from the periodic movement of construction materials and equipment. This is expected to occur primarily during the demolition of the culvert, the detour construction and the bridge construction phases. Repaving of Kamehameha Highway within the project area may require controlled one lane or contra-flow lanes for short periods.

The detour road will be completed during the first 8 to 10 weeks of the project. During this time, traffic will be maintained on the existing portion of Kamehameha Highway. When the detour is completed, traffic will be routed away from the existing Oio Stream bridge. The existing entrance to Kuilima drive will be maintained. The detour road will have a posted speed limit of 25 miles per hour. Degradation of the average traffic speed can be anticipated because of the curvature introduced by the detour road and construction warning signage. The detour road will be illuminated at night

Traffic patterns throughout the course of the anticipated 12 months project construction time should not be substantially altered by the proposed action; however, delays during peak traffic hours can be expected. This can be largely attributed to the arrival and departure of

construction crews and the arrival and departure of residents, guests and staff at the Kuilima Resort. Vehicles transiting the project area from either Haleiwa or from Kahuku Village will experience reduced speeds as they negotiate the curved detour road.

The greatest disruption to normal traffic patterns will occur during the 6 months period when the detour is in service. Disruption to the flow of traffic will occur to traffic leaving and entering Kamehameha Highway from Kuilima Drive. Agricultural vehicles crossing Oio Stream will use the detour road during construction and the new bridge when the project is complete.

As previously noted, the State plans the reconstruction of the Kawela Stream Bridge in 2006. It is anticipated that traffic at that location will be restored to normal by the time the improvements at Kuilima Drive are begun.

There are no anticipated long-term negative effects from the proposed project. Short-term effects include changes to traffic patterns because of the detour road; however, those changes will be alleviated by new signage. Public safety in the intersection area will be enhanced because of the addition of traffic lanes and the widening of the lanes when the project is completed.

6.6.1. Cumulative Impacts

The cumulative impact is expected to be positive. No other projects (federal, state, county or community) have been identified near project. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative negative effects on transportation in the area are expected.

6.6.2. Mitigation Measures

Appropriate traffic signs and controls will be posted along the highway on either side of the project area, and along the detour road to reduce traffic flow delays and potential hazards from reduced visibility. Work on Kamehameha Highway requiring lane closures will be accomplished during low traffic periods and in accordance with approved traffic control plans.

Construction work will not be normally scheduled at night, holidays or weekends.

6.7. Cultural Resources

Results of a records search conducted at the State Historic Preservation Division, DLNR, indicate that while prehistoric, historic, and traditional sites were likely to occur near the intersection improvements, no site has been identified. Since the surrounding area has been previously altered by sugar cultivation, construction of the highway and construction of the Kuilima golf course, in the resent past, it is unlikely that any archaeological sites have survived. Because the intersection improvement site is relatively small and previously disturbed, no additional archaeological survey and no construction monitoring will be needed. Based on the existing information and the recent correspondence (Appendix A) with the State Historic Preservation Division, DLNR, no effects on historical property are expected.

6.7.1. Cumulative Impacts

No other projects (federal, state, county or community) have been identified near the project. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative effects on cultural resources are expected.

6.7.2. Mitigation Measures

No effects on historic properties are expected from the intersection improvements. However, if cultural materials, particularly human remains, are unexpectedly discovered during the course of construction, ground disturbing activities will cease in the immediate area and Honolulu Police Department and the State Historic Preservation Division, DLNR will be contacted. If native Hawaiian remains are encountered, the Oahu Burial Council also will be consulted.

6.8. Socioeconomic

There are no anticipated short-term or long-term socioeconomic impacts from the proposed project. The improvements made to the intersection should not induce economic or population growth in the Turtle Bay Resort area or region in general.

Existing lifestyles in the area will not be altered during the construction of the project or in the long-term. All construction will take place during normal working hours on weekdays. There will be no construction activities during weekends and holidays.

6.8.1. Cumulative Impacts

No other projects (federal, state, county or community) have been identified near this project. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative effects on socioeconomic conditions are expected.

6.9. Noise

Intermittent elevated noise levels from certain types of construction activities are unavoidable but expected to be short-term and minor. Typical heavy equipment noise levels are provided in Table 4. Long-term effects are not expected and noise levels would not exceed the permissible noise exposure levels shown in Table 4 or as defined by the State Department of Health; construction activities would be conducted on weekdays and in daytime hours I accordance with Chapter 342-F-1, HRS. As a result, no significant noise impacts are expected from the intersection improvements.

Heavy Construction Equipment Noise Levels at 50 feet	
Equipment Type	*Generated Noise Level (dBA)*
Bulldozer	88
Backhoe (rubber tire)	80
Front Loader (rubber tie)	80
Dump Truck	75
Concrete Truck	75
Concrete Finisher	80
Crane	75
Asphalt Spreader	80
Roller	80
Flat-bed Truck (18 Wheel)	75
Scraper	89
Trenching Machine	85

Source: U.S. Army Corps of Engineers, Construction Engineering Research Labs, 1978

Table 4 Heavy Construction Noise Levels

It should be noted that the proposed bridge would be constructed on a pile-supported foundation. Impact pile driving will not be used to construct the foundations. The piles are constructed of reinforced concrete in a drilled shaft. This operation does not create any exceptional noise compared to other construction activities.

6.9.1. Cumulative Impacts

No other projects (federal, state, county or community) have been identified near the Kamehameha Highway intersection improvements at Kuilima Drive project. Therefore, when reviewed against past, present, and reasonably foreseeable future actions no cumulative noise effects are expected.

6.9.2. Mitigation Measures

Short-term construction-related noise impacts are unavoidable, but will be controlled to within acceptable limits by timing and phasing of construction. The Construction activities are required to conform to the State of Hawaii noise control laws and regulations.

Other than short-term exposure to vehicles transiting the project area on Kamehameha Highway, the nearest populated area is approximately 500 feet from the site.

In accordance with OSHA guidance, occupational exposure to noise from construction equipment will be reduced by requiring construction workers (e.g., equipment operators) to wear appropriate hearing protection.

6.10. Visual

Disruption of the existing visual quality near the intersection will be short-term and minor as a result of construction, e.g. grading, excavating, detour road and drainage improvements, necessary vegetation removal, stockpiling of materials, and utility pole relocation. Negative long-term effects are not expected and the overall visual qualities of the intersection area will enhance the safety to the traveling public. As a result, a significant visual improvement for drivers of vehicles is expected from the intersection improvements.

Landscaping at the entrance to Kuilima Drive will be disturbed during reconstruction. The existing Resort sign and median area of Kuilima Drive will not be disturbed, however construction will be in progress in the vicinity.

When completed, the Intersection, bridge and highway will be illuminated with highway lighting. This new lighting is not expected to create any visual impact to populated area of the Turtle Bay Resort.

6.10.1. Cumulative Impacts

No other projects (federal, state, county or community) have been identified near the Kamehameha Highway intersection improvements at Kuilima Drive project. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no negative cumulative effects on visual resources are expected.

6.10.2. Mitigation Measures

Short-term construction-related visual impacts are unavoidable, but will be controlled to within acceptable limits by timing and phasing of construction and by revegetation of cleared areas and restoration of landscaped areas.

6.11. Air Quality

The principle source of air pollution associated with the proposed action will be fugitive dust emissions from excavation and construction, and vehicular emissions from construction equipment. The effects are expected to be short-term. No long-term impacts on air quality are anticipated.

Construction vehicles traveling to and from the project site during mobilization and de-mobilization will increase vehicular emissions along the access routes outside the project area. On-site construction equipment, primarily using diesel engines, will contribute to local air pollution during the construction phase of the project. All equipment will be required to conform to current state emission standards for internal combustion engines. These sources will be combined with existing emissions from existing traffic. Due to the low pollutant background levels in the area and the favorable climate conditions, increased vehicular emissions are not expected to be significant.

Construction activity will generate short-term fugitive dust particulate emissions. It is estimated that construction activity can generate 1.2 tons/acre of fugitive dust per month in areas with medium silt content soil. Soils in this project area contain relatively high levels of silt. It s anticipated that U.S. EPA and State DOH dust emission standards will not be exceeded.

6.11.1. Cumulative Impacts

No other projects (federal, state, county or community) have been identified near the project that will impact on air quality. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative effects on air quality are expected.

6.11.2. Mitigation Measures

In order to reduce the impacts from vehicular emissions, traffic will be routed through the area with as few delays as possible. Construction vehicles will be scheduled to arrive and depart the project site during non-peak traffic hours.

The relatively wet climate in windward Oahu reduces impacts from fugitive dust emissions. Construction activities will be conducted in accordance with State of Hawaii and U. S. EPA Air Pollution Control Regulations. This includes a regular watering program to suppress dust and covering soil in trucks and stockpiles. Areas graded and cleared of vegetation will be re-vegetated as soon as possible to reduce dust emissions and other erosion.

6.12. Hazardous Wastes and Materials

There are no anticipated short-term or long-term effects from hazardous wastes, materials or petroleum products.

6.12.1. Cumulative Impacts

No other projects (federal, state, county or community) have been identified near the project. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative effects are expected from hazardous wastes and materials.

6.12.2. Mitigation Measures

Construction material, including petroleum products shall be stored in a confined area away from Oio stream. To the extent possible, equipment will be kept free of pollutants during construction activities. All wastes will be removed from the project area after completion of the project.

A contingency plan to control accidental spills of petroleum products will be developed and implemented at the project site. Absorbent pads and containment booms will be stored on-site to facilitate quick response and clean up of any spills. The contractor will avoid dumping any material in the stream during clearing and construction activities.

6.13. Utilities and Infrastructure

There will be short-term effects to utilities in the area resulting from their relocation on the Makai of Kamehameha Highway. This work includes relocation of utility poles and rerouting a water transmission main crossing Oio Stream.

Excavation activities, clearing, demolition of the detour road, demolition of the existing culvert and removal of road pavement will create solid waste that will be disposed of off-site. The disposal of this solid waste will have a secondary, long-term effect on the island's sanitary landfills. The disposal of the project waste is not expected to have a significant effect on the island's landfill capacity.

6.13.1. Cumulative Impacts

No other projects (federal, state, county or community) have been identified near the project. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative effects on utilities and infrastructure are expected.

6.13.2. Mitigation Measures

Utility relocations will be accomplished without long-term interruption to existing service, particularly to the Turtle Bay Resort. The water main on Kamehameha Highway will be bypassed during relocation to prevent interruption in service[14].

6.14. Natural Hazards

6.14.1. Floods

The proposed project will have a positive effect on the flooding potential in the intersection improvement area. The replacement of the existing culvert under Kamehameha Highway with a bridge will straighten the watercourse and will increase the flow capacity under the highway.

6.14.2. Cumulative Impacts

No other projects (federal, state, county and community) have been identified near the intersection improvement project. Therefore, when reviewed against past, present, and reasonably foreseeable future actions, no cumulative effects are expected from flooding.

6.14.3. Mitigation Measures

Existing drainage patterns will be maintained to minimize any potential flooding throughout the duration of the proposed project.

[14] See Appendix A - Letter from Honolulu Board of Water Supply

7. DETERMINATION

This draft EA is prepared pursuant to HRS 343 and the HAR title 11. The purpose of the draft EA is to determine the impacts of the proposed project and necessary remedial actions. Pending a 30-day public review and comment period, a draft determination is presented below. The final determination for the project will be contained in the Final Environmental Assessment.

7.1. Draft Determination

This assessment for the proposed intersection improvements at Kamehameha Highway and Kuilima Drive shows that no significant impact on the environment will occur and an Environmental Impact Statement in not required. In accordance with the provisions of Chapter 343, Hawaii Revised Statutes, a Finding of No Significant Impact (FONSI) is therefore deemed appropriate.

Reasons supporting the above determination:

1. **The proposed action does not involve an irrevocable commitment to loss or destruction of any natural or cultural resource.**

   There are no known significant natural or cultural resources associated with the project site. Past development of the project area has substantially altered the site from its natural condition.

2. **The proposed action does not curtail the range of beneficial uses of the environment.**

   The proposed project is consistent with land use plans, policies and controls, and will not curtail beneficial uses of the environment in the area.

3. **The proposed action does not conflict 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.**

   No long-term adverse environmental conflicts are foreseen. The project supports the State's highway safety program.

4. **The proposed action does not substantially affect the economic welfare, social welfare, and cultural practices of the community or State.**

   There will be some short-term economic impacts related to the construction period. Long-term benefits are positive in that the project will increase safety on Kamehameha Highway.

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

   Short-term impacts associated with construction activities will have a minimal potential for affecting public health. Construction activities will be regulated to minimize noise, dust and exhaust emissions.

6. **The proposed action does not involve substantial secondary impacts, such as population changes or effects on public facilities.**

The project will not result in an increase in population in the area. The project will have a positive impact on roads.

7. **The proposed action does not involve a substantial degradation of environmental quality**.

   The existing physical aspects of the surrounding area will be preserved.

8. **The proposed action is individually limited and cumulatively, does not have a significant effect upon the environment or involve a commitment for larger actions.**

   The project is limited in scope to the improvement of Kamehameha Highway. The action does not commit further improvements or construction of the highway. The project does not alter the existing use of the area i.e., a state highway.

9. **The proposed action does not substantially affect a rare, threatened, or endangered species, or habitat**.

   Based on review of available information and observation of the site, endangered flora or fauna are not anticipated within the project site.

10. **The proposed action does not detrimentally affect air, water quality or ambient noise levels.**

    Short-term impacts on air, water quality and day time noise may occur during the construction period, but will be mitigated by construction practices and will be regulated by the project plans and specifications. The completed project is not expected to result in an increase in noise.

11. **The proposed action does not affect 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.**

    The project site is located near but outside the 100 and 500-year flood zone. It is outside the tsunami zone. Drainage through Oio Stream will be maintained during the construction period.

12. **The proposed action does not substantially affect scenic vistas and view planes identified in county or state plans or studies**.

    The site is not part of a unique or valuable scenic resource. The proposed changes will restore existing landscaping and will be compatible in scale, mass and height with the existing highway.

13. **The proposed action does not require substantial energy consumption.**

    The proposed project will require additional energy consumption for the proposed highway lighting. However, the design will maximize the use of energy efficient equipment that is consistent with providing a positive effect on highway safety.

8. PRE ASSESSMENT AGENCIES, CITIZEN GROUPS, AND INDIVIDUALS CONSULTED

8.1. Agency, Citizen Groups and Individuals Consulted

The following agencies, community organizations, and individuals were consulted in the development of the draft environmental assessment (DEA):

8.1.1. DEA Preparer

Lyon Associates, Inc. 841 Bishop Street, Honolulu, HI 96813

8.1.2. Federal Agencies

	Written Response? Y/N	Copy on Page
U.S. Army Corps of Engineers	Y	A-2

8.1.3. State Agencies

	Written Response? Y/N	Copy on Page
Department of Transportation - Internal	N	-
Department of Health - Clean Water Branch	Y	A-7
Department of Land and Natural Resources, Office of Conservation and Coastal Lands	Y	A-6
Department of Land and Natural Resources, Commission on Water Resource Management	Y	A-3
Department of Land and Natural Resources, Historic Preservation Office	Y	A-4

8.1.4. City and County of Honolulu Agencies

	Written Response? Y/N	Copy on Page
Department of Planning and Permitting, Land Use Permits Division	Y	A-5
Honolulu Board of Water Supply	Y	A-9

8.1.5. Community Groups and Individuals

	Written Response? Y/N
Estate of James Campbell	N
Turtle Bay Resort/Kuilima Resort Company	N
Hawaiian Electric Company, Engineering Department	N
Verizon, Inc., Engineering Department	N
Time-Warner Oceanic Cable, System Engineering	N

8.1.6. Other Reviews

The following will be provided a copy for review. Pursuant to Chapter 343, HRS, and the Title 11-200-9, the draft environmental assessment is subject to a 30-day review and comment period.

Federal

U.S. Department of Agriculture, Natural Resources Conservation Services
U.S. Department of the Interior, Fish and Wildlife Service
Federal Highway Administration

State

State Representative, District
State Senator, District
Department of Agriculture
Department of Business, Economic Development and Tourism, Land Use Commission
Office of Environmental Quality Control
Office of Hawaiian Affairs
Office of Planning, DBET
University of Hawaii, Environmental Center
Department of Health, Environmental Management Division, Safe Drinking Water Branch

City & County

Koolauloa Neighborhood Board No. 15
City Council, District II
Department of Planning and Permitting
Department of Design and Construction
Department of Environmental Services
Police Department
Fire Department

9. REFERENCES

Bath, J., 1984. *Subsurface Archaeological Reconnaissance Survey, Kuilima Resort Expansion Project, Lands of Opana, Kawela, Hanakaoe, Oio, Ulupehupehu, Punaluu and Kahuku, Koolauloa, Island of Oahu.* Prepared for Group 70 and Kuilima Development Corporation.

City and County of Honolulu, Department of Planning and Permitting, 1999. *Koolauloa Sustainable Community Plan.*

Chu and Jones, 1987. *Coastal View Study*. Prepared for the City and County of Honolulu, Department of Land Utilization (now the Department of Planning and Permitting).

Clean Air Act, 42 U.S.C.A. §7409, National Primary and Secondary Ambient Air Quality Standards.

Dye, Tom, 1977. *Archaeological Reconnaissance Survey of Prudential Insurance Company Lands Near Kuilima Hyatt Resort, Kahuku, Oahu Island.* Department of Anthropology, B.P. Bishop Museum.

Federal Emergency Management Agency, National Flood Insurance Program, 2000. *Flood Insurance Rate Map, City and County of Honolulu, Hawaii.*

Giambelluca, Thomas W., M.A, Nullet, T.A. Schroeder. 1986. Rainfall Atlas of Hawaii. Water Resources Research Center with cooperation of the Department of Meteorology. Honolulu: Department of Land and Natural Resources, Division of Water and Land Development.

Group 70, 1985. *Revised Environmental Impact Statement Volume I Kuilima Resort Expansion*. Prepared for the Kuilima Development Company

Group 70, 1989. T*he County Courses at Kahuku*. Final Environmental Impact Statement. Prepared for the Kuilima Development Company

Handy, E.S. Craighill, and Elizabeth G. Handy, 1972. *Native Planters in Old Hawaii.* B.P. Bishop Museum Bulletin 233, B.P. Museum, Honolulu.

Kuilima Resort Company. *Revised Wetland Development Plans for Punaho'olapa Marsh.*

Kusao & Kurahashi, 2002. *Special Management Area Use Permit and Shoreline Setback Variance Application and Draft Environmental Assessment Report for the Proposed Renovations and Expansion of the Turtle Bay Resort at Kuilima.* Prepared for the Kuilima Resort Company

McAllister, J.G., 1933. Archaeology of Oahu. B.P. Bishop Museum Bulletin 104, B.P. Museum, Honolulu.

Mink & Lau, 1990. *Aquifer Identification and Classification for Oahu*

Oceanit, 2000. *Miscellaneous Flood Control Improvements Monitoring Report for East Main Drain/Oio Stream Outlet for Flood Control Improvements*. Draft Report prepared for the Department of Design and Construction, City and County of Honolulu.

Oceanit, 1986. *Certification Report of the Proposed Rectangular Channel Outlets of the West and East Main Drains at the Kuilima Resort Project Kahuku, Oahu, Hawaii.*

St John, H. 1973. *List and Summary of the Flowering Plants in the Hawaiian Islands, Pacific Tropical Botanical Garden Memoir No 1, Lawai, Kauai, Hawaii.*

State of Hawaii, Land and Natural Resources, State Historic and Preservation Division, *Hawaii and National Register of Historic Places.* http://www.state.hi.us/dlnr/hpd/hpregistr.htm, April 2003

State of Hawaii, Department of Health. 1993. Hawaii Administrative Rules, Title 11, Chapter 59, Ambient Air Quality standards. Effective August 8, 2001

State of Hawaii, Department of Health. Clean Air Branch, 1994. Hawaii Air Quality Data 1991-1993.

State of Hawaii, Department of Health. 1992. Hawaii Administrative Rules, Title 11, Chapter 54, Water Quality Standards. Effective Aril 17, 2000

State of Hawaii, Department of Health. 1992. Hawaii Administrative Rules, Title 11, Chapter 46, Community Noise control. Effective September 11, 1996

State of Hawaii, Department of Transportation. 1994. *Standard Specifications for Road, Bridge and Public Works Construction*

University of Hawaii, 1983. *Atlas of Hawaii*, Second Edition, Department of Geography, University of Hawaii. University of Hawaii Press

U.S. Army Corps of Engineers, Construction Engineering Research Labs. 1978. *MicroNOISE, A User's Manual.* Technical Report N-86/12, June.

U.S. Department of Agriculture, Soil Conservation Service. 1972. *Soil Survey of Islands of Kauai, Oahu, Molokai, and Lanai, State of Hawaii.*

U.S. Department of Transportation, Federal Highway Administration, 23 Code of Federal Regulations (CFR), Part 771, Environmental Impact and Related Procedures.

U.S. Department of Interior, Fish and Wildlife Services, 1994a. Animals, Hawaiian Islands, Listed, Proposed or Candidate Species Under the U.S. Endangered Species Act. Updated 18, 1994.

Kuilima Resort Company. *Revised Wetland Development Plans for Punaho'olapa Marsh.*

APPENDIX A Correspondence from Interested Parties

A.1 U. S. Army Corps of Engineers

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

REPLY TO ATTENTION OF

February 24, 2000

Regulatory Branch

Mr. Bryan P. Low
Lyon Associates, Inc.
841 Bishop Street, Suite 2006
Honolulu, Hawaii 96813

Dear Mr. Low:

This letter responds to your request for a review of the proposed project to improve the intersection of Kamehameha Highway and Kuilima Drive, dated February 10, 2000. Based on the information you provided and a site visit by a member of my staff, I have determined that a Department of the Army permit will not be required for this project. Old Stream appears to be an ephemeral stream and is therefor not within the normal regulatory jurisdiction of the U.S. Army Corps of Engineers.

If you have any questions concerning this determination, please contact William Lennan of my staff at 438-6986, and reference File No. 200000099.

Sincerely,

George P. Young, P.E.
Chief, Regulatory Branch

A.2 Commission on Water Resources, DLNR

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 621
HONOLULU, HAWAII 96809

MAY - 8 2003

Mr. Terry Kearney
Lyon Associates, Inc.
841 Bishop Street, Suite 2006
Honolulu, Hawaii 96813

Dear Mr. Kearney:

Thank you for your May 5, 2003 Fax Memorandum requesting whether a stream channel alteration permit (Hawaii Revised Statutes §174C-71) would be required for a bridge modification at Oio watercourse located at Kamehameha Highway and Kuilima Drive, Kahuku, Oahu.

At this location, the Oio watercourse does not have sufficient flows to support instream uses, therefore a stream channel alteration permit will not be required for the proposed bridge modifications.

Thank you for your inquiry. If you have any questions regarding this letter, please call David Higa at 587-0249.

Sincerely,

ERNEST Y.W. LAU
Deputy Director

DH:sd

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A.3 Hawaii State Historic Preservation Division, DLNR

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

TIMOTHY E. JOHNS, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

DEPUTIES
JANET E. KAWELO

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
CONSERVATION AND RESOURCES
ENFORCEMENT
CONVEYANCES
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
LAND
STATE PARKS
WATER RESOURCE MANAGEMENT

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
Kakuhihewa Building, Room 555
601 Kamokila Boulevard
Kapolei, Hawaii 96707

NOV 27 2002

ORIG | ROUTE | COPY

TC ①

FILE ID

February 28, 2000

LOG NO: 24976 ✓
DOC NO: 0002tm23
Architecture

Mr. Bryan P. Low
Lyon Associates, Inc.
841 Bishop St., Suite 2006
Honolulu, Hawaii 96813

Dear Mr. Low:

SUBJECT: **Kamehameha Highway Intersection Improvements at Kuilima Drive, Oio Stream Bridge**
TMK: 5-7-001:016, 021 and 022, Kahuku, Oahu

Thank you for your transmittal on the above project. Since the area has been previously altered through sugar cultivation, it is unlikely that there will be any archaeological sites. The bridge proposed for replacement, is not listed in the most recent historic inventory as high preservation priority. It is however, built in 1931 and we would therefore appreciate photo-documentation of the bridge before it is demolished. Photographs should be 8x10 on fiber-based paper utilizing 4x5 negatives and archivally processed.

Thank you for the opportunity to comment. Should you have further questions, please call Tonia Moy at 692-8030.

Aloha,

DON HIBBARD, Administrator
State Historic Preservation Division

TM:jk

A.4 City and County of Honolulu

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4414 • FAX: (808) 523-4730

DEPUTY DIRECTOR
MAYOR

RANDALL K. FUJIKI, AIA
ACTING DIRECTOR

ACTING DEPUTY DIRECTOR

February 25, 2000

2000/CLOG-820(ST)

Mr. Bryan P. Low
Lyon Associates, Inc.
841 Bishop Street, Suite 2006
Honolulu, Hawaii 96813

Dear Mr. Low:

Kamehameha Highway Intersection Improvements
Kuilima Drive, Kahuku, Oahu
Tax Map Keys 5-7-1: pors. 15, 21, and 22

We have reviewed the information for the above-referenced project transmitted by your letter dated February 10, 2000, and find the following:

1. We confirm that the project site makai of the centerline of Kamehameha Highway is located within the Special Management Area (SMA).

2. If the proposed project is to be conducted totally within an existing State highway right-of-way, then no SMA Use Permit would be required pursuant to Section 25-1.3(2)(B), Revised Ordinances of Honolulu.

Should you have any questions, please contact Steve Tagawa of our Land Use Approvals Branch at 523-4817.

Sincerely yours,

for RANDALL K. FUJIKI, AIA
Acting Director of Planning
and Permitting

RKF:lg

cc: OEQC

A.5 Office of Conservation and Coastal Lands, DLNR

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND COASTAL LANDS
CONSERVATION AND RESOURCES ENFORCEMENT
ENGINEERING
FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
OFFICE OF CONSERVATION AND COASTAL LANDS

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

REF:OCCL:TM

Correspondence: OA 05-175

MAR - 8 2005

Mr. Kenneth M. Rappolt, P.E.
841 Bishop Street, Suite 2006
Honolulu, Hawaii 96813

Dear Mr. Rappolt:

SUBJECT: Acquisition of Additional Land for the State Highway Right-of-Way Located in the Vicinity of the Turtle Bay Resort, Ulupehupehu, Oio, Island of Oahu, TMK's (1) 5-7-001: 016, 021, 022

The Office of Conservation and Coastal Lands (OCCL) is in receipt of your correspondence dated February 24, 2005 regarding acquisition of additional land for the State Highway right of way widening project in the vicinity of Turtle Bay Resort.

The OCCL notes the subject area is not within the Conservation District therefore we have no comment. Should you have any questions, please feel free to contact Tiger Mills at 587-0382.

Aloha,

Samuel J. Lemmo, Administrator
Office of Conservation and Coastal Lands

cc: Chairperson
ODLO
City and County of Honolulu, Department of Planning and Permitting

(119N)

COPY 2159-M

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

BRUCE S. ANDERSON, Ph.D., M.P.H.
DIRECTOR OF HEALTH

STATE OF HAWAII
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HAWAII 96801-3378

In reply, please refer to:
EMD/CWB

03024CEC.00

March 10, 2000

Mr. Bryan P. Low
Lyon Associates, Inc.
841 Bishop St. Suite 2006
Honolulu, HI 96813

Dear Mr. Low:

Subject: **Kamehameha Highway Intersection Improvement At Kuilima Drive, Island of Oahu (TMK: 5-7-001:016. 021, 022, and 031)**

Reference is made to your letter of February 28, 2000 regarding the State Water Quality Certification (WQC) requirements for the subject project under U.S. Army Corps of Engineers (COE), Honolulu Engineer District (HED), File No. 200000099.

Pursuant to §401(a)(1) of the Federal Clean Water Act (CWA), a Section 401 WQC is only required for "Any applicant for a Federal license or permit to conduct any activity, including, but not limited to, the construction or operation of facilities, which may result in any discharge into the navigable waters." The terms "navigable waters" and "discharge" are defined in §502 of the CWA.

Due to insufficient information submitted for a detailed evaluation on the subject project, the following is our general comments. We reserve the right to provide additional comments when additional information becomes available:

1. To comply with requirements contained in §342D-50(a) of the Hawaii Revised Statutes (HRS) and §11-54-03 of the Hawaii Administrative Rules (HAR), Site-specific Best Management Practices (BMPs) plan shall be developed and implemented to isolate and confine the construction activity(ies) and prevent the potential pollutant(s) discharges from adversely impacting the State water quality in both the Oio Stream and Turtle Bay.

2. To comply with HRS §342D-55 and HAR §11-54-10 requirements and to insure the adequacy of the implemented BMPs, an applicable monitoring and assessment plan shall also be developed and implemented.

3. To comply with HRS 342D-50(a) and HAR Chapter 11-55 requirements, you are hereby informed that there shall be "no" discharge of any treated effluent from any point sources (such as the potential dewatering and hydrotesting effluent) into State water without first obtained a permit issued by the Department of Health under the authorization of National Pollutant Discharge Elimination System of the Section 402 of the CWA.

4. There shall be no discharges of following dredging/excavation activity related effluent into water of the United States, if any, unless you have received the required permit(s):

   a. Dredged spoil dewatering effluent during dredging;

   b. Return flow, overflow, or runoff from the dredged spoil stockpiling and/or dewatering site.

5. Please complete the enclosed "Solid Waste Disclosure Form for Construction Sites" for the proposed dredged spoil disposal practices, if any, and return it to the Department's Solid and Hazardous Waste Branch.

6. Please inform the Clean Water Branch (CWB) via telephone number (808) 586-4309 or FAX (808) 586-4352 at least three (3) days before the scheduled construction activity begins.

Should you have any questions, please contact Mr. Edward Chen, Engineering Section of the CWB, at (808)586-4309.

Sincerely,

DENIS R. LAU, P.E., CHIEF
Clean Water Branch

EC:cr

Enclosure: Solid Waste Disclosure Form for Construction Sites

c: Regulatory Branch, COE/HED (w/o encl.)
U.S. Fish and Wildlife Services (w/o encl.)
John Nakagawa, State DBEDT/Office of Planning, CZM Program (w/o encl.)
David Higa, State DLNR/CWRM (w/o encl.)
Edmund Yoshida, State DOT/Highways Division (w/o encl.)
DOH/SHWB (w/o encl.)

A.7 C&C Honolulu, Board of Water Supply

BOARD OF WATER SUPPLY

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

March 28, 2005

RECEIVED MAR 3 0 2005

Mr. Kenneth M. Rappolt, P.E.
Vice President
Lyon Associates
841 Bishop Street, Suite 2006
Honolulu, Hawaii 96813

Dear Mr. Rappolt:

Subject: Your Letter Dated February 18, 2005 Regarding Your Request for a Preliminary Review of State Department of Transporation Kamehameha Highway Improvements at Kuilima Drive Project

Thank you for your letter requesting comments regarding Kamehameha Highway at Kuilima Drive.

We have the following comments:

1. We accept the preliminary design concept of our 12-inch water main aligned under the Oio Streambed as shown on the plan, surrounded by a concrete jacket per Board of Water Supply Water System Standards from top vertical bend to top vertical bend.

2. The water main shall be located within the State Right-of-Way for ease of accessibility.

3. A temporary bypass main is necessary to minimize service disruption to customers as this is the only water main in the area.

4. We request submittal of construction plans for our review and approval.

If you have any questions, please contact Ann Wong at 748-5440.

Very truly yours,

for Keith Matsumoto
Principal Executive
Engineering Division

Water for Life . . Ka Wai Ola