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IN REPLY REFER TO:
HWY-DB 2.2739

July 28, 2009

TO: KATHERINE PUANA KEALOHA, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: GLENN M. YASUI
ADMINISTRATOR, HIGHWAYS DIVISION

SUBJECT: FINDING OF NO SIGNIFICANT IMPACT FOR KAWELA STREAM BRIDGE REPLACEMENT, TMK 5-7-006:022 (POR) AND 5-7-001:021 (POR), DISTRICT OF KOOLAULOA, OAHU, HAWAII

The State of Hawaii, Department of Transportation, Highways Division has reviewed the comments received during the 30-day public comment period which began on February 23, 2007 and ended on March 27, 2007. The agency has determined that this project will not have significant environmental impacts and has issued a Finding of No Significant Impact. Please publish this notice in the next available Office of Environmental Quality Control (OEQC) Environmental Notice.

We have enclosed a completed OEQC Publication Form, two hard copies of the final environmental assessment (Final EA), and one PDF copy of the Final EA on CD-ROM. An electronic copy of the OEQC Publication Form will also be provided via e-mail. If you have any questions regarding this submittal, please contact Mr. Dean Takiguchi, Project Manager, at 692-7614, Bridge Design Branch, Highways Division.

Enclosures: (1) OEQC Publication Form
(2) Two hard copies and one PDF copy of the Final EA

c: AECOM Technical Services, Inc. (Tanya Copeland)

Final
Environmental Assessment

Kawela Stream Bridge Replacement

Kamehameha Highway
District of Koolauloa, Oahu

Federal Aid Project No. 83B-01-01

Prepared for:

State of Hawaii
Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Prepared by:

AECOM Technical Services, Inc.
841 Bishop Street, Suite 500
Honolulu, Hawaii 96813

July 2009

EXECUTIVE SUMMARY

INTRODUCTION

The State of Hawaii Department of Transportation (DOT), in cooperation with the Federal Highway Administration (FHWA), proposes to replace the existing Kawela Stream Bridge located on Kamehameha Highway, in the District of Koolauloa, Oahu. The proposed project would use both federal and state funds, and therefore triggers the environmental review process mandated under the National Environmental Policy Act (NEPA) of 1969 and Hawaii Revised Statutes (HRS) Chapter 343.

This environmental assessment (EA) analyzes the potential environmental consequences of the proposed action and alternatives to determine if there would be significant direct, indirect, short-term, long-term, and/or cumulative impacts on the human, natural, or historic environments.

All activities conducted in support of this EA, including reports, field investigations, and public involvement are conducted in accordance with the NEPA, as amended (42 United States Code Section (§) 4321, et seq.); the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508); the FHWA Environmental Impact and Related Procedures (23 CFR Part 771); HRS 343, Environmental Impact Statements; and the Hawaii Administrative Rules 11-200, Environmental Impact Statement Rules.

The purpose of the proposed action is to replace the existing Kawela Stream Bridge, constructed in 1931, with a new structure that would meet current DOT and the American Association of State Highway and Transportation Officials (AASHTO) design standards, including seismic design criteria and present day vehicular loading criteria. The bridge would also be widened to allow for shoulders in both directions of travel. The incorporation of current design criteria into the replacement bridge would significantly improve the overall safety of the bridge for motorists and pedestrians.

PROPOSED ACTION AND ALTERNATIVE

The proposed action and alternative are described as follows:

- **Proposed Action.** The proposed action is to replace the existing Kawela Stream Bridge, with a new structure that would meet current DOT and AASHTO design standards. The replacement bridge would be approximately 40-foot (ft.) wide and 44-ft. long (abutment to abutment), providing for two 12-ft. vehicular travel lanes and 8-ft. paved shoulders in both directions of travel. A temporary bypass bridge and detour road would be constructed mauka of the existing road, during bridge replacement and would be demolished upon project completion.
- **No-Action Alternative.** Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No construction-related activities proposed for bridge replacement would occur. Structural deficiencies with regard to design loading, bridge width, and seismic design criteria would not be corrected.

SUMMARY OF ENVIRONMENTAL IMPACTS

The environmental impacts from the proposed action and alternative are summarized below:

- **Proposed Action.** The proposed action includes construction of a temporary bypass bridge and detour road, demolition and replacement of the existing Kawela Stream Bridge, and subsequent demolition of the temporary bypass bridge and detour road. No impacts are expected for most resources. Long-term positive impacts are expected for the transportation and safety and health resources. Short-term impacts to air quality, hazardous materials and hazardous waste, ambient noise levels, soils and geology, and water resources are

expected during construction. These impacts would be mitigated by implementation of site-specific construction best management practices (BMPs), such that construction-related impacts would not reach the level of significance (i.e. exceed regulatory criteria). Implementation of the proposed action would require lease of approximately 1.2 acres of private property for construction of the detour road. Leased land would be restored to its original grade and condition, and returned to the property owner, upon project completion.

- **No-Action Alternative.** Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No construction-related activities proposed for bridge replacement would take place. No impacts to any of the resources considered herein are anticipated with implementation of the no-action alternative. Positive impacts for the transportation and safety and health resources would not be achieved.

DETERMINATION

Based on the evaluation of the significance criteria and the discussion of impacts and mitigation measures contained in this EA, it is anticipated that the proposed action would not have a significant adverse impact on the environment. Therefore, a Finding of No Significant Impact has been determined.

CONTENTS

APPENDIXES

FIGURES

TABLES

ACRONYMS AND ABBREVIATIONS

%	percent
§	Section
AASHTO	American Association of State Highway and Transportation Officials
ANSI	American National Standards Institute
bgs	below ground surface
BMP	Best Management Practice
CDP	Census Designated Place
CEQ	Council on Environmental Quality
CFR	Code of Federal Regulations
CCH	City and County of Honolulu
CO	carbon monoxide
CWA	Clean Water Act
CWB	Clean Water Branch
CWRM	Commission on Water Resource Management
CZM	Coastal Zone Management
DA	Department of the Army
dB	decibel
dBA	A-weighted decibels
DBEDT	Department of Business, Economic Development and Tourism, State of Hawaii
DLNR	Department of Land and Natural Resources, State of Hawaii
DOH	Department of Health, State of Hawaii
DOT	Department of Transportation, State of Hawaii
DPP	Department of Planning and Permitting, City and County of Honolulu
EA	environmental assessment
EO	Executive Order
EPA	Environmental Protection Agency, United States
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
FPPA	Farmland Protection and Policy Act
ft.	foot and feet
HAR	Hawaii Administrative Rules
HIOSH	Hawaii Occupational Safety and Health
HRS	Hawaii Revised Statutes
LLC	Limited Liability Corporation
mph	miles per hour
MSAT	Mobile Source Air Toxics
NAAQS	National Ambient Air Quality Standards
NEPA	National Environmental Policy Act
NHPA	National Historic Preservation Act
NO_2	nitrogen dioxide
NOAA	National Oceanic Atmospheric Administration
NPDES	National Pollutant Discharge Elimination System
O_3	ozone
OHA	Office of Hawaiian Affairs

OSHA	Occupational Safety and Health Act
PCSI	Pacific Consulting Services, Inc.
$PM_{2.5}$	particulate matter < 2.5 microns
PM_{10}	particulate matter < 10 microns
ROH	Revised Ordinances of Honolulu
ROI	region of influence
ROW	right of way
SCAP	Stream Channel Alteration Permit
SMA	Special Management Area
SHPD	State Historic Preservation Division
SO_2	sulfur dioxide
TMK	tax map key
USACE	United States Army Corps of Engineers
U.S.	United States
U.S.C.	United States Code
USDA	United States Department of Agriculture
USFWS	United States Fish and Wildlife Service
VMT	Vehicle Miles Traveled
WkA	Waialua silty clay
WQC	Water Quality Certification

1.0 INTRODUCTION

The State of Hawaii Department of Transportation (DOT), in cooperation with the Federal Highway Administration (FHWA), proposes to replace the existing Kawela Stream Bridge located on Kamehameha Highway, in the District of Koolauloa, Oahu (Figure 1-1). The proposed project would use both federal and state funds, and therefore triggers the environmental review process mandated under the National Environmental Policy Act (NEPA) of 1969 and Hawaii Revised Statutes (HRS) Chapter 343.

This environmental assessment (EA) has been prepared in accordance with the NEPA, as amended (42 United States Code [U.S.C.] Section (§) 4321, et seq.); the Council on Environmental Quality (CEQ) regulations for implementing the procedural provisions of NEPA (40 Code of Federal Regulations [CFR] Parts 1500-1508); the FHWA Environmental Impact and Related Procedures (23 CFR Part 771); HRS 343, Environmental Impact Statements; and the Hawaii Administrative Rules (HAR) 11-200, Environmental Impact Statement Rules.

1.1 PURPOSE OF AND NEED FOR ACTION

The purpose of this project is to replace the existing Kawela Stream Bridge, constructed in 1931, with a new structure that would meet current DOT and the American Association of State Highway and Transportation Officials (AASHTO) design standards, including seismic design criteria and present day vehicular loading criteria. The bridge would also be widened to allow for shoulders in both directions of travel. The incorporation of current design criteria into the replacement bridge would significantly improve the overall safety of the bridge for motorists and pedestrians.

1.2 REQUIRED PERMITS AND APPROVALS

In addition to the environmental disclosure requirements of NEPA and HRS 343, the proposed action requires federal, state, and county permits and/or approvals. Permits and approvals that may be required for implementation of the proposed action are summarized in Table 1-1. Agency determinations received to date are included in Appendix A.

Table 1-1: Permits and Approvals for Implementation of the Proposed Action

Permit or Approval	Description	Regulation(s)	Administrative Authority
CWA § 401 WQC	§ 401 of the CWA requires that federally permitted actions be reviewed for compliance with state water quality standards, if those actions may result in the discharge of pollutants to waters of the U.S. within the State. State approval is granted via the § 401 WQC. Per a determination obtained from the USACE, the proposed project would not require a § 404 DA Permit (Appendix A). Therefore, a § 401 WQC would also not be required.	§ 401 of CWA (33 U.S.C. §§ 1251 et seq.); HRS 342D	DOH CWB
CWA § 402 NPDES Permit(s)	§ 402 of the CWA establishes the NPDES program regulating the discharge of pollutants to waters of the U.S. NPDES Permits are required to authorize discharges of storm water associated with construction activities; discharges of construction dewatering effluent; and discharges of hydrotesting effluent.	§ 402 of CWA (33 U.S.C. 1251 §§ et seq.); HRS 342D; HAR 11-55	DOH CWB

Permit or Approval	Description	Regulation(s)	Administrative Authority
CWA § 404 DA Permit	§ 404 of the CWA regulates the discharge of dredge or fill material into waters of the U.S. Regulated activities include most earthmoving activities within the territorial sea, in and along streams below the ordinary high water mark, and within jurisdictional wetlands. Per a determination obtained from the USACE, the proposed project would not require a § 404 Permit (Appendix A).	§ 404 of CWA (33 U.S.C. §§ 1251 et seq.)	USACE
CZM Federal Consistency Determination	All federally proposed or permitted actions within the State of Hawaii must be evaluated for consistency with the Hawaii CZM Program.	CZM Act (16 U.S.C. §§ 1451 et seq.); 15 CFR 930; HRS 205A	Office of Planning, DBEDT
ESA Section 7 Consultation	Required for all federal actions to ensure minimization of potential adverse impacts to federally protected species.	ESA (16 U.S.C. § 1531)	USFWS, NOAA Fisheries
NHPA Section 106 Consultation	Federal agencies are required to consult with the SHPD to seek ways to avoid, minimize, or mitigate adverse effects of a federal action on historic properties.	NHPA (16 U.S.C. § 470); 36 CFR Part 800	DLNR SHPD
FPPA	Federal agencies must identify and consider the adverse effects of federal actions on the preservation of farmland.	FPPA (2000 CFR Title 7, Volume 6, Part 658)	USDA
SMA Permit	An SMA Permit is required for any development within the SMA boundary, including construction, reconstruction, demolition, or alteration of the size of any structure.	HRS 205A; HAR 15-150; ROH Chapter 25	CCH, DPP
SCAP	A SCAP is required for proposed activities that would alter a stream channel or instream flow characteristics. Per a determination obtained from the CWRM, the proposed project would not require a SCAP (Appendix A).	HRS 174C; HAR 13-169	DLNR CWRM
Grading Permit	A grading permit is required for grading that exceeds 50 cubic yards of cut or fill, or that exceeds 3 feet in vertical height at its deepest point.	ROH Chapter 14	CCH, DPP
Flood Hazard Variance	Projects located within a flood district may require a flood hazard variance. Per communication with the CCH, DPP a flood hazard variance would not be required for the proposed bridge replacement (Appendix A).	ROH §21-9.10	CCH, DPP

CCH	City and County of Honolulu	FPPA	Farmland Protection Policy Act
CWA	Clean Water Act	NHPA	National Historic Preservation Act
CWB	Clean Water Branch	NOAA	National Oceanic and Atmospheric Administration
CWRM	Commission on Water Resource Management	NPDES	National Pollutant Discharge Elimination System
CZM	Coastal Zone Management	ROH	Revised Ordinances of Honolulu
DA	Department of the Army	SCAP	Stream Channel Alteration Permit
DBEDT	Department of Business, Economic Development and Tourism	SHPD	State Historic Preservation Division
		SMA	Special Management Area
DLNR	Department of Land and Natural Resources	USACE	U.S. Army Corps of Engineers
DOH	Department of Health	USDA	U.S. Department of Agriculture
DPP	Department of Planning and Permitting	USFWS	U.S. Fish and Wildlife Service
ESA	Endangered Species Act	WQC	Water Quality Certification

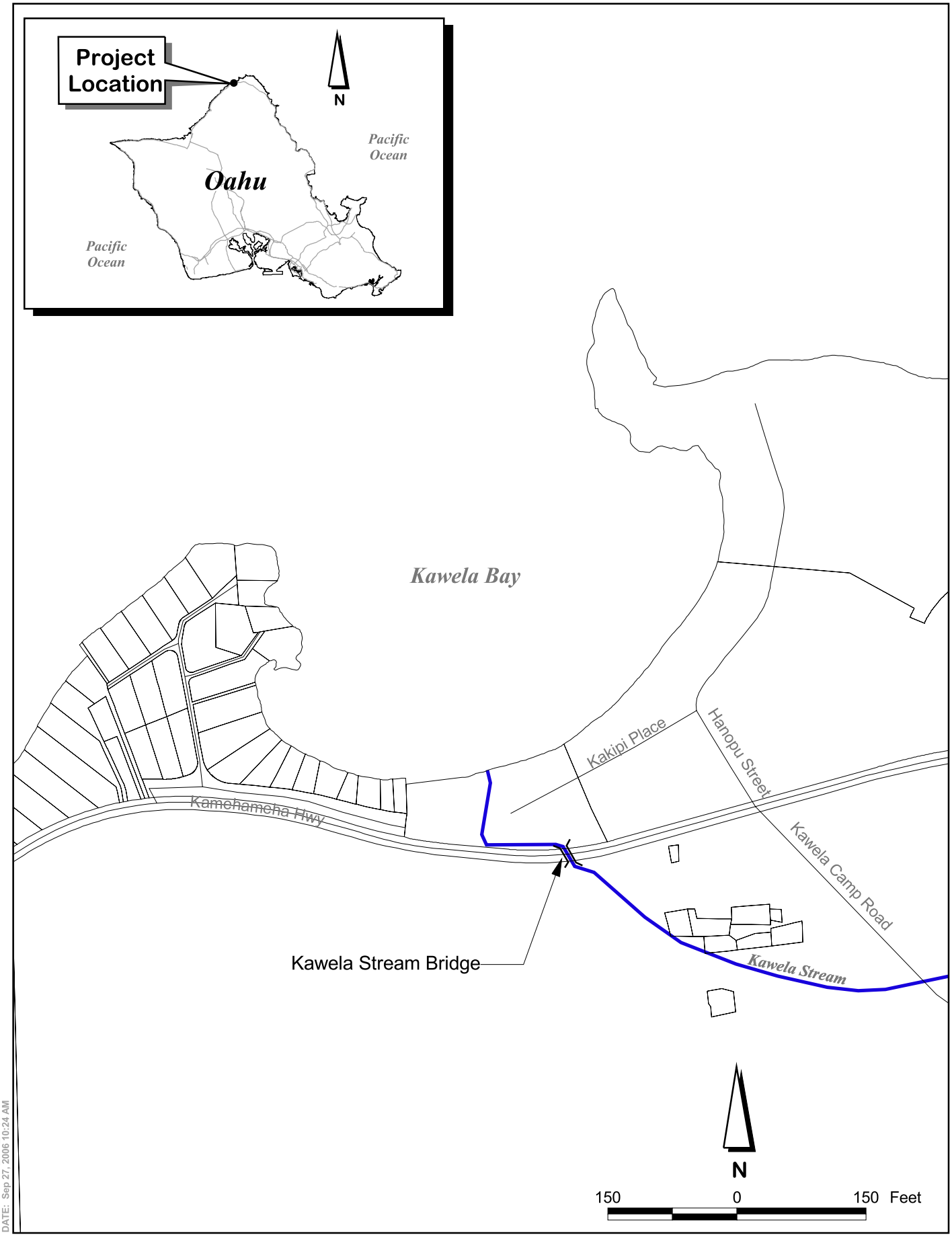

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Figure 1-1
Project Location Map
Kawela Stream Bridge Replacement
Oahu, Hawaii

2.0 PROJECT DESCRIPTION

This section provides background information on the proposed project, and a description of the proposed action and alternatives, including the no-action alternative.

2.1 PROJECT LOCATION AND BACKGROUND

The Kawela Stream Bridge is located on Kamehameha Highway, in the District of Koolauloa, on the North Shore of Oahu. Constructed in 1931, this bridge serves as an important transportation link between the North Shore and Windward communities of Oahu. The existing bridge is a one span reinforced concrete deck girder structure, 24 feet (ft.) in length and 27.4 ft. wide, allowing for a single travel lane in each direction. Abutments and parapets are also constructed of reinforced concrete. Photographs of the existing Kawela Stream Bridge and surrounding area are included as Appendix B.

2.2 PROPOSED ACTION

The DOT, in cooperation with the FHWA, proposes to replace the Kawela Stream Bridge on Kamehameha Highway to meet current DOT and AASHTO design standards (DOT 2005; DOT 2006; AASHTO 2007). The proposed action includes: construction of a temporary bypass bridge and detour road (Section 2.2.1); demolition of the existing bridge and construction of a new bridge and approaches (Section 2.2.2); resurfacing and installation of new guardrails, pavement markings, and striping (Section 2.2.3); and finally, the demolition of the temporary bypass bridge and detour road (Section 2.2.4).

2.2.1 Construction of a Temporary Bypass Bridge and Detour Road

A temporary bypass bridge and detour road would be constructed mauka of the existing road (Figure 2-1). The detour bridge, approximately 120 ft. long by 30 ft. wide, would be a single-span steel bridge (Acrow Panel). No in-stream pier would be employed for the detour bridge. A construction easement would be required for construction of the temporary bypass bridge.

Demolition activities to be undertaken for construction of the detour road include: clearing, grubbing, and grading; removal of existing guardrail, guardrail posts, signs, and pavement striping; and relocation of an existing fence and gate within the detour road alignment. The temporary detour road would consist of approximately two 11-ft. vehicular travel lanes. Barricades and other traffic controls would be installed to clearly delineate the construction detour plan. Approximately 1.2 acres of the proposed alignment for the temporary detour road lies outside of the roadway right-of-way (ROW). A map showing the location and dimensions of construction parcels and easements required for implementation of the proposed action is included as Appendix C.

2.2.2 Demolition of the Existing Bridge and Construction of the New Bridge and Approaches

The proposed Kawela Stream Bridge replacement involves demolishing the existing Kawela Stream Bridge and replacing it with a new bridge. The existing bridge would be demolished by cutting and removing the existing bridge abutments and wingwalls at an elevation of 6 ft. above the existing grade (Figure 2-2). Existing bridge abutments and wingwalls below the 6-ft. elevation would be left in-place, so that no excavation within the stream channel would be required.

The replacement bridge would be approximately 40 ft. wide and 44 ft. long (abutment to abutment), providing for two 12-ft. vehicular travel lanes and 8-ft. paved shoulders in both directions of travel. New 20-ft. long approach slabs would be constructed to transition from the highway to the replacement bridge. The replacement bridge would be longer than the existing bridge by approximately 14 ft. and have a wider cross section by approximately 12 ft. The roadway and bridge centerline would not be changed. Retaining walls would be constructed west of the replacement

bridge along both sides of Kamehameha Highway, and east of the replacement bridge along the mauka side of Kamehameha Highway only. Bridge replacement activities would require relocation of existing Signal Corps communication line, existing utility poles, and an existing water line. A bus stop within the project limits may also require temporary relocation. Staging areas for construction equipment and supplies would be located either within the construction easement for the temporary bypass bridge (Appendix C) or within the closed section of Kamehameha Highway, makai of the detour road.

2.2.3 Resurfacing, Installation of New Guardrails, Pavement Markings, and Striping

Upon completion of the bridge replacement, the project area would be resurfaced; approximately 25 linear ft. of new guardrail would be installed at each end of the replacement bridge; and pavement markings, striping, and signage would be restored. Smooth transitions would be constructed at all limits of resurfacing, including the beginning and end of the project limits, connecting approaches, side streets, and driveways.

2.2.4 Demolition of the Temporary Bypass Bridge and Detour Road

Upon completion of the new bridge and approaches, the temporary detour road and bypass bridge would be demolished and land used for construction of the detour road would be restored to the original grade and condition, including grass re-seeding and tree planting.

2.3 PROJECT SCHEDULE, COSTS, AND SOURCE OF FUNDING

Construction activities related to the proposed action are expected to take approximately 18 months to complete, with construction commencing in 2010. The preliminary cost estimate for the Kawela Stream Bridge replacement is $6.5 million, to be funded with both state and federal funds.

2.4 ALTERNATIVES TO THE PROPOSED ACTION

In addition to the proposed action, the no-action alternative is analyzed in this EA. Rehabilitation of the existing bridge was also considered as an alternative during the design phase, but was determined to not meet DOT and FHWA objectives, and was not carried forward. Alternatives to the proposed action are summarized in Sections 2.4.1 and 2.4.2 below.

2.4.1 No-Action Alternative

Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No construction-related activities proposed for bridge replacement would occur. Structural deficiencies with regard to design loading, bridge width, and seismic design criteria would not be corrected. Positive impacts for the transportation and safety and health resources would not be achieved.

2.4.2 Rehabilitation of the Existing Bridge

Rehabilitation of the existing bridge was considered during the design phase but was determined to be more expensive and structurally inferior to complete replacement of the bridge. Therefore, rehabilitation of the existing bridge was determined to not meet the purpose and need for action as well as DOT and FHWA objectives, and was not carried forward.

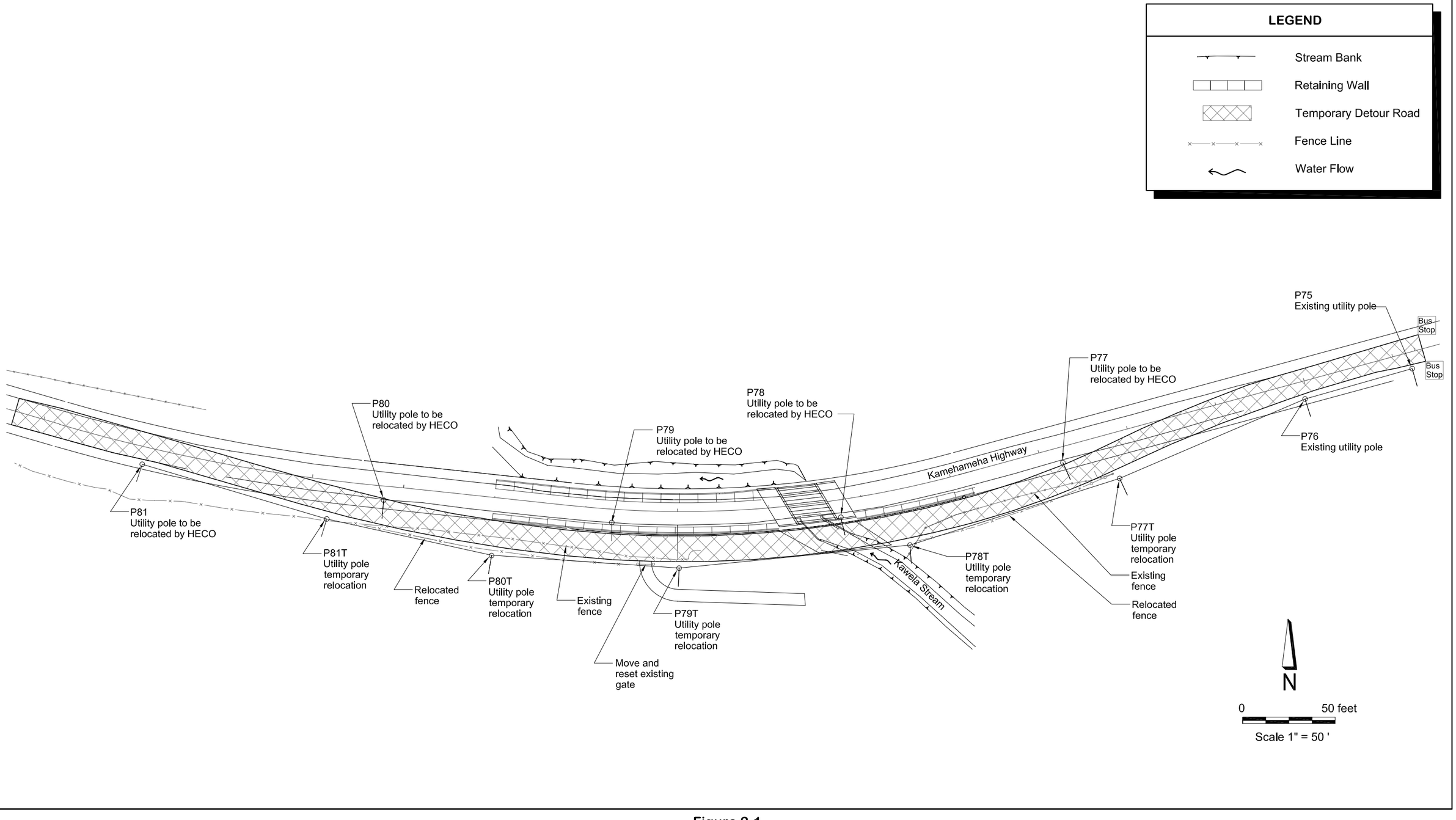

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Figure 2-1
Proposed Action Layout Plan
Kawela Stream Bridge Replacement
Oahu, Hawaii

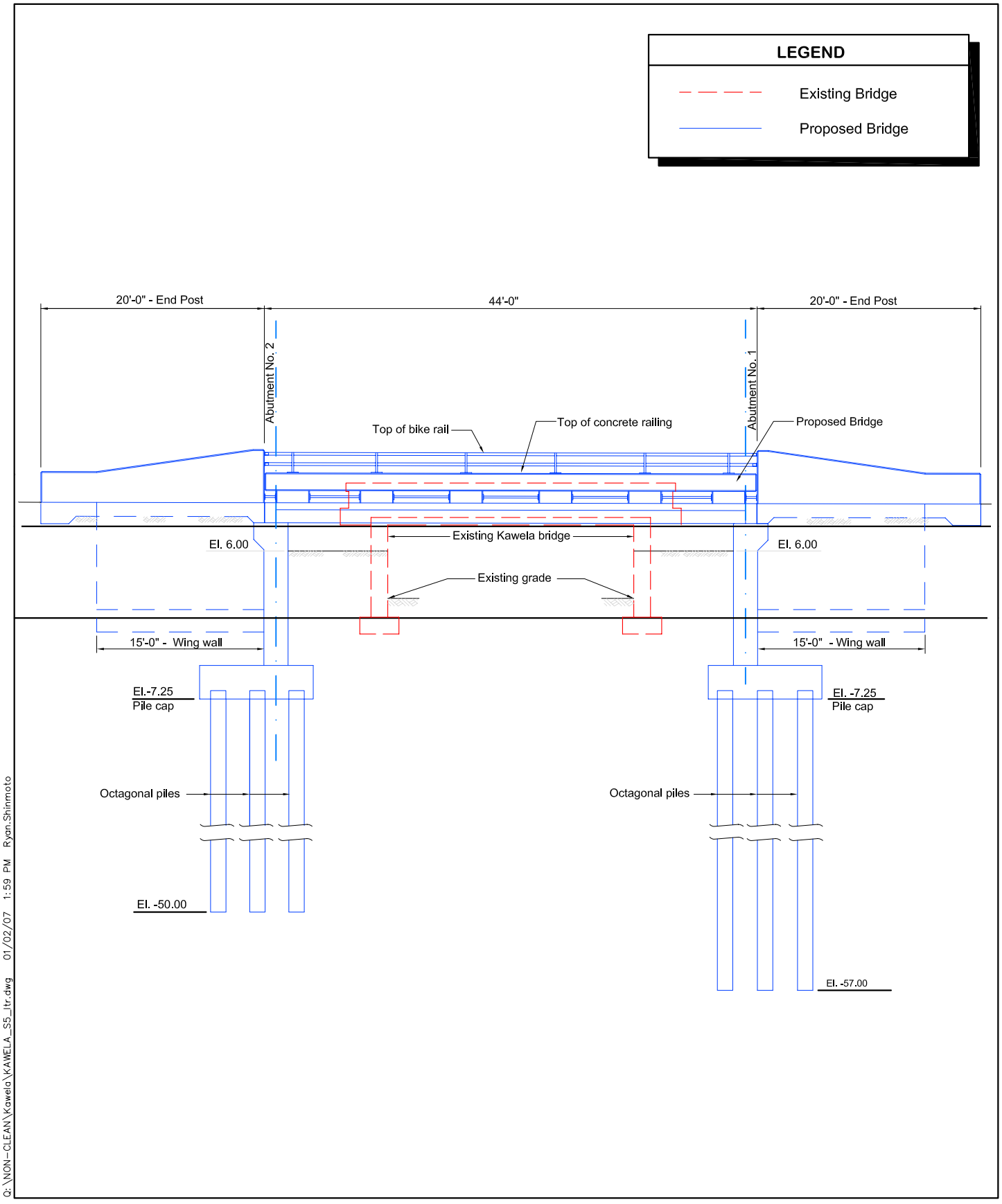

Figure 2-2
Proposed Action Longitudinal Elevation
Kawela Stream Bridge Replacement
Oahu, Hawaii

3.0 DESCRIPTION OF THE AFFECTED ENVIRONMENT

This chapter describes the affected environment associated with the proposed action and the no-action alternative. The information provided serves as a baseline from which to identify and evaluate environmental impacts resulting from implementation of the proposed action or the no-action alternative.

The affected environment describes the natural and man-made environments, which includes air quality, biological resources, cultural resources, hazardous materials and hazardous waste, land use and ownership, natural hazards, noise, socioeconomics, soils and geology, transportation, utilities and infrastructure, visual resources, water resources, and safety and health. The region of influence (ROI) is defined for each resource area affected by the proposed action and the no-action alternative. The ROI determines the geographical area to be addressed as the affected environment.

3.1 AIR QUALITY

Ambient air quality, which refers to the purity of the general outdoor atmosphere, is regulated under the Clean Air Act and the United States (U.S.) Environmental Protection Agency (EPA) National Ambient Air Quality Standards (NAAQS) (40 CFR Part 50). The Hawaii Department of Health (DOH) also regulates air quality and established ambient air quality standards (HAR 11-59-4) that are as strict or, in some cases, stricter than the federal NAAQS. The State of Hawaii has also established standards for fugitive dust emissions emanating from construction activities (HAR 11-60.1-33). These standards prohibit any visible release of fugitive dust from construction sources without taking reasonable precautions.

The ROI for air quality is the proposed project area and downwind areas. Downwind areas vary during the year and air quality is affected by the climate. The climate is characterized by two distinct seasons, primarily defined by the annual variation in persistence of the northeast trade winds. The summer months from May to September are typically drier and warmer, while the winter months from October to April are usually wetter and cooler. The area is subject to prevailing northeast trade winds a majority of the year, with average velocities between 14 to 16 miles per hour (mph). Strong gusts up to 20 or 25 mph do occur intermittently. The area also experiences Kona (southerly) winds and storms particularly during the winter months.

Modeling of downwind areas was not completed as part of this assessment. However, typical predominant downwind areas of the ROI would normally include places to the south-southwest. During Kona winds, downwind areas would typically be places to the north or east.

The State of Hawaii monitors ambient air quality at 10 stations on the island of Oahu for six regulated pollutants including:

- Particulate Matter less than 10 microns (PM_{10})
- Particulate Matter less than 2.5 microns ($PM_{2.5}$)
- Carbon Monoxide (CO)
- Ozone (O_3)
- Sulfur Dioxide (SO_2)
- Nitrogen Dioxide (NO_2)

In 2007, the State of Hawaii met all federal ambient air quality standards. There were no occurrences of criteria pollutant levels exceeding the NAAQS at any air monitoring stations on Oahu (DOH 2008). Land uses in the project vicinity include agricultural, residential, and open space (Section 3.5). The primary sources of air pollutants are emissions from motor vehicles traveling on Kamehameha Highway and emissions from agricultural activities. Criteria pollutant levels within the

ROI are expected to be less than or comparable to levels reported at air monitoring stations, as air monitoring stations are generally placed near city centers where there are mixed commercial, industrial, and residential land uses. Therefore, existing air quality within the ROI is assumed to be in compliance with federal and state air quality standards.

3.2 BIOLOGICAL RESOURCES

The ROI for biological resources, including flora and fauna, is the project area, and downstream aquatic habitat. A biological resource survey of the project area was conducted by AECOS, Inc. (AECOS) in August 2006. A summary of biological resources occurring within the ROI is presented below. A complete list of aquatic and terrestrial species recorded within the ROI, and a summary of the methodology used to conduct the biological resource survey, can be found in the biological resource survey report included as Appendix D.

3.2.1 Aquatic Biology

The aquatic resources survey found 14 different aquatic species of mollusks, crustaceans, insects, amphibians, and fishes. Four species are endemic, one is indigenous, and nine species are naturalized. No aquatic species of special interest, or that are currently protected, or proposed for protection under either the federal or state endangered species statutes, or their critical habitat, were recorded within the project area (AECOS 2006).

Several sightings of the threatened green sea turtle (*Chelonia mydas)* were observed in Kawela Bay near the stream mouth around mid-day on August 11, 2006. At the time of these observations there was no connectivity between Kawela Stream and Kawela Bay. Kawela Stream terminates behind the shore of Kawela Bay in a *muliwai*: a pond or estuarine feature behind a sand shoreline. Surface waters from Kawela Stream only reach the bay during heavy rain events when the impoundment is breached.

3.2.2 Flora

The flora survey found 55 species of ferns and flowering plants. Of these 55 species, none is endemic (native to Hawaii and found naturally nowhere else), one is indigenous (native to Hawaii, but not unique to Hawaii), three are ornamental (exotic, ornamental; plant not naturalized at this location and not well-established outside cultivation), and four are Polynesian introduced species. The remaining 50 species are introduced species that have naturalized on Oahu.

The site riparian vegetation is composed of an open area adjacent to the highway and the highway bridge where the stream channel is overgrown with California grass (*Urochloa mutica*) and a dense forest of mostly hau (*Hibiscus tiliaceus*) along the stream behind Kawela Beach. In the area to be cleared for construction of a temporary vehicular crossing immediately upstream of the existing bridge, the vegetation is as described for the open riparian area, but with elephant grass (*Pennisetum purpureum*), an introduced species, dominating much of the stream channel. Trees to be cleared for construction of the temporary detour road are predominantly *koa haole* (*Leucaena leucocephala*).

No botanical species of special interest, or that are currently protected, or proposed for protection under either the federal or state endangered species statutes, or their critical habitat, were recorded within the project area (AECOS 2006).

3.2.3 Avifauna and Mammals

A total of 126 individual birds of 13 different species, representing 11 separate families, were recorded during station counts. All 13 species recorded are considered to be alien birds in the Hawaiian Islands. Avian diversity was relatively low, though in keeping with the habitat present on the site. Three species—red-vented bulbul (*Pyconotus cafer*), Japanese white-eye (*Zosterops*

japonicus), and house finch (*Carpodacus mexicanus frontalis*)—accounted for slightly more than 45 percent (%) of the total number of birds recorded during station counts. The most common avian species recorded was red-vented bulbul, which accounted for 21% of the total number of individual birds recorded. An average of 42 individual birds was recorded per station count. No mammals were recorded during the time that the zoologist was on site.

No avifaunal or mammalian species of special interest or that are currently protected, or proposed for protection under either the federal or state endangered species statutes were detected during the course of this survey (AECOS 2006).

3.3 CULTURAL RESOURCES

The ROI for cultural resources is the project area. 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 purposes of this EA, cultural resources are defined to include prehistoric and historic archaeological sites, historic buildings and structures, and traditional (i.e., native Hawaiian) sites and cultural practices.

An archaeological reconnaissance survey of the project area and cultural impact assessment were performed by Pacific Consulting Services, Inc. (PCSI) (PCSI 2006). The resulting cultural impact assessment report is included as Appendix E.

PCSI conducted a reconnaissance survey of the ROI in the vicinity of Kawela Stream Bridge in August 2006 to determine the presence or absence of surface archeological sites in the ROI and to document the existing bridge through color photography. The environment in the vicinity of the bridge and the ROI has been previously disturbed by road construction as well as by adjacent farming activities east of the highway.

No archaeological surface features were encountered during the survey within the ROI. It was observed that the ground surface of the ROI had been bulldozed and graded for many years. No subsurface deposits were observed in the stream cuts on either side of Kawela Stream Bridge.

The cultural impact assessment included a field inspection and archival research on the land use history of the subject parcel area. No archaeological sites are known to be or were found within or adjacent to the ROI. As part of the cultural impact assessment, PCSI also attempted to locate and consult with knowledgeable individuals concerning the presence of cultural sites or the existence of ongoing cultural practices in the ROI, but did not yield any results.

Although the existing Kawela Stream Bridge is historic in age (i.e., greater than 50 years), it is not deemed significant per correspondence with the State Historic Preservation Division (SHPD) (Appendix E). However, because the bridge is of historic age, detailed photos of the entirety of the bridge were taken during the reconnaissance survey and submitted to the SHPD for archive.

3.4 HAZARDOUS MATERIALS AND HAZARDOUS WASTE

The ROI for hazardous materials and hazardous waste is the project area. For the purpose of the following analysis, the term hazardous materials or hazardous waste will mean those substances defined by the Comprehensive Environmental Response, Compensation, and Liability Act (CERCLA), 42 U.S.C. §§ 9601 et seq., and the Resource Conservation and Recovery Act (RCRA), 42 U.S.C. §§ 6901-6992. In general, these include substances that, because of their quantity, concentration, or physical, chemical, or toxic characteristics, may present an unreasonable risk to health, safety, and the environment when released.

Current and historic land use within the project area is not associated with the use or storage of hazardous materials; however, hazardous materials may be transported on Kamehameha Highway.

In addition, there are no identified CERCLA or RCRA sites within or immediately adjacent to the project area. Transportation of hazardous materials is regulated by the DOT regulations within Title 49 CFR Parts 171-180.

3.5 LAND USE AND OWNERSHIP

The land use and ownership ROI is the project and adjacent areas. The Kawela Stream Bridge is located within the state ROW for Kamehameha Highway. Adjacent properties include tax map key (TMK) 5-7-001:021 and TMK 5-7-006:022 (Figure 3-1). TMK 5-7-001:021 has a state land use designation of Agricultural District and a City and County of Honolulu (CCH) zoning of AG-1 Restricted Agricultural District; this parcel is owned by Kahuku Land, Limited Liability Corporation (LLC) and leased by FPI Commercial, Incorporated (Inc.). TMK 5-7-006:022 has a state land use designation of Urban District and a CCH zoning of P-2 General Preservation District and is owned by Kuilima Resort Company (DPP 2006), however, it is currently undeveloped.

The project area is located entirely within a Special Management Area (SMA) (Figure 3-1). The purpose of the SMA is to preserve, protect, and where possible, restore the natural resources of the coastal zone of Hawaii and to insure that adequate public access is provided to public owned or used coastal areas. Areas within the SMA are subject to special controls on development, regulated by the CCH Department of Planning and Permitting (DPP) via a SMA permitting process. Any development within the SMA, as defined by Revised Ordinances of Honolulu (ROH) §25-1.3, must be authorized by a SMA Minor or Major permit.

In addition, the proposed project would use FHWA funds and is therefore subject to review for consistency with the State of Hawaii Coastal Zone Management (CZM) Program via a CZM Federal Consistency Determination administered by the State of Hawaii Department of Business, Economic Development, and Tourism (DBEDT). Objectives of the CZM Program are to protect recreational, historic, scenic and open space, beach and marine resources, and coastal ecosystems; to reduce hazards to life and property due to natural hazards in coastal areas; to manage development and economic uses in the coastal zone area; and to encourage public participation in coastal management.

3.6 NATURAL HAZARDS

Natural hazards include floods, tsunamis, hurricanes, earthquakes, and other natural events that may occur within or adjacent to the project area. These are assessed to determine how they may affect conditions at the ROI and the development of the proposed project.

Floods. The Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) flood zone designations are:

- A – Areas of 100-year flood, base flood elevations not determined
- AE – Areas of 100-year flood, base flood elevation determined
- D – Areas in which flood hazards are undetermined, but possible
- V – Areas of 100-year coastal flood with additional hazards associated with storm waves; base flood elevations not determined
- VE – Areas of 100-year coastal flood with additional hazards associated with storm waves; base flood elevations determined
- XS – Areas of 500 year flood; areas of 100-year flood with average depths of less than one foot or within the drainage area less than one square mile, and areas protected by levees from 100-year flood
- X –- Areas determined to be outside the 500-year flood plain.

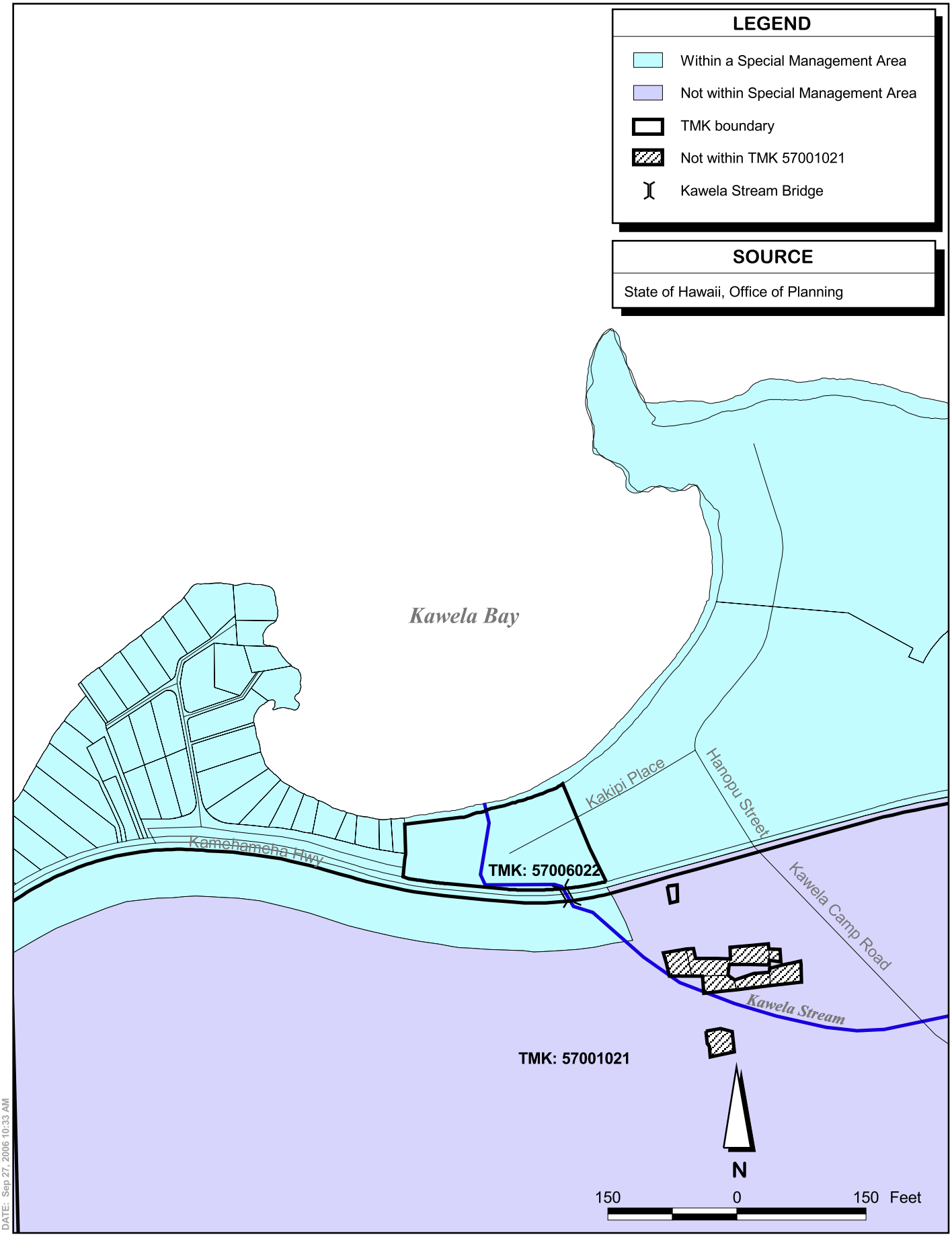

Figure 3-1
Special Management Area
Kawela Stream Bridge Replacement
Oahu, Hawaii

Per FIRM map number 15003C0030F (FEMA 2004), the project area is located within zone VE, indicating that it is within the 100-year coastal floodplain, and is therefore within a Special Flood Hazard Area. Development within a Special Flood Hazard Area must comply with the rules and regulations of the National Flood Insurance Program (44 CFR) and local flood ordinances. The CCH regulates development within flood hazard districts under ROH § 21-9.10.

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, Japan, Alaska, and the west coast of the U.S. Local tsunamis have also been generated by seismic activity on the island of Hawaii.

The State of Hawaii Civil Defense establishes tsunami inundation zones and maps for all coastal areas in Hawaii. The project site is located within the tsunami evacuation zone (PDC 2006).

Hurricanes. The Hawaiian Islands are seasonally affected by Pacific hurricanes from the late summer to early winter months. These storms generally travel toward the islands from a southerly or southeasterly direction and can deposit large amounts of rain with high winds on all the islands. The storms generally contribute to localized flooding and coastal storm surges.

Earthquakes. Because Oahu is an older Hawaiian Island, it is not considered particularly prone to seismic activity. Oahu is listed in Seismic Zone 2A on a scale of 1 to 4 under the Uniform Building Code of 1997 and the International Building Code of 2003. Zone 2A indicates a place that has a low potential for ground motion created by seismic activity.

3.7 NOISE

The ROI for noise effects is the project area and adjacent areas. Noise is often defined as unwanted sound and is one of the most common environmental issues of concern to the public. A number of factors affect sound, as it is perceived by the human ear. These include the actual level of the sound (or noise), the frequencies involved, the period of exposure to the noise, and changes or fluctuations in the noise levels during exposure.

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 of the wide variability in sound amplitudes are subjective.

Different sounds have different frequency content. When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to account for the response of 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). The dBA 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.

The project area is adjacent to agricultural land and urban open space. Existing noise sources in the ROI include equipment and vehicles supporting agricultural activities on the parcel mauka of Kamehameha Highway and vehicular noise associated with transportation on Kamehameha Highway itself. The closest noise receptors are residences located on the western side of Kawela Bay.

FHWA procedures for highway traffic noise analysis and abatement are contained in 23 CFR 772, *Procedures for Abatement of Highway Traffic Noise and Construction Noise*. These procedures specify the requirements that State highway agencies must meet when using Federal-aid funds for highway projects. The State of Hawaii DOT also has a *Noise Analysis and Abatement Policy,*

developed to implement the requirements of 23 CFR 772 as well as the noise-related requirements of NEPA (DOT 1997).

The State of Hawaii regulates noise exposure in the following statutes and rules; HRS 342F *Noise Pollution*, HAR 11-46 *Community Noise Control*, and HAR 12-200.1 *Occupational Noise Exposure*. Per HAR 11-46-4, the maximum daytime permissible sound levels within areas zoned preservation and agricultural are 55 and 70 dBA, respectively. Construction activities may not exceed the maximum permissible sound levels for more than 10% of the time within any twenty minute period, except by permit or variance issued.

3.8 SOCIOECONOMICS

This section summarizes the demographic and income characteristics of residents in the vicinity of the project area. Data summarized in Table 3-1 are taken from the 2000 U.S. Census. Census data are used to describe the existing social and economic characteristics of the ROI and to determine whether any minority or low-income population may experience disproportionately high or adverse impacts from the proposed action or alternatives per the Executive Order (EO) on Environmental Justice (Section 3.8.1). The ROI for socioeconomics is the Kawela Bay Census Designated Place (CDP) in which the project area is located. Data for the City and County of Honolulu is also presented for the purpose of comparison.

In 2000, the CCH reported 876,156 residents. The Kawela Bay CDP reported 410 residents. The population within the CDP is 8.8% Asian, 2.2% Pacific Islander, 1.0% Black, 4.6% Hispanic, and 73.9% Caucasian, compared to 46.0% Asian, 8.9% Pacific Islander, 2.4% Black, 6.7% Hispanic, and 21.3% Caucasian within the general population of the CCH.

Median family income and per capita income are $58,125 and $28,481, respectively within the CDP. Median family income is slightly lower within the CDP compared to the CCH; however, per capita income is higher. Poverty rates within the CDP are not significantly different from poverty rates within the general population of the CCH.

Table 3-1: Demographic and Income Characteristics

	CCH		Kawela Bay CDP	
Characteristic	**No.**	**Percent**	**No.**	**Percent**
Population	876,156		410	
Ethnicity				
Asian	403,371	46.0	36	8.8
Pacific Islander	77,680	8.9	9	2.2
Black or African American	20,619	2.4	4	1.0
Hispanic or Latino	58,729	6.7	19	4.6
Caucasian	186,484	21.3	303	73.9
Other Ethnicity	11,200	1.3	5	1.2
More than one Ethnic Group	174,624	19.9	53	12.9
Income				
Median Family Income	$60,118		$58,125	
Per capita income	$21,998		$28,481	
Poverty Status in 1999				
Families below poverty level	14,477	7.0	14	10.1
Individuals below poverty level	83,937	9.9	49	11.4

Source: U.S. Census Bureau, 2000 Census of Population and Housing (U.S. Census Bureau 2006)

3.8.1 Environmental Justice

EO 12898, *Federal Actions to Address Environmental Justice in Minority Populations and Low Income Populations*, signed by the President on February 11, 1994, directs federal agencies to take the appropriate and necessary steps to identify and address disproportionately high and adverse effects of federal projects on the health or environment of minority and low-income populations to the greatest extent practicable and permitted by law.

The CEQ has issued guidance on compliance with EO 12898, entitled *Environmental Justice, Guidance under the National Environmental Policy Act* (CEQ 1997). Per CEQ guidance, minority populations should be identified where either: 1) the minority population of the affected area exceeds 50% or 2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage of the general population. Minorities are defined as members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. U.S Census Bureau poverty status data are used to identify low-income populations. Poverty status is assigned to individuals and families whose income is below the poverty threshold appropriate for that person's family size and composition, as reported in the U.S. Census Bureau, 2000 Census of Population and Housing.

In 2000, the Kawela Bay CDP reported a population of 410 persons. Of this total, 16.6% were minority and 11.4% reported income below poverty level (Table 3-1). Therefore, for the purpose of compliance with EO 12898 on Environmental Justice, neither a minority nor a low-income population is determined to be present within the ROI.

3.9 SOILS AND GEOLOGY

The ROI for soils and geology is the project area. Soils within the project area are predominantly Waialua silty clay in the Waialua soil series (Figure 3-2). Waialua silty clay consists of moderately well drained soils on alluvial fans on the island of Oahu. These soils developed in alluvium weathered from basic igneous rock. They are nearly level to steep. Waialua silty clay soil occurs on smooth coastal plains. Included in mapping are small areas of Honouliuli, Ka'ena, and Kawaihapai soils. Permeability is moderate, runoff is slow, and the erosion hazard is slight (USDA SCS 1972).

A geotechnical engineering investigation for the Kawela Stream Bridge replacement was completed by the DOT in 2002 (DOT 2002). This investigation included an advancement of two soil borings to a depth of 74 and 75 ft. below ground surface (bgs) at the proposed locations for the bridge abutments. Based on the soil borings, subsurface conditions are characterized by silty sands with coral fragments at the surface, grading to silty clay, silty gravel, and clayey silt to a depth of 59 to 66 ft. bgs and then moderately weathered basalt to the maximum depth explored.

3.10 TRANSPORTATION

The ROI for transportation is the project area and adjacent roadways. The project area includes a 0.31 mile section of Kamehameha Highway and the Kawela Stream Bridge. Kamehameha Highway is a primary road corridor serving the North Shore and Windward communities of Oahu. Kawela Camp Road, which provides access to agricultural land mauka of the project area, intersects Kamehameha Highway within the project limits. An Oahu Transit Services, Inc. (The Bus) bus stop is also located within the project limits.

3.11 UTILITIES AND INFRASTRUCTURE

This section includes information on infrastructure related to electrical power, telecommunications, and water distribution systems. The ROI for utilities and infrastructure is the project area. Existing utilities within the project area include Signal Corps communication line, telephone lines, Oceanic Cable distribution lines, utility poles and electrical distribution lines, and a 16-inch water main.

3.12 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 impact analysis process to determine whether or not projects would be compatible with the existing landscape. Consideration of scenic resources is also a component of the CZM review process.

Land uses in the project vicinity include residential, agricultural, and general preservation. Land mauka of Kamehameha Highway is in agricultural use. A rustic gate accesses the agricultural property near the bridge. Two fruit stands and a bus stop are located within the project limits. Land makai of Kamehameha Highway is largely undeveloped and vegetated with shrubs, trees, and ground cover. This dense vegetation obscures potential view planes or scenic vistas in the direction of the coast, and Kawela Bay is not visible from the project area.

3.13 WATER RESOURCES

This section describes the availability and quality of water resources including surface water and groundwater. Surface water includes lakes, streams and drainage ways, and near shore coastal waters. Groundwater includes water present in aquifers (perched, unconfined, confined, or artesian). The ROI for water resources includes the surface water bodies, streams, and drainage features identified within, or downgradient of, the project area and the underlying aquifer.

Surface Water. Generation of surface water typically begins in the mountains as rainfall. As surface water proceeds downgradient it collects in streams and gulches. A portion infiltrates through the ground surface and streambeds, recharging the underlying aquifer. Potential issues arise if the course or carrying capacity of gulches and streams are changed, as this can cause flooding or scour damage and degradation of downstream water quality.

Surface waters within the project area include the perennial Kawela Stream, which is classified as a Class 2 Inland Water per HAR 11-54-3(b)(2). Kawela Stream terminates behind the shore of Kawela Bay in a *muliwai*: a pond or estuarine feature behind a sand shoreline. Surface waters only reach the bay during heavy rain events when the impoundment is breached. The Kawela Bridge is located approximately 480 ft. from the shore of Kawela Bay.

Groundwater. Two types of groundwater generally occur on Oahu: basal and dike water. The predominant source of groundwater on Oahu is fresh water in the basal aquifer, which floats on and displaces salt water that saturates the base of the island. The second source of groundwater is fresh water that is contained in vertical dikes, which are present in rift zones. Rainwater is the ultimate source of groundwater; it percolates downward through porous and permeable materials, like basalt. Movement of groundwater is generally downgradient towards the ocean, and it typically discharges in seeps, springs, and streams. Coastal sediments can act to confine groundwater movement within underlying basalts, causing artesian conditions during discharge.

The project area is underlain by a shallow and a deep aquifer. The shallow aquifer is identified with the aquifer code 30601116. This aquifer code is defined as a basal aquifer in the Windward sector, Koolauloa system that is unconfined (water table is upper surface of saturated aquifer) and that has a sedimentary geological description (non-volcanic lithology). The status code for this aquifer is identified as 22221, which indicates a potentially useable aquifer that contains ecologically important water, classified as low salinity water that is replaceable and has a high vulnerability to contamination (Mink & Lau 1990).

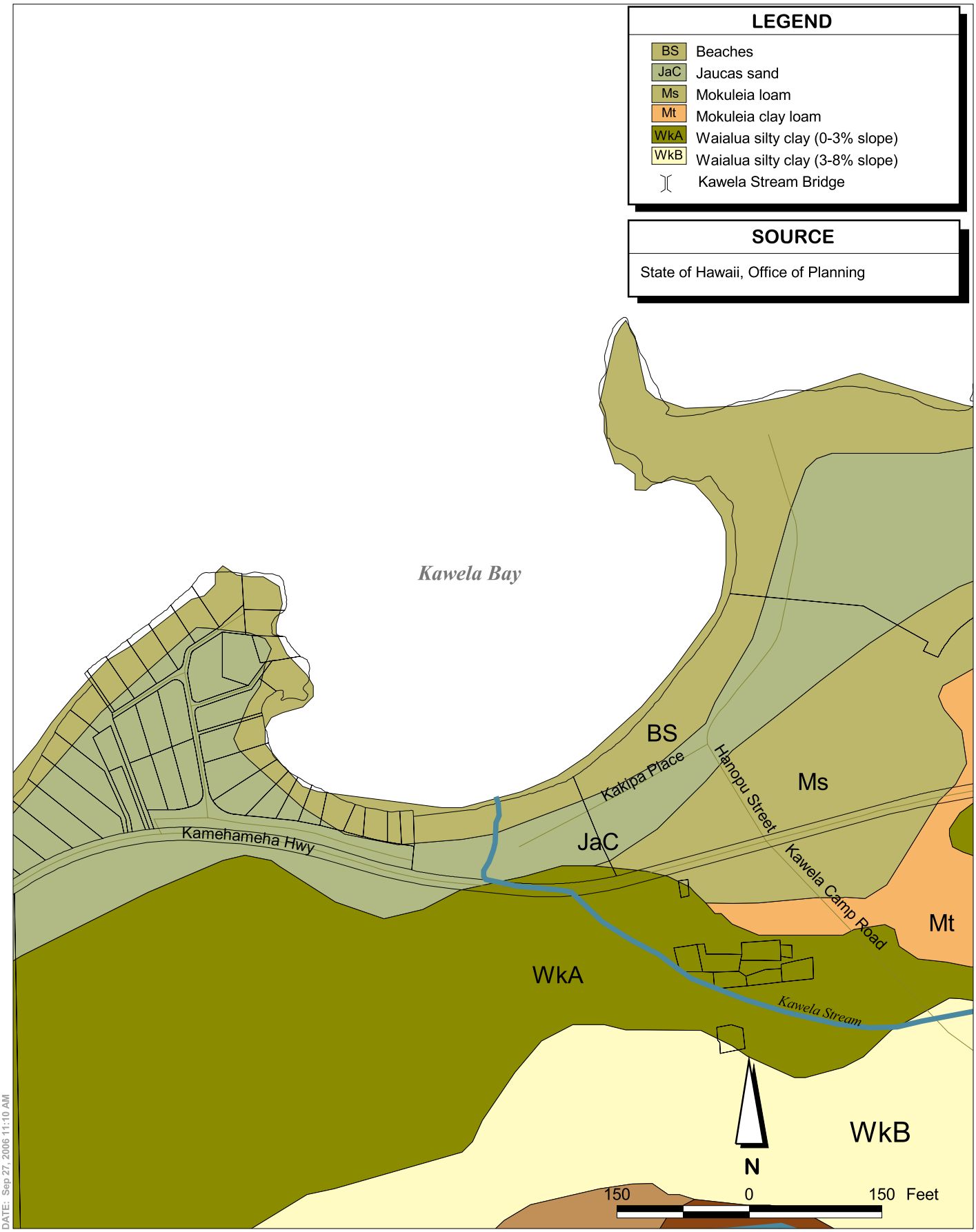

Figure 3-2
NRCS Soils
Kawela Stream Bridge Replacement
Oahu, Hawaii

The deeper aquifer is identified with the aquifer code 30601122. This aquifer code is defined as a basal aquifer in the Windward sector, Koolauloa system that is confined (the aquifer is bounded by impermeable or poorly permeable formations; top of the saturated aquifer is below the surface of the groundwater), and a dike geological description (aquifers in dike compartments). The status code for this deeper aquifer is 21122, which indicates a potentially useable aquifer that contains drinking water, classified as fresh water that is replaceable and has a moderate vulnerability to contamination (Mink & Lau 1990).

3.14 SAFETY AND HEALTH

The Occupational Safety and Health Act (OSHA) regulations (29 CFR Parts 1910 and 1926) set forth safety and health requirements that extend to all U.S. employers and employees. Activities that expose workers to health-threatening situations, such as handling asbestos, exposure to noise or lead dust, and operating heavy equipment, must comply with the requirements of the Act and applicable regulations that implement the Act. The assessment of safety and health considers activities, occurrences, or operations that have the potential to affect the safety and health of workers or the public, or both.

- *Workers*. Workers are persons involved directly with the bridge replacement activities, such as heavy equipment operation, traffic, heat, dust, and noise. There is also an existing underground Board of Water Supply pipeline that would be relocated during the proposed action that the construction workers would be exposed to. The pipeline is assumed to contain asbestos. Dust and noise are addressed in more detail in the air quality and noise sections of this report.
- *Public*. Members of the public are persons who are not workers but may become exposed to the bridge replacement activities, such as noise, traffic, and dust.

4.0 ENVIRONMENTAL CONSEQUENCES

Project-related effects, both adverse and beneficial, include primary, secondary, and cumulative effects. Primary effects or direct impacts are caused by the action and occur at the same time and place. Secondary effects or indirect impacts are caused by the action and occur later in time or are farther removed in distance, but are still reasonably foreseeable. Cumulative effects refer to impacts on the environment 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 of time.

Effects of the proposed project are divided into short-term and long-term effects. Short-term effects are related to construction activities. Long-term effects refer to the effects caused from implementation of the proposed action, and are longer in duration. Anticipated environmental effects of the proposed action and no-action alternative, cumulative impacts, and proposed mitigation measures, where applicable, are summarized below.

4.1 AIR QUALITY

Proposed Action. Only short-term construction-related impacts to air quality are anticipated with implementation of the proposed action. During construction, potential emission sources that may affect air quality at the project site include: 1) fugitive dust emissions from excavation and construction activities, and 2) emissions from diesel and/or gasoline-powered construction equipment and motor vehicles.

Construction vehicles traveling to and from the proposed project area and on-site construction equipment consisting of primarily diesel engines, would contribute to local air pollution. Construction activities may also generate short-term fugitive dust particulate emissions. These sources would be combined with existing emissions from local traffic.

Because levels of criteria pollutants in the CCH are consistently well below federal and state air quality standards (DOH 2008), and because the prevailing trade winds rapidly carry pollutants offshore, short-term increases in levels of criteria pollutants at the project area from construction activities are not expected to be significant for either the workers or the public.

The purpose of this project is to replace the existing Kawela Stream Bridge, constructed in 1931, with a new structure that would meet current DOT and AASHTO design standards, including seismic design criteria and present day vehicular loading criteria. The bridge would also be widened to allow for shoulders in both directions of travel. This project would not result in any meaningful changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that would cause an increase in emissions impacts relative to the no-action alternative. As such, it has been determined that this project would generate negligible air quality impacts for Clean Air Act criteria pollutants and has not been linked with any special Mobile Source Air Toxics (MSAT) concerns. Consequently, this project is exempt from analysis for MSATs.

Moreover, EPA regulations for vehicle engines and fuels will cause overall MSATs to decline significantly over the next 20 years. Even after accounting for a 64% increase in Vehicle Miles Traveled (VMT), FHWA predicts MSATs will decline in the range of 57% to 87%, from 2000 to 2020, based on regulations now in effect, even with a projected 64% increase in VMT. This will both reduce the background level of MSATs as well as the possibility of even minor MSAT emissions from this project (FHWA 2006).

No Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No additional emission sources would be added; hence there would be no change to air quality. No impact to air quality is anticipated from the no-action alternative.

Mitigation Measures. Construction activities would be conducted in accordance with State of Hawaii air pollution control regulations (HAR 11-60.1) and would employ the proper administrative and engineered controls to reduce air emissions. Dust control measures, such as a dust control (watering) program and covering of soil stockpiles during transport or storage, would be developed and implemented by the construction contractor. It is anticipated that EPA and DOH ambient air quality standards would not be exceeded during construction activities.

4.2 BIOLOGICAL RESOURCES

Proposed Action. Only short-term construction-related impacts to biological resources are anticipated from implementation of the proposed action.

*Aquatic Biology***.** Bridge replacement activities would not require any excavation, fill, or recontouring of the stream channel or banks, below the ordinary high water mark. The proposed bridge replacement would not physically alter the stream channel or flow characteristics and would have no long-term impacts to the aquatic environment. Site-specific Best Management Practices (BMPs), including erosion control measures, would be implemented during construction to prevent the release of sediments or other potential pollutants to Kawela Stream during construction. Implementation of construction BMPs would prevent degradation of surface water quality during construction. Therefore, no significant short-term or long-term adverse impacts to the aquatic environment are anticipated with implementation of the proposed action.

Flora. Construction of the detour road would require grubbing and vegetation clearing mauka of Kamehameha Highway. There are no special status botanical species within areas proposed for clearing. Cleared areas would be revegetated upon completion of construction activities and are expected to recover quickly. Therefore, no significant adverse impacts to terrestrial flora are anticipated.

Avifauna and Mammals. Vegetation clearing for the detour road and bridge replacement would remove cover and potential habitat for avifauna and mammals. Noise could also discourage avifauna from foraging or nesting in the area while construction activities are underway; however, any adverse effects to these species or their habitat would be short-term. There are no special status avifaunal or mammalian species within the ROI. No significant adverse impacts to avifauna or mammals are anticipated.

Threatened and Endangered Species. No federally protected species have been recorded within the project area. However, two federally listed species have been recorded downstream in the vicinity of Kawela Bay: the endangered Hawaiian monk seal (*Monachus schauinslandi*) and the threatened green sea turtle (*Chelonia mydas*). Informal Section 7 consultation undertaken with the USFWS resulted in a determination that the proposed action would have no effect on green sea turtles or the Hawaiian monk seal (Appendix A).

National Oceanic and Atmospheric Administration (NOAA) Fisheries determined that no impacts to federally protected species would occur, provided that the following BMPs are implemented during construction:

- If any listed species or otherwise protected species enters the project area, all project activities would cease until the animal(s) voluntarily leave the area.
- All project personnel would be apprised of the status of the listed or otherwise protected species and the protections afforded to the species under federal laws.
- Construction BMPs would be implemented to avoid release of pollutants into the water.

In addition, the Department of Land and Natural Resources (DLNR) Division of Aquatic Resources has requested that should a Hawaiian monk seal be observed in or near the project area that the

sighting be reported to the National Marine Fisheries Service marine mammal hotline at 1-888-256-9840. Copies of agency correspondence are included in Appendix A.

No Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. There would be no change to the biological resources of the project area. Therefore, no biological impacts are anticipated with implementation of the no-action alternative.

Mitigation Measures. Site-specific BMPs would be implemented during construction to prevent the release of sediments to Kawela Stream that could potentially have adverse effects on the aquatic biota. Areas cleared of vegetation would be replanted upon completion of construction. In addition, the BMPs provided by NOAA Fisheries and the DLNR Division of Aquatic Resources would be implemented to ensure the protection of listed species.

4.3 CULTURAL RESOURCES

Proposed Action. The archaeological reconnaissance survey and cultural impact assessment (PCSI 2006) identified no archaeological features within the project area. Archival research did not yield any account of traditional cultural properties or other archaeological sites being present within or near the ROI. The reconnaissance survey conducted did not identify any archaeological sites or cultural deposits in the ROI. Given the extensive prior disturbance of soil deposits in the ROI, the existing roadway and the underlying clay soils, the probability of encountering cultural deposits during construction, including burials, is low. PCSI attempted to locate and consult with knowledgeable individuals concerning the presence of cultural sites or the existence of ongoing cultural practices in the ROI but did not yield any results.

The Kawela Stream Bridge (constructed in 1931) is not recommended eligible for listing on the National or Hawaii Register of Historic Places. Section 106 consultation with the SHPD resulted in a determination that the proposed project would have no adverse effect on historic properties with the condition that the bridge be photographed prior to demolition. Photograph documentation has been completed and was submitted to the SHPD on January 31, 2007 in fulfillment of this condition (Appendix A).

No adverse impacts to cultural resources are anticipated with implementation of the proposed action.

No Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. There would be no demolition or earth moving activities which could impact historic structures, cultural properties, or practices. Therefore, no cultural impacts are anticipated with implementation of the no-action alternative.

Mitigation Measures. If cultural materials, particularly human remains, are unexpectedly discovered during the course of construction, ground disturbing activities would cease in the immediate area and the SHPD would be contacted. If native Hawaiian remains are encountered, the Oahu Burial Council would also be consulted.

4.4 HAZARDOUS WASTES AND HAZARDOUS MATERIALS

Proposed Action. Only short-term construction-related impacts from hazardous materials and hazardous waste are anticipated with implementation of the proposed action. Construction equipment and vehicles contain hazardous materials such as gasoline, diesel, oil, and hydraulic and brake fluids. To minimize the potential for accidental release of these materials into the environment, site-specific BMPs, including procedures for hazardous material storage, handling, and staging; spill prevention and response; waste disposal; and good housekeeping would be developed and implemented by the construction contractor. These BMPs would greatly reduce the potential for

hazardous materials to be released into the environment during construction. The construction contractor would be responsible for compliance with all applicable federal, state, and local regulations governing the transportation, use, storage, and/or disposal of hazardous material and hazardous wastes during construction. No significant impacts related to hazardous materials or hazardous wastes are anticipated with implementation of the proposed action.

No Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No hazardous materials would be brought to the project area. Therefore, no impacts related to hazardous materials or hazardous wastes are anticipated with implementation of the no-action alternative.

Mitigation Measures. Site-specific BMPs, including procedures for hazardous material storage, handling, and staging; spill prevention and response; waste disposal; and good housekeeping would be developed and implemented by the construction contractor. Spill control measures would entail minimization of hazardous materials on the project site, good housekeeping, and rapid spill response in the event of a release. Material management practices would be used to reduce the risk of spills or other accidental release of materials and substances into the environment.

4.5 LAND USE AND OWNERSHIP

Proposed Action. Construction of the proposed detour road would require approximately 1.2 acres of land outside of the state ROW, potentially impacting the land use and ownership of TMK 5-7-001:021. This parcel is owned by Kahuku Land, LLC and leased by FPI Commercial, Inc. The parcel is generally in agricultural use however, the specific area proposed for the detour road is not in cultivation. Construction of the detour road would require clearing, grubbing, and grading outside of the ROW. Portions of an existing fence and gates within the detour road alignment would need to be relocated. Prior to construction, the affected landowner would be contacted to negotiate the lease of the land for the duration of construction. Upon project completion, land leased for construction of the detour road would be restored to its original grade and condition, including grassing and tree planting. Impacts to land use and ownership are expected to be short-term. No significant adverse impacts are anticipated.

The proposed project is located within the Hawaii CZM area and also within a SMA. The proposed project would have no impact on recreational, historic, scenic and open space, beach and marine resources, or coastal ecosystems. It would not increase risks to life or property from coastal hazards and would have no impact on economic use or management of development in the coastal zone area. Therefore, the proposed action is determined to be consistent with State of Hawaii CZM policies and objectives. Concurrence with the DOT's CZM federal consistency certification was obtained from the DBEDT Office of Planning in a letter dated December 1, 2006 (Appendix A).

No-Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No construction activities would take place within or outside of the ROW. Therefore, no short-term or long-term impacts to land use or ownership are anticipated with implementation of the no-action alternative.

Mitigation Measures. The affected landowner would be compensated for lease of 1.2 acres of private property during construction. Upon project completion, land leased for construction of the detour road would be restored to its original grade and condition.

4.6 NATURAL HAZARDS

The Proposed Action. Bridges are typically structures with a low flood damage potential and low potential for obstructing the regulatory flood, affecting the capacity of the floodway, or increasing the regulatory flood elevations. The replacement bridge would be constructed in accordance with current seismic design criteria and would be designed to satisfy the *State of Hawaii Department of Transportation, Highways Division, Design Criteria for Highway Drainage* dated May 15, 2006.

Therefore, no significant impacts relative to natural hazards are anticipated with implementation of the proposed action.

No-Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. There would be no change in the exposure of the existing structure to natural hazards. No significant adverse impacts relative to natural hazards are anticipated with the no-action alternative.

4.7 NOISE

The Proposed Action. Per FHWA regulations, a traffic noise analysis must be performed for all Type I projects which are defined as federal or federal-aid highway projects that would construct a highway at a new location, that would significantly change either the horizontal or vertical alignment of an existing highway, or that would increase the number of through-traffic lanes (23 CFR 772). Since the proposed bridge replacement is not classified as a Type 1 project, no impacts to traffic noise from bridge replacement are anticipated and a traffic noise analysis is not required.

Short-term construction-related noise impacts are anticipated with implementation of the proposed action. Construction equipment employed to implement the proposed action may include trucks (concrete, flat-bed, and dump trucks), bulldozers or backhoes, a crane, a concrete finisher, and an asphalt spreader, among others.

Noise generated by construction equipment could produce localized noise events of 100 dBA or higher at the construction site, with noise levels decreasing with distance from the site. Typical noise levels generated by construction tools range from 65 dBA to 110 dBA. Heavy construction equipment noise levels at 50 feet typically range between 75 and 89 dBA for equipment such as concrete trucks, cranes, bulldozers, scrapers, and trenching machines (USACE 1978). Noise from construction activities would decrease with distance from the project area through divergence, atmospheric absorption, shielding by intervening structures, and absorption and shielding by ground cover.

Noise generated from proposed demolition and construction activities would be intermittent and short-term, and would primarily occur at the construction site. To minimize noise impacts, construction activities would be conducted in accordance with State of Hawaii requirements set forth in HRS 342F - *Noise Pollution* and HAR 11-46 – *Community Noise Control*, establishing maximum permissible sound levels from excessive noise sources, noise prevention, control and abatement guidelines, and permit criteria. With implementation of appropriate administrative and engineering controls during construction, no significant adverse noise impacts would be anticipated.

No-Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No demolition or construction activities would occur at the project area and there would be no change to the noise environment. Therefore, no impacts from noise are anticipated under the no-action alternative.

Mitigation Measures. The Hawaii Occupational Safety and Health (HIOSH) Division has set the permissible occupational noise exposure at 90 dBA for a continuous 8-hour exposure. Permissible noise exposures for shorter periods are higher, with a maximum exposure of 115 dBA permissible for a duration of 15 minutes or less (HAR 12-200.1 *Occupational Noise Exposure*). Enforcement of HIOSH occupational noise exposure regulations would be the responsibility of the construction contractor. If workers experience noise exceeding HIOSH standards, administrative or engineering controls shall be implemented. Use of personal protective equipment such as earplugs or muffs may also be required.

To reduce nearby residential noise exposure, construction activities would be conducted on weekdays and in daytime hours in accordance with HRS 342-F-1. In the event that work occurs after

normal working hours (i.e., at night or on weekends), or if permissible noise levels are exceeded, appropriate permitting and monitoring as well as development and implementation of administrative and engineering controls shall be employed.

4.8 SOCIOECONOMICS

Proposed Action. No socioeconomic impacts are anticipated with implementation of the proposed action; the proposed action would not impact employment, income, or demographics within the ROI. Neither a minority nor a low-income population has been identified within the ROI (Section 3.6). Therefore, no adverse impacts per EO 12898 are anticipated.

No Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. The no-action alternative would not impact employment, income, or demographics within the ROI. The no-action alternative would also not disproportionately affect a minority or low-income population.

4.9 SOILS AND GEOLOGY

Proposed Action. Only short-term construction-related impacts to soils and geology are anticipated with implementation of the proposed action. Approximately 750 cubic yards of material would be removed for construction of the temporary detour road and replacement bridge. Clearing, grading, excavating, and recontouring of soils would remove vegetation and expose soil, leaving areas vulnerable to erosion. However, these activities would be of limited duration and impact, and would be mitigated through implementation of site-specific BMPs. The area used for the temporary detour road would be restored to its original elevations and condition upon project completion. Therefore, no significant impacts to soils or geology are anticipated with implementation of the proposed action.

No-Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No excavation or earth moving activities would occur at the project site. Therefore, no impacts to soils or geology are anticipated under the no-action alternative.

Mitigation Measures. Site-specific BMPs, including erosion control measures, would be developed and implemented by the construction contractor. Erosion control measures may include, but are not limited to, the creation of control swales to channel runoff; establishment of sediment traps, sediment basins, or erosion control berms; installation of silt fences; and temporary stabilization of areas graded and barren of vegetation. Upon project completion, permanent erosion control measures would be applied; areas cleared or graded during construction would be stabilized with perennial vegetation or pavement.

4.10 TRANSPORTATION

Proposed Action. Short-term effects of the proposed action include minor changes to traffic patterns, traffic volume, and travel times during the construction period. Redirecting traffic from Kamehameha Highway to a detour road would cause minor disruptions to normal traffic patterns. The arrival and departure of construction crews, and the periodic movement of construction vehicles and materials for staging, may cause short-term increases in traffic volume and traffic delays. The need to redirect traffic to a detour road and reduced speed limits within the work zone may also cause traffic delays during construction.

Long-term impacts of the proposed action are anticipated to be beneficial, as the replacement bridge would improve the Kawela Stream Bridge as a transportation resource, and make it a safer structure for motorists and pedestrians. Projected traffic volumes for 2010 and 2030 are 10,200 and 13,300 annual daily trips, respectively. The replacement bridge design would accommodate these projected traffic volumes.

No Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No construction activities would take place and there would be no change to the transportation resource. No impacts to the transportation resource are anticipated from implementation of the no-action alternative.

Mitigation Measures. Traffic signs and controls would be posted along the detour route, as appropriate, to reduce traffic flow delays and potential hazards from reduced visibility. Signage informing highway users of reduced speed limits and potential traffic delays would be posted on the approach to the work zone.

4.11 UTILITIES AND INFRASTRUCTURE

Proposed Action. Bridge replacement activities would require relocation of existing Signal Corps communication line, existing utility poles, and existing 16-inch water main. Utility poles would be temporarily relocated along the detour road while the new bridge is constructed, and would be relocated along the new road after the new bridge is constructed. The existing Signal Corps cable and the 16-inch water main would be permanently relocated. No interruption of services to local residents is anticipated. Therefore, no significant adverse impacts to utilities are anticipated from implementation of the proposed action.

No Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. The no-action alternative would not add, demolish, or relocate any utilities or infrastructure in the project area. Therefore, no impact to the utility and infrastructure resource is anticipated from implementation of the no-action alternative.

Mitigation Measures. During demolition of the bridge, existing utilities may need to be supported and protected from demolition equipment. The construction contractor would coordinate with utility companies, including the Department of the Army Director of Information Management Office (for Signal Corps coordination), Hawaiian Telecom, the Hawaiian Electric Company, and the Board of Water Supply, to determine the current status of utility lines within the proposed construction area and for assistance in providing proper support and protection of utility lines during construction.

4.12 VISUAL RESOURCES

Proposed Action. Implementation of the proposed action would have short-term impacts to the visual quality of the project area due to construction-related activities (e.g., grading and contouring for the detour road, clearing of vegetation, stockpiling of materials, and equipment staging). Long-term effects are not expected and the overall visual quality of the bridge area would not change significantly. The replacement bridge would not obstruct any view planes or scenic vistas. Consequently, no significant visual impacts are anticipated from implementation of the proposed action.

No Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No demolition or construction activities would occur and there would be no change to the visual quality of the project area. Therefore, no impacts to visual resources are anticipated under the no-action alternative.

4.13 WATER RESOURCES

Proposed Action. Proposed bridge replacement activities would not physically alter the Kawela Stream channel or the flow of water therein, and would not alter surface water drainage patterns within the ROI. The existing bridge would be demolished by cutting and removing the existing bridge abutments and wingwalls at an elevation of 6 ft. above the existing grade. Existing bridge abutments and wingwalls below the 6-ft. elevation would be left in-place, so that no excavation or fill within the stream channel would be required.

Implementation of site-specific BMPs would prevent degradation of water quality within Kawela Stream during construction. The replacement bridge would be constructed so that roadway runoff would drain off the bridge rather than directly into the stream. This design element would prevent pollutants associated with roadway runoff from directly entering the stream. No significant adverse impacts to water resources are anticipated with implementation of the proposed action.

No Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. There would be no change to the water resources within the project area. Therefore, no impacts to water resources are anticipated with implementation of the no-action alternative.

Mitigation Measures. Discharges to Kawela Stream during construction would be authorized under Clean Water Act (CWA) § 402 National Pollutant Discharge Elimination System (NPDES) General Permits administered by the DOH Clean Water Branch (CWB). Permit conditions would specify site-specific BMPs to be implemented during construction in order to prevent degradation of surface water quality and ensure compliance with state water quality standards. Site-specific BMPs to control the discharge of sediment and other pollutants into Kawela Stream may include, but are not limited to, the creation of control swales to channel storm water runoff near the bridge, establishment of sediment traps or erosion control berms, installation of silt fences, and temporary stabilization of areas graded and barren of vegetation. Fueling activities and staging of hazardous materials would be restricted to areas away from drainage features. Material management practices would also be used to reduce the risk of spills or other accidental release of substances to surface waters, including storm water runoff.

4.14 SAFETY AND HEALTH

Proposed Action. Short-term construction related impacts to safety and health relate to worker safety during construction. Health and safety issues for construction workers relate to the operation of construction equipment; occupational noise; fugitive dust; management of vehicular traffic within the work zone; heavy lifting; slips, trips, and falls while working on uneven terrain; and exposure to heat and biological exposure (bites, stings, and allergens).

The safety and health of workers during construction would be the responsibility of the construction contractor; all work conducted would conform to OSHA requirements. BMPs that would be implemented to address air quality and occupational noise exposure at the construction site are presented in Sections 4.1 and 4.7, respectively. Signage would be posted on the approach to the detour bridge to alert drivers that they are entering a work zone and should reduce travel speeds.

Long-term impacts of the proposed action are anticipated to be beneficial, as the replacement bridge would improve the Kawela Stream Bridge, and make it a safer structure for motorists and pedestrians.

No-Action Alternative. Under the no-action alternative, the condition of the bridge would be left *status quo*; the DOT would not replace the existing Kawela Stream Bridge. No demolition or construction activities would occur at the project area and there would be no change to the noise environment. Therefore, no impacts to safety and health are anticipated under the no-action alternative.

Mitigation Measures. To minimize safety and health impacts to the workers and the public, all construction activities involved with implementation of the proposed action would be conducted in accordance with OSHA requirements. In addition; construction workers involved with the relocation of the asbestos-containing pipeline would follow OSHA requirements (29 CFR 1926.1101) and would develop and implement administrative and engineering controls. These measures may include the following:

- Setting up a regulated area, enclosure, or other containment;
- Ensuring (by on-site inspection) the integrity of the enclosure or containment; and/or
- Ensuring through on-site supervision, that employees set up and remove engineering controls, and use personal protective equipment in compliance with all requirements such as, tyvek coveralls, respiratory protection, gloves, etc.

4.15 CUMULATIVE IMPACTS

Cumulative impacts refer to impacts on the environment that result from the incremental effect of an action when added to other past, present, and reasonably foreseeable future actions regardless of what agency (federal or non-federal) or person undertakes such actions. Cumulative impacts can result from individually minor yet collectively significant actions taking place over a period of time. Land use in the project vicinity is agricultural and undeveloped open space. No other past, present, or planned actions associated with these land uses have been identified that would contribute to cumulative impacts for any of the resources considered in this EA. Based on this analysis, no significant cumulative impacts would be anticipated from implementation of either the proposed action or the no-action alternative.

4.16 COMPATIBILITY OF THE PROPOSED ACTION WITH OBJECTIVES OF FEDERAL, STATE AND LOCAL LAND USE PLANS AND POLICIES

The proposed replacement of the Kawela Stream Bridge is consistent with the planning objectives of the *Koolauloa Sustainable Communities Plan,* which is incorporated by reference into the ROH § 24-7. Specifically, the *Koolauloa Sustainable Communities Plan* seeks highway improvements that emphasize highway safety as the highest priority (rather than improvements which increase capacity). Planned improvements include a long-term bridge replacement program, and widening of travel surfaces and shoulder pavement in critical areas along Kamehameha Highway to improve highway safety.

Per the *Koolauloa Sustainable Communities Plan*, the State's bikeway master plan proposes a bike route along Kamehameha Highway in Koolauloa. A bike route is defined as any street or highway so designated for the shared use of bicycles and motor vehicles or pedestrians or both. Bike routes may be designated as a paved right shoulder in rural-type areas. The proposed Kawela Stream Bridge replacement would allow for 8-ft. paved shoulders in both directions of travel, which would be adequate for shared use by bicycles and pedestrians.

Section 3.8.1 of the *Koolauloa Sustainable Communities Plan* outlines policies and planning principals to guide the proposed expansion of the Kuilima Resort. The Master Plan for the Kuilima Resort includes a dedicated public park with shoreline access on the parcel makai of the proposed bridge replacement (TMK 5-7-006:022). The proposed bridge replacement would improve the safety of the bridge for motorists and pedestrians, and would accommodate a future bike path, and is therefore consistent with plans to develop TMK 5-7-006:022 as a public beach park.

4.17 RELATIONSHIP BETWEEN SHORT-TERM USES OF THE ENVIRONMENT AND LONG-TERM PRODUCTIVITY

Construction of the proposed action would result in short-term impacts to air quality, hazardous materials and hazardous waste, noise, soils, and water resources. Impacts to these resources would be short-term and would be mitigated by implementation of construction BMPs as described in Sections 4.1, 4.4, 4.7, 4.9, and 4.13, respectively. Replacement of the Kawela Stream Bridge would provide long-term benefits for the transportation resource and would significantly improve the overall safety of the bridge for motorists and pedestrians throughout its design life.

4.18 IRREVERSIBLE AND IRRETRIEVABLE COMMITMENT OF RESOURCES

Implementation of the proposed action would not result in an irreversible or irretrievable commitment of resources, except for the financial resources, fuel, and other consumable materials required for construction.

5.0 FINDINGS AND DETERMINATION

The following sections summarize the significance criteria used to determine whether the proposed action would have a significant effect on the environment (Section 5.1) and the resulting determination (Section 5.2).

5.1 SIGNIFICANCE CRITERIA

In accordance with HAR § 11-200-12, the proposing agencies have considered every phase of the proposed action, the expected consequences, both primary (direct) and secondary (indirect), and the cumulative as well as the short-term and long-term effects of the action, in order to determine whether the proposed action may have a significant effect on the environment. In making this determination, the proposed action has been evaluated with respect to the significance criteria established in HAR § 11-200-12. These significance criteria are summarized below:

Involves an irrevocable commitment to, loss or destruction of any natural or cultural resources. The proposed bridge replacement would not cause significant adverse impacts to biological resources (Section 4.2), cultural resources (Section 4.3), soils and geology (Section 4.9), or water resources (Section 4.13), and therefore does not involve an irrevocable commitment to, loss or destruction of any natural or cultural resources. Areas disturbed for construction of the temporary detour road would be restored to their original grade and condition upon project completion, including grassing and tree planting.

Curtails the range of beneficial uses of the environment. The proposed action would replace an existing structure and would have no impact on other beneficial uses of the environment within the immediate project area, or project vicinity.

Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in Chapter 344, HRS; and any revisions thereof and amendments thereto, court decisions, or executive orders. The proposed development is consistent with the state environmental policies, goals, and guidelines established in Chapter 344, HRS. The DOT has integrated the review of environmental effects with existing planning processes, and has developed the bridge replacement design with consideration for avoiding, minimizing, and mitigating any adverse environmental effects. Other federal, state, and county agencies identified as having expertise or jurisdiction by law, were also consulted during the planning and permitting processes (see Section 6.0). In accordance with HRS § 344-5, this EA was made available for public review and comment for a period of thirty days. All comments received during the public comment period are responded to in the Final EA.

Substantially affects the economic or social welfare of the community or state. The proposed bridge replacement would have no significant socio-economic impacts on the community or state, as it would not impact population numbers, demographics, or employment (Section 4.8). The proposed action would have no adverse impacts on cultural resources or practices within the ROI (Appendix E). Surrounding land uses would not be altered, nor would unplanned population growth be stimulated.

Substantially affects public health. Potential short-term construction related impacts to public health and safety would be mitigated through the implementation of construction best management practices and other administrative or engineering controls described in Sections 4.1, 4.4, 4.7, 4.10, and 4.14. Long-term impacts of the proposed action on public health and safety are anticipated to be beneficial, as the replacement bridge would improve the Kawela Stream Bridge as a transportation resource, and make it a safer structure for motorists and pedestrians.

Involves substantial secondary impacts, such as population changes or effects on public facilities. No adverse secondary impacts on the environment (such as population changes or effects on public facilities) would be anticipated with implementation of the proposed action.

Involves a substantial degradation of environmental quality. Per the analysis conducted in this EA, the proposed bridge replacement would not cause any impacts that would substantially degrade environmental quality.

Is individually limited, but cumulatively has considerable effect on the environment, or involves a commitment for larger actions. Land use in the project vicinity is agricultural and undeveloped open space. No other past, present, or planned actions associated with these land uses have been identified that would contribute to significant cumulative impacts for any of the resources considered in this EA.

Substantially affects a rare, threatened, or endangered species or its habitat. No aquatic, botanical, avifaunal or mammalian species that are currently protected, or proposed for protection under either the federal or state endangered species statutes, or their critical habitat, were recorded within the project area. However, the federally endangered Hawaiian monk seal and the threatened green sea turtle have been recorded downstream in the vicinity of Kawela Bay. BMPs provided by NOAA Fisheries and the DLNR Division of Aquatic Resources (Section 4.2) would be implemented during construction to ensure the protection of listed species. Botanical species to be cleared during construction would be predominantly introduced species that have naturalized on Oahu. Avian diversity is low and only alien species of birds were recorded within the project ROI.

Detrimentally affects air or water quality or ambient noise levels. Only temporary construction-related impacts are anticipated to air quality (Section 4.1) and ambient noise levels (Section 4.7). Adverse impacts to water resources would be prevented through development and implementation of site-specific BMPs (Section 4.13). No long-term, direct or indirect, adverse impacts to these resources are anticipated from implementation of the proposed action.

Affects or is likely to suffer damage by being located in an environmentally sensitive area, such as flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, freshwater, or coastal waters. The project area is located within a Special Flood Hazard Area and within a tsunami evacuation zone. Bridges are typically structures with a low flood damage potential and low potential for obstructing the regulatory flood, affecting the capacity of the floodway, or increasing the regulatory flood elevations. The replacement bridge would be constructed in accordance with current seismic design criteria.

Substantially affects scenic vistas and view planes identified in county or state plans or studies. The overall visual quality of the bridge area would not change significantly as a result of bridge replacement. The coast is not visible from the Kawela Stream Bridge and the replacement bridge would not obstruct any view planes or scenic vistas.

Requires substantial energy consumption. Construction of the proposed project would not require substantial energy consumption.

5.2 DETERMINATION

Based on the above evaluation of the significance criteria and the discussion of impacts and mitigation measures contained in this EA, it is anticipated that the proposed action would not have a significant adverse impact on the environment. Therefore, a Finding of No Significant Impact has been determined.

6.0 CONSULTATION AND COORDINATION

Consultation and coordination with the following federal, state, and county agencies was conducted for the proposed project.

Name	Organization
Mr. Dean Takiguchi	State of Hawaii DOT, Highways Division
Mr. Ling Jun Kong	State of Hawaii DOT, Highways Division
Ms. Connie Ramsey	U.S. Department of the Army, Regulatory Branch
Ms. Margaret Akamine	NOAA Fisheries, Pacific Islands Regional Office
Ms. Elizabeth Sharpe	USFWS, Pacific Islands Fish and Wildlife Office
Mr. John Nakagawa	State of Hawaii DBEDT, Office of Planning
Mr. Ed Sakoda	State of Hawaii DLNR, CWRM
Mr. Josh Hekekia	State of Hawaii DLNR, CWRM
Mr. Bryan Flower	State of Hawaii SHPD, Architecture Branch
Mr. Chris Monahan	State of Hawaii SHPD, Archaeology Branch
Mr. Jesse Yorck	State of Hawaii, OHA
Mr. Mario Siu-Li	CCH, DPP, Subdivision Branch
Ms. Carrie McCabe	CCH, DPP, Land Use Approval Branch

7.0 LIST OF PREPARERS

Ms. Michelle Mason, Senior Environmental Professional
BS, Urban Studies, Stanford University, 1987
Years of Experience: 20

Ms. Tanya Copeland, Senior Environmental Professional
MS, Ecology and Evolution, University of Illinois, Chicago, 1999
BA, Chemistry, University of Illinois, Chicago, 1991
Years of Experience: 14

Ms. Dricka Brown, Staff Environmental Scientist
BA, Environmental Science, University of California at Santa Barbara, 2000
Years of Experience: 4

8.0 REFERENCES

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9.0 COMMENTS ON THE DRAFT EA

Availability of the Draft EA was announced in the February 23, 2007 edition of the *Environmental Notice*, which initiated a 30-day public comment period. Copies of the Draft EA were mailed to state and county agencies; affected landowners; public libraries; and the Koolauloa Neighborhood Board. All comments received during the public comment period were considered during preparation of the Final EA. The distribution list for the Draft EA and dates that comments were received are summarized in Table 9-1. A compilation of the comments received and the responses to the comments are included in Appendix F. Agencies that commented on the Draft EA were included on the distribution for the Final EA.

Table 9-1: Distribution List for the Draft EA

Distribution List for the Draft EA	Provided Comments
State of Hawaii Agencies	
Office of Environmental Quality	March 19, 2007
Department of Business, Economic Development, and Tourism	
Department of Health	March 27, 2007
Department of Land and Natural Resources	
Division of Aquatic Resources	April 5, 2007
Engineering Division	March 29, 2007
Commission on Water Resource Management	
Land Division – Oahu District	
State Historic Preservation Division	
Office of Hawaiian Affairs	
City and County of Honolulu Agencies	
Board of Water Supply	March 12, 2007
Department of Design and Construction	March 7, 2007
Department of Planning and Permitting	March 27, 2007
Landowners	
Kuilima Resort Co.	
Kahuku Land LLC	
Community Outreach	
Koolauloa Neighborhood Board #28	
Kahuku Public and School Library	
Hawaii State Library	

Appendix A
Agency Correspondence

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Ecoregion
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

JUL 11 2002

In Reply Refer To:
1-2-2002-TA-059

Mr. Lingjun Kong
State of Hawaii
Department of Transportation
Highways Division at Kapolei
601 Kamokila Boulevard
Kapolei, Hawaii 96707

Re: Species List Request for Kamehameha Highway, Kawela Stream Bridge Replacement Project No. 83B-01-01 (Reference Number HWY-DB 2.7052).

Dear Mr. Kong:

This responds to your June 27, 2002, letter in which you requested that the U.S. Fish and Wildlife Service (Service) provide a species list for a project located near milepost 11.39 on Kamehameha Highway (Route 83) in the district of Koolauloa, Oahu, Hawaii. Your letter was received in this office on June 28, 2002. The proposed Kawela Stream Replacement Project involves structural excavation, structural backfill, the stabilization of stream banks and the construction of a temporary detour road in the vicinity of the subject project area.

The Service has reviewed the information provided by you and pertinent information in our files, including maps prepared by The Nature Conservancy's Hawaii Natural Heritage Program. The following listed species may occur in the area:

Green turtle or honu (*Chelonia mydas*).

The Service appreciates your interest and concern for natural resources. If you have any questions, please contact Lorena Wada, Supervisory Fish and Wildlife Biologist (phone: 808/541-3441; fax: 808/541-3473).

Sincerely,

for Paul Henson
Field Supervisor
Ecological Services

United States Department of the Interior

FISH AND WILDLIFE SERVICE
Pacific Islands Fish and Wildlife Office
300 Ala Moana Boulevard, Room 3-122
Box 50088
Honolulu, Hawaii 96850

In Reply Refer To:
1-2-2003-I-143

JUN 27 2003

Seeyin Tommee
Department of Transportation
Highways Division, Bridge Design Section
601 Kamokila Boulevard, Room 611
Kapolei, Hawaii 96707

Subject: Kawela Stream Bridge Replacement, Koolauloa, Oahu, Hawaii

Dear Mr. Tommee:

This responds to your request of June 2, 2003, for the U. S. Fish and Wildlife Service's (Service) concurrence under section 7 of the Endangered Species Act (Act) with your determination that the proposed Kawela Stream bridge replacement (reference letter number HWY-DB 2.0426), will not affect any federally listed or proposed species. The proposed project is located at Koolauloa, Oahu, and involves demolishing the existing bridge and replacing it with a new bridge approximately forty-three feet wide and forty-two feet long, consisting of two vehicular travel lanes for two way traffic and paved shoulders.

You have requested the Service concur with your determination that the action, as proposed, will have no effect on the green turtle (*Chelonia mydas*) or Hawaiian monk seal (*Monachus schauinslandi*). The Act's implementing regulations (50 CFR Part 402) and Service policy (Consultation Handbook, 1998. 3-12) do not specifically provide for Service concurrence with an action agencies' determination that its proposed action will have no effect on federally listed or proposed species, or proposed or designated critical habitat. However, in response to your request and based on the information you have provided to us in your letter and in our files, the Service agrees with your determination that the action, as proposed and analyzed, will have no effect on green turtles. The lead agency to determine the potential effect of this project on monk seals is the National Marine Fisheries Service (NMFS). We suggest you contact Margaret Akamine in the Protected Species Program of the NMFS' Pacific Island Regional Office in Honolulu (telephone: 808-973-2937)

We appreciate your efforts to conserve endangered species. If you have any questions about this letter, please contact Elizabeth Sharpe Fish and Wildlife Biologist at 808-541-3441.

Sincerely,

for Paul Henson, Ph.D.
Field Supervisor

cc: Margaret Akamine, National Marine Fisheries Service

UNITED STATES DEPARTMENT OF COMMERCE
National Oceanic and Atmospheric Administration
NATIONAL MARINE FISHERIES SERVICE
Pacific Islands Regional Office
1601 Kapiolani Boulevard, Suite 1110
Honolulu, Hawaii 96814-0047

August 18, 2003

Seeyin Tommee
Department of Transportation
Highways Division, Bridge Design Section
601 Kamokila Boulevard, Room 611
Kapolei, Hawaii 96707

RE: Kawela Stream Bridge Replacement, Koolauloa, Oahu, Hawaii (HWY-DB 2.0861
Consultation No. I-PI-03-276:MMD

Dear Mr. Tommee:

This responds to your request received July 3, 2003, for the National Oceanic and Atmospheric Administration, National Marine Fisheries Service (NOAA Fisheries) for review and comments on the proposed Kawela Stream bridge replacement. The project involves the demolition of the existing bridge and replacement with a new bridge approximately 43 ft wide and 42 ft in length. We provide the following comments and information under our statutory authorities under the Endangered Species Act of 1973, as amended, 16 U.S.C. 1531 *et seq.* (ESA), and the Marine Mammal Protection Act of 1972, as amended 16 U.S.C. 1361 *et seq.* (MMPA).

Although there is a potential for the endangered Hawaiian monk seal and/or threatened green turtle to be found near the proposed project area. Noise from project activities and the increase in stream turbidity could potentially impact protected species in the area. NOAA Fisheries recommends incorporating the following Best Management Practices (BMPs) when project activities occur in near coastal streams or streams that are tidally influenced:

1. If any listed or otherwise protected species enters the project area, all project activities should cease until the animal(s) voluntarily leave the area.

2. All project personnel should be apprised of the status of the listed or otherwise protected species and the protections afforded to the species under federal laws. A brochure explaining the laws and guidelines for listed species in Hawaii may be obtained from http://www.nmfs.noaa.gov/prot_res/MMWatch/hawaii.htm.

3. Construction BMPs are advised to avoid release of pollutants into the water.

If these BMPs are incorporated into the project, the NOAA Fisheries concurs with your determination that no impacts to these Federally protected species under the jurisdiction of NMFS will occur as a result of the proposed action.

Should you have further questions regarding our comments for the proposed project and/or the section 7 process, please contact Margaret Akamine or David Nichols at (808) 973-2937 or fax (808) 973-2941

Sincerely,

Samuel Pooley
Acting Regional Administrator

RECEIVED

Hwy 430

LINDA LINGLE
GOVERNOR OF HAWAII

2004 MAR 31 A10 :02

DESIGN BRANCH
HIGHWAYS DIVISION
DEPT. OF TRANSPORTATION

DEPT OF TRANSPORTATION

2004 MAR 29 A 10 :58

HIGHWAYS DIVISION

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

DAN DAVIDSON
DEPUTY DIRECTOR - LAND

ERNEST Y.W. LAU
DEPUTY DIRECTOR - WATER
COMMISSION ON WATER RESOURCE MANAGEMENT

AQUATIC RESOURCES
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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
DIVISION OF AQUATIC RESOURCES
1151 PUNCHBOWL STREET
HONOLULU, HAWAII 96813

March 24, 2004

TO: Glenn M. Yasui, Administrator
Highways Division

ATTN: Seeyin Tommee, Design Branch

FROM: William S. Devick, Administrator

SUBJECT: (HWY-DB-2.3396) KAWELA STREAM BRIDGE REPLACEMENT – REQUEST FOR DETERMINATION LETTER REGARDING THREATENED AND ENDANGERED SPECIES – FEDERAL AID PROJECT NO. 83B-01-01

The Hawaii State Department of Land and Natural Resources, Division of Aquatic Resources has reviewed the proposed project to demolish the existing Kawela Stream Bridge located on the northern coast of the island of Oahu in the district of Koolauloa, and replacing it with a new bridge consisting of two vehicular travel lanes and paved shoulders. The proposed project will also involve the construction of a single-spanned, temporary bypass bridge with a detour road mauka of the existing bridge, and a new replacement bridge approach roadway.

The Division of Aquatic Resources concurs with the determination of the U.S. Fish and Wildlife Service and the National Marine Fisheries Service that the proposed project activities are not expected to impact protected species or their habitat. We would suggest that should a Hawaiian monk seal be observed in or near the project area that the sighting be reported to the National Marine Fisheries Service marine mammal hotline at 1-888-256-9840.

Should you have any further questions regarding these comments or Hawaii's protected marine species please contact David Nichols at (808)587-0437.

LINDA LINGLE
GOVERNOR

RODNEY K. HARAGA
DIRECTOR

Deputy Directors
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-DB 2.0785

April 25, 2006

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

FROM: GLENN M. YASUI
ADMINISTRATOR, HIGHWAYS DIVISION

SUBJECT: SECTION 106 NATIONAL HISTORIC PRESERVATION ACT CONSULTATION FOR THE STATE OF HAWAII, DEPARTMENT OF TRANSPORTATION, KAMEHAMEHA HIGHWAY, KAWELA STREAM BRIDGE REPLACEMENT, KOOLAULOA DISTRICT, OAHU, HAWAII
(FEDERAL-AID PROJECT NO. 83B-01-01)

The State of Hawaii, Department of Transportation (DOT) is in the planning stages of a bridge replacement project located near milepost 11.39 on Kamehameha Highway in the district of Koolauloa, Oahu, Hawaii. The proposed project is partially funded by the Federal Highways Administration (FHWA), and is therefore subject to the requirements of Section 106 of the National Historic Preservation Act (NHPA).

The proposed Kawela Stream Bridge Replacement Project involves demolishing the existing Kawela Stream Bridge and replacing it with a new bridge approximately 40 feet wide and 44 feet long, providing for two vehicular travel lanes and paved shoulders. Activities to be undertaken include structural excavation, backfill, stream bank stabilization, and construction of a temporary single-spanned bypass bridge with a detour road mauka of the existing bridge.

The general project location is presented in Figure 1. The Area of Potential Effect is shown in Figure 2. Details of the bridge replacement are presented in attached design drawing sheets. Table 1 below presents the adjacent parcel TMK Numbers.

Table 1: Addresses of Adjoining Property Owners

Parcel TMK No.	Owner	Mailing Address	Parcel Address
5-7-006:023	Kuilima Resort Company	1301 Ave of Americas, 34th Floor New York, NY 10019	Address not available
5-7-001:021	Kahuku Land LLC	57-091 Kamehameha Hwy Kahuku, HI 96731	57-146 Kamehameha Highway

Note: All information was obtained from the City and County of Honolulu, Department of Planning and Permitting (DPP) website http://gis.hicentral.com/website/parcelzoning/viewer.htm

Approximately four acres of total land area will be disturbed during construction activities, including areas used for the construction staging, areas used for the storage of materials, and the areas disturbed by construction equipment (i.e., bulldozers, cranes, etc.).

Access to the project area will be from Kamehameha Highway. Care will be taken to ensure protection of adjacent properties and existing structures from damage due to construction. Careful planning will also be utilized to ensure the areas of disruption are kept to a minimum. The Construction Contractor selected by DOT will be responsible for not only determining the actual access routes to the project location, but will also be responsible for establishing staging areas for all equipment, materials, and supplies utilized in support of the project. They will also establish and utilize Best Management Practices for all of their work.

Our knowledge of the area based on background data suggested to us that we should undertake some initial actions to identify historic properties and effects on such properties and those actions have concluded that:

- Based on an examination of the State Historic Preservation Division Oahu Island Historic Register, the Kawela Bay Archaeological Area occurs within various parcels within TMK 5-7-06;
- The *Historic Bridge Inventory, Island of Oahu* (Thompson 1983) documents that the Kawela Stream Bridge is a one span reinforced concrete deck girder structure, constructed in 1931. The design integrity was intact as of 1983, however, the aesthetics were rated poor;
- Chapter 6E-8 Historic Preservation Review conducted in October 2001 concluded that the soils within the project area "are unlikely to contain significant historic sites such as buried cultural layers or human burials. In addition, the lands underlying Kamehameha Highway, the existing Kawela Bridge, and the proposed bypass route have all been extensively altered through prior road construction activities. Consequently, we believe that the proposed bridge replacement will have 'no effect' on significant historic sites". (Review letter dated October 8, 2001 is attached.)
- Contact with the Koolauloa Hawaiian Civic Club (KHCC) regarding Native Hawaiian organization's cultural interests in the area indicated that "KHCC is not aware of the existence of any historic or cultural properties that may be affected by this project" (correspondence from KHCC dated October 17, 2002 is attached).

This undertaking is subject to review under Section 106 of the NHPA. We are now initiating review for this project to determine the possible effects of the undertaking, if any, on historic properties.

Should you have any questions regarding the proposed project or information provided, please contact Mr. Dean Takiguchi of our Bridge Design Section, Highways Division at 692-7614 or dean.takiguchi@hawaii.gov or Wayne Haight at Earth Tech, Inc. 523-8874 or wayne.haight@earthtech.com.

Enclosures: Figure 1 – General Site Map
Figure 2 – Area of Potential Effect
Sheet 1 – Layout Plan
Sheet 8 – Demolition Phase Plan
Sheet 9 – Site Plan
Sheet 15 – Detour Road Profile A
Sheet 16 – Detour Road Profile B
Sheet 45 – Downstream Elevation
Sheet 52 – Boring Location Plan
Chapter 6E-8 Historic Preservation Review Comments (October 8, 2001)
Correspondence from Koolauloa Hawaiian Civic Club (October 17, 2002)

cc: HWY-DB (DT)
Ms. Ululani Sherlock, OHA – East Hawaii
Ms. Cathleen Matton, Koolauloa Hawaiian
Project File

RECEIVED
'06 JUL 14 P5:29
DESIGN BRANCH
HIGHWAYS DIVISION
DEPT. OF TRANSPORTATION

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2006 JUL 13 A 9:53
HIGHWAYS DIVISION

LINDA LINGLE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
DEPUTY DIRECTOR - LAND

DEAN NAKANO
ACTING DEPUTY DIRECTOR - WATER

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
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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
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 10, 2006

Glenn M Yasui, Administrator
Department of Transportation-Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

LOG NO: 2006.2154
DOC NO: 0607BF06
Architecture

Dear Mr. Yasui:

SUBJECT: **Section 106 (NHPA) Review**
RE: Kawela Stream Bridge Replacement HWY – DB 2.0785
Project Location: Kamehameha Highway, Oahu
Opana Ahupuaa, Koolauloa District, Oahu
TMK: (1) 5-7

This letter is in response to your letter dated April 25, 2006 which we received on April 24, 2006.

The SHPD has reviewed your letter initiating the Section 106 process for the proposed replacement of the Kawela Stream Bridge. The proposed project entails the demolition of the extant Kawela Stream Bridge. This will include structural excavation, backfill, stream bank stabilization and construction of a temporary single-spanned bypass bridge. The proposed new bridge will be 40-feet in length by 44-feet in width.

The 1983 *Historic Bridge Inventory, Island of Oahu* identified this particular bridge as having intact integrity and poor aesthetics. However, since that time the bridge has continued to deteriorate loosing more of its integrity. This bridge is not recommended eligible for listing on the National Register of Historic Places.

The SHPD concludes that the proposed project will have no adverse effect with the condition that the bridge be photographed before demolition. These photographs may be in digital or print format.

Thank you for the opportunity to comment. Should you have any questions regarding architectural concerns please call Bryan Flower at our Oahu office at (808) 692-8028.

Sincerely,

Peter T. Young, Chairperson
State Historic Preservation Officer

BF:jen

Pacific
Consulting
Services, Inc.

720 Iwilei Road, Suite 424 • Honolulu,HI 96817
Phone (808) 546.5557 • Fax (808) 546.5557

January 31, 2007

Mr. Adam Johnson
State Historic Preservation Division
Kakuhihewa Building
601 Kamokila Blvd, Suite 555
Kapolei, HI, 96707

Subject: Submittal of Photo-documentation for Kawela Stream Bridge, `Ōpana Ahupua`a, Ko`olauloa District, Island of O`ahu.

Dear Mr. Johnson;

On behalf of Earth Tech, Inc. (Earth Tech), Pacific Consulting Services Inc. (PCSI) is submitting electronic copies of photographs on CD of the existing Kawela Stream Bridge in fulfillment of photo documentation requirements established by Dr. Chris Monahan, former Oahu Island Archaeologist with the State Historic Preservation Division (SHPD).

This documentation was conducted in support of an Environmental Assessment (EA) conducted by Earth Tech. To fulfill the cultural component of the EA, PCSI was contracted by Earth Tech to a Cultural Impact Assessment and an archaeological survey. In March 2006, I contacted Dr. Monahan who informed us that while an inventory survey would not be necessary, an archaeological reconnaissance survey of the area of potential affect for the bridge project, as well as photo documentation of the bridge, would be necessary. I am enclosing a letter from Mr. Peter Young for your files that details these requirements.

To address these requests, PCSI conducted an archaeological reconnaissance survey of the area of potential effect (APE) for the Kawela Stream Bridge replacement project on August 9, 2006 and documented the bridge with photography. No surface or subsurface traditional Hawaiian or significant historic-era archaeological sites or features were found during the reconnaissance survey.

The photographs enclosed on the CD include documentation of the bridge as well as the project area, which includes shoulders of Kamehameha Highway in the vicinity of the bridge. If you have any questions or concerns regarding the photographs, please contact me in Honolulu at 546-5557, extension 202.

Sincerely,

Stephan D. Clark
Manager, Cultural Resources
Pacific Consulting Services, Inc.

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

GILBERT S. COLOMA-AGARAN, CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

DEPUTIES
JANET E. KAWELO
LINNEL NISHIOKA

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION AND RESOURCES ENFORCEMENT
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LAND
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DEPT OF TRANSPORTATION HIGHWAYS DIVISION

October 8, 2001

MEMORANDUM

LOG NO: 28325
DOC NO: 0110SC09

TO: Glenn M. Yasui, Administrator
Highways Division
Department of Transportation

FROM: DON HIBBARD, Administrator
Historic Preservation Division
Department of Land and Natural Resources

RECEIVED
01 OCT 17 A8:33
DESIGN BRANCH
HIGHWAYS DIVISION
DEPT. OF TRANSPORTATION

SUBJECT: Chapter 6E-8 Historic Preservation Comments on Proposed Bridge Improvements to Kamehameha Highway at Kawela Stream Bridge Opana, Ko`olauloa, O`ahu, TMK: 5-7

The Highways Division plans to replace the existing Kawela Bridge along Kamehameha Highway on O`ahu's North Shore. Bridge replacement will include establishing a temporary bypass road on the *mauka* side of Kamehameha Highway, next to the existing bridge. The project will be partly financed through funds from the Federal Highways Administration (FHWA), so, as you indicate, compliance with Section 106 of the National Historic Preservation Act will be necessary. Our review is based on historic maps, aerial photographs, reports, and records maintained at the State Historic Preservation Division; no field inspection was made of the proposed project area. Our Architecture and Archaeology Branches have reviewed the materials you sent, and we provide the following comments.

Architecture Comments

Please find attached information from the 1983 Historic Bridge Inventory for the Island of Oahu. We have no further comments at this time.

Archaeology Comments

The underlying soils of the project area are Waialua Silty Clays which are unlikely to contain significant historic sites such as buried cultural layers or human burials. In addition, the lands underlying Kamehameha Highway, the existing Kawela Bridge, and the proposed bypass route

have all been extensively altered through prior road construction activities. Consequently, we believe that the proposed bridge replacement will have "no effect" on significant historic sites.

Should you have any questions about architectural matters, including bridges, please feel free to contact Carol Ogata at 692-8032. Should you have any questions about archaeological matters, please feel free to contact Sara Collins at 692-8026.

SC:amk

HISTORIC BRIDGE INVENTORY

ISLAND OF OAHU

by

Bethany Thompson

Historical Consultant

PREPARED FOR THE
STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION
IN COOPERATION WITH THE
U.S. DEPARTMENT OF TRANSPORTATION
FEDERAL HIGHWAY ADMINISTRATION

HPR 0010(4)
HPR 0010(5)

JUNE 1983

The Kawela bridge located on Kamehameha Highway .134 of a mile west of the intersection with Hanopu Street was built in 1931. The contractor was E. K. Sugihara of Kalihi Construction Company, who built a total of four bridges and the Waialee belt-road for the sum of $189,940.80.* [5]

The bridge is a one span reinforced concrete deck girder structure, 24' in length and 27.4' wide. It has a design load capacity of H-15. The abutments and parapets are made of reinforced concrete. The design integrity is intact.

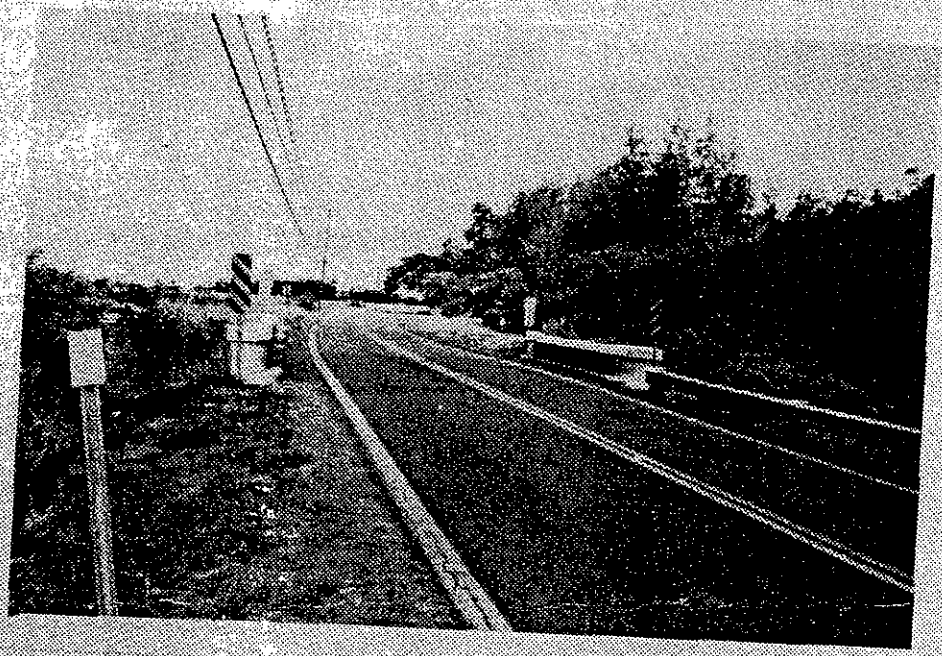
The structure is an important transportation link between North Shore and Windward communities.

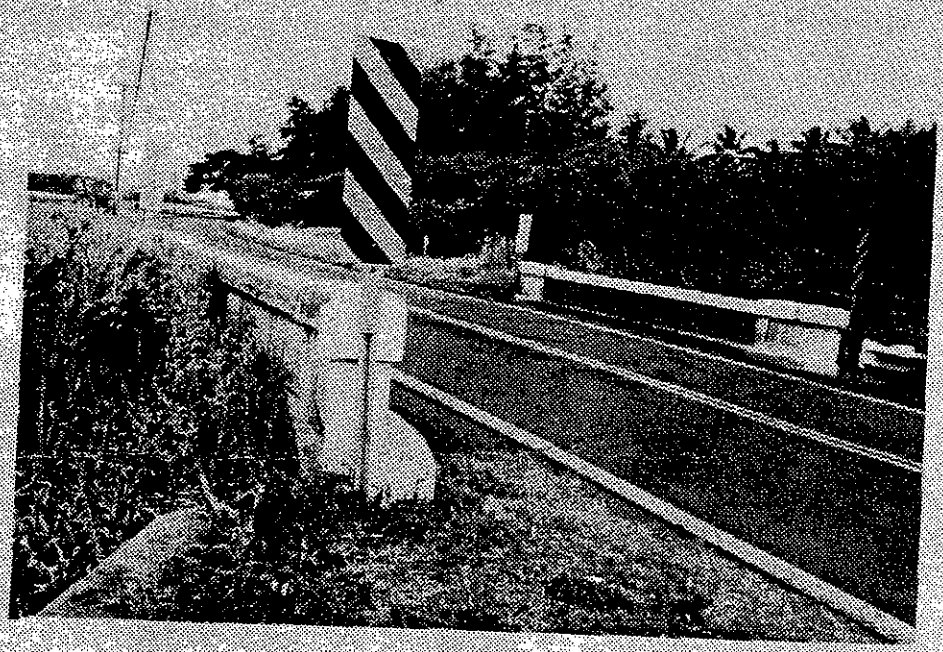
There are no vantage points for public access and the view is poor.

The aesthetics are rated poor.

---

*Kuilima, Waialee, Kawela, Nanahu bridges are part of this Waialee belt-road.





Kawela Bridge

Ko'olauloa Hawaiian Civic Club

P. O. Box 532, Hauula, HI 96717

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HIGHWAYS DIVISION
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October 17, 2002

Glenn M. Yasui, Administrator
Highways Division
Department of Land and Natural Resources
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

Dear Mr. Yasui,

Thank you for including Ko`olauloa Hawaiian Civic Club in the planning process for the construction of Kawela Stream Bridge.

KHCC is not aware of the existence of any historic or cultural properties that may be affected by this project. However, the prospect of inadvertent finds of Native Hawaiian burials is always a possibility.

Sincerely,

Cathleen Mattoon

Cathleen Mattoon
President

HWY 1113

PHONE (808) 594-1888

FAX (808) 594-1865

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HIGHWAYS DIVISION

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

HRD06/2425

June 5, 2006

Glen Yasui
Department of Transportation, Highways Division
869 Punchbowl Street
Honolulu, HI 96813-5097

RE: Section 106 Consultation for the Proposed Replacement of Kawela Stream Bridge, Ko'olauloa, O'ahu.

Dear Mr. Yasui,

The Office of Hawaiian Affairs (OHA) is in receipt of your April 25, 2006 request for comment on the above-listed proposed project. OHA offers the following comments:

Our staff recommends that an Archaeological Inventory Survey be completed prior to moving forward with the proposed bridge replacement. While the applicant states that the area has been heavily modified during previous periods of construction, the proposed project area lies within the Ko'olauloa coastal corridor, an area in which a relatively large amount of Native Hawaiian skeletal remains have been encountered.

Our staff also recommends that the applicant contact Betty Jenkins as part of the Section 106 consultation effort. She will likely supply information specific to the project and steer the applicant towards other individuals who may have additional pertinent information regarding the proposed project area and the larger cultural landscape of the Ko'olauloa District. Thank you for your correspondence.

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

PETER T. YOUNG
CHAIRPERSON

MEREDITH J. CHING
JAMES A. FRAZIER
NEAL S. FUJIWARA
CHIYOME L. FUKINO, M.D.
LAWRENCE H. MIIKE, M.D., J.D.
STEPHANIE A. WHALEN

DEAN A. NAKANO
ACTING DEPUTY DIRECTOR

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

OCT 16 2006

Ms. Tanya Copeland, Project Manager
Earth Tech, Inc.
841 Bishop Street, Suite 500
Honolulu, HI 96813-3920

Dear Ms. Copeland:

Request for Determination, Stream Channel Alteration Permit (SCAP)
Kawela Stream Bridge Replacement, Island of Oahu
State of Hawaii, Department of Transportation

Thank you for your letter of July 31, 2006, requesting whether a SCAP will be required for this bypass bridge and roadway construction project. We are sorry for the delay in responding to your request.

The Commission on Water Resource Management (Commission), Stream Protection and Management Branch, has the responsibility to protect stream channels from alteration whenever practicable to provide for fishery, wildlife, recreational, aesthetic, scenic, and other beneficial instream uses in the State of Hawaii under the authorization of the State Water Code (Code), Chapter 174C, and Hawaii Revised Statutes, Chapter 13-169 (Protection of Instream Uses of Water).

Pursuant to the Code, §174C-71(3)(A), the Commission "shall require persons to obtain a permit from the Commission prior to undertaking a stream channel alteration." The term "stream channel" is defined in the Code, §174C-3, as a "watercourse with a definite bed and banks which periodically or continuously contains flowing water."

Based on the site visit that was conducted by staff on September 8, 2006 and on the materials you submitted and information contained therein, the Commission does not require a SCAP application to be submitted for the proposed project because the proposed scope of work appears to remain outside of the bed and banks of Kawela Stream.

Please be advised that the project may require other agency approvals regarding wetlands, water quality, grading, stockpiling, and floodways. This letter should not be used for other regulatory jurisdictions or used to imply compliance with other federal, state, or county rules.

Please contact Josh Hekekia at 587-0265 if you have any questions.

Sincerely,

Edwin T. Sakoda

for: DEAN A. NAKANO
Acting Deputy Director

cc: Mr. Dean Takiguchi, DOT Highways Division, Design Branch
✓Ms. Michelle Mason, Earth Tech

LINDA LINGLE
GOVERNOR
THEODORE E. LIU
DIRECTOR
MARK K. ANDERSON
DEPUTY DIRECTOR
LAURA H. THIELEN
DIRECTOR
OFFICE OF PLANNING

DEPARTMENT OF BUSINESS, ECONOMIC DEVELOPMENT & TOURISM

OFFICE OF PLANNING

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

Telephone: (808) 587-2846
Fax: (808) 587-2824

Ref. No. P-11570

December 1, 2006

To: Rodney K. Haraga, Director
Department Transportation

Attention: Glenn Yasui
Highways Division

From: Laura H. Thielen, Director

Subject: Hawaii Coastal Zone Management (CZM) Program Consistency Review for Federal Funding for the Kawela Stream Bridge Replacement, Kamehameha Highway, Oahu; Federal Aid Project No. 83B-01-01

The proposal to use funds from the Federal Highway Administration to construct a replacement bridge for the Kawela Stream Bridge is consistent with the Hawaii CZM Program. We concur with the Department of Transportation's CZM federal consistency certification for the project. If any federal permits are required for the project, such as the U.S. Army Corps of Engineers permit for the crossing of Kawela Stream, then additional CZM consistency review may be needed and CZM concerns specific to the permit may be raised.

CZM consistency concurrence is not an endorsement of the project nor does it convey approval with any other regulations administered by any State or County agency. Thank you for your cooperation in complying with the Hawaii CZM Program. If you have any questions, please call John Nakagawa of our CZM Program at 587-2878.

c: Ms. Tanya Copeland, Earth Tech, Inc.
U.S. Army Corps of Engineers, Regulatory Branch
Department of Planning and Permitting, City and County of Honolulu

HWY-DB

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

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DEPARTMENT OF TRANSPORTATION
HIGHWAY DO

REPLY TO ATTENTION OF

April 17, 2007

Regulatory Branch

File Number **POH-2007-311**

Mr. Julius B. Fronda, Acting Head
Design Branch, Highways Division
Hawaii Department of Transportation at Kapolei
601 Kamokila Boulevard
Honolulu, Hawaii 96707

Attn: Mr. Dean Takiguchi and Mr. Lingjun Kong

Dear Mr. Fronda:

This responds to your request for a jurisdictional determination regarding the replacement of the existing Kawela Stream Bridge on Kamehameha Highway Route 83, Kawela, Koolauloa District, Oahu Island. Based on the additional design and specifications information provided and the initial documentation provided by Ms. Lolly Silva of my staff on March 29 and June 29, 2005, I have determined that the location of this highway work is located upland, completely spanning Kawela Stream, and outside the reach of tidal waters and the Pacific Ocean. The Corps asserts that Kawela Stream is a jurisdictional water of the U.S.

Activities associated with the demolition, removal and replacement of the existing bridge as well as the construction and removal of the interim detour road and crossing does not propose a discharge of fill material into Kawela Stream. Therefore, a Department of Army (DA) permit authorization under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act will not be required.

This preliminary jurisdictional determination does not excuse your Department from complying with other federal, state, or county permits, certifications or requirements which may be required for the proposed activities at the above location. Please contact Mr. Farley Watanabe our Regulatory Branch at 438-7701, or Farley.K.Watanabe@poh01.usace.army.mil if you have additional questions. Please refer to file number above if you need additional clarification or information.

Sincerely,

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

Copeland, Tanya

From: Siu-Li, Mario [msiuli@honolulu.gov]
Sent: Tuesday, July 14, 2009 3:38 PM
To: Copeland, Tanya
Subject: RE: Flood Hazard Variance for Kawela Stream Bridge Replacement, District of Koolauloa, Oahu

Hi Tanya,

The highway bridge replacement is covered under LUO Section 21-9.10-5 (a) (4) as a permitted use in the floodway district provided it does not cause any increase in the regulatory flood elevation. This is also acknowledged in the 2006 DOT letter to Director Eng. Therefore, we confirm that a flood hazard variance is not required for this project.
The DOT shall maintain certification and supporting data and analyses by a licensed professional engineer demonstrating that the project will not cause any increase in the regulatory flood elevation.

Mario Siu-Li
Subdivision Branch
Department of Planning and Permitting
City and County of Honolulu
Phone: 808-768-8098
Fax: 808-523-4950

From: Copeland, Tanya [mailto:Tanya.Copeland@aecom.com]
Sent: Tuesday, July 14, 2009 2:57 PM
To: Siu-Li, Mario
Cc: Dean.Takiguchi@hawaii.gov
Subject: Flood Hazard Variance for Kawela Stream Bridge Replacement, District of Koolauloa, Oahu
Importance: High

Mario,

Per our conversation, I am attaching the request for determination submitted by the Department of Transportation for the Kawela Stream Bridge Replacement project.

Could you please provide a response as to whether the proposed bridge replacement would require a flood hazard variance?

Please contact me at 356-5323 if you have any questions regarding this request.

Regards,

Tanya Copeland
Environmental Planner
D 808.356.5323
tanya.copeland@aecom.com

AECOM
841 Bishop Street, Suite 500
Honolulu, HI 96813
T 808.523.8874 F 808.523.8950
www.aecom.com

Appendix B
Photo Log

Photo 1. Kawela Stream Bridge looking toward Haleiwa.

Photo 2. Makai wingwall and Kawela Stream channel looking toward Haleiwa.

Note: Photographs taken in July 2006.

Photo 3. Mauka wingwall looking toward Kahuku.

Photo 4. Makai parcel - tax map key (1) 5-7-001:021.

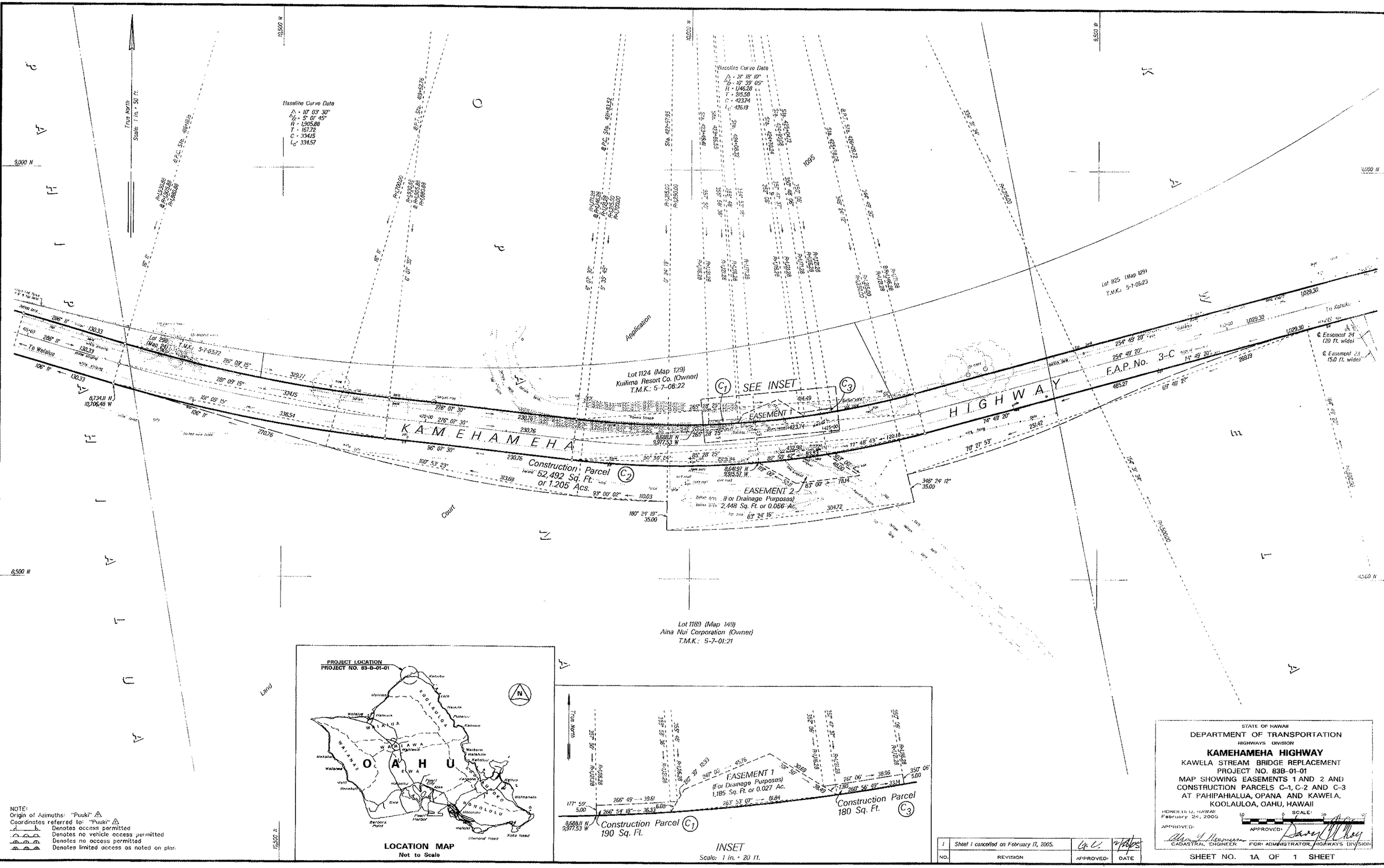
Note: Photographs taken in July 2006.

Photo 5. Approach Haleiwa-bound.

Photo 6. Approach Kahuku-bound.

Note: Photographs taken in July 2006.

Appendix C
Draft Right-of-Way Map



LOCATION MAP
Not to Scale

INSET
Scale: 1 in. = 20 ft.

NOTE:
Origin of Azimuths: "Puuki" △
Coordinates referred to: "Puuki" △
Denotes access permitted
Denotes no vehicle access permitted
Denotes no access permitted
Denotes limited access as noted on plan

NO.	REVISION	APPROVED	DATE
1	Sheet 1 cancelled on February 17, 2005.	G.U.	2/17/05

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
HIGHWAYS DIVISION

KAMEHAMEHA HIGHWAY
KAWELA STREAM BRIDGE REPLACEMENT
PROJECT NO. 83B-01-01
MAP SHOWING EASEMENTS 1 AND 2 AND CONSTRUCTION PARCELS C-1, C-2 AND C-3 AT PAHIPAHIALUA, OPANA AND KAWELA, KOOLAULOA, OAHU, HAWAII

HONOLULU, HAWAII
February 26, 2005
SCALE: 50 0 50 100

APPROVED:
CADASTRAL ENGINEER

APPROVED:
FOR ADMINISTRATOR, HIGHWAYS DIVISION

SHEET NO. 1A OF 1 SHEET

TAX MAP KEY: 5-7-01, 5-7-03 & 5-7-06

72" x 36" - 55.50 Ct

PH 282

Appendix D
Biological Resource Survey Report

Biological resources survey at the mouth of Kawela Stream for the Kamehameha Highway Bridge replacement, Kawela, O'ahu[1]

September 29, 2006 *AECOS* 1127

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Introduction

Kawela Stream originates near the summit of Mount Kawela at an elevation of approximately 800 ft on the western slope of Mount Kawela. The Hawaii Stream Assessment (1990) classifies Kawela Stream as a continuously flowing, perennial stream and assigns it State ID No. 3-1-04. The lower reach is possibly perennial; however, flow in the upper reach through Kawela Gulch is likely intermittent, making this an interrupted stream (Timbol & Maciolek, 1978). Kawela Stream terminates behind the shore of Kawela Bay in a *muliwai*: a pond or estuarine feature behind a sand shoreline (Figure 1). Surface waters only reach the bay during heavy rain events when the impoundment is breached.

The Hawaii Department of Transportation is proposing to replace the Kawela Stream Bridge along Kamehameha Highway at Kawela, O'ahu. A temporary by-pass road and bridge will be built for use while the existing bridge is replaced with a longer and wider structure. The temporary by-pass road and bridge will be demolished once the new structure is completed.

The purpose of this survey is to look for sensitive native species and federally-listed species and to document flora and fauna found within the proposed project area. Checklists of all species observed and their relative abundance are included in this report. As per the Revised Statement of Work (Earth Tech, 2006), this report does not include background research and does not address biological impacts or mitigation measures. Water quality samples were not collected.

[1] This report was prepared for use by Earth Tech, Inc. in an Environmental Assessment for the Kamehameha Highway Bridge replacement at Kawela. The EA will become part of the public record.

Figure 1. Kawela Stream *muliwai* blocked by sand berm of Kawela Beach.

Methods

On August 11, 2006, three *AECOS* biologists, Eric Guinther (flora), Susan Burr (aquatic biota), and Chad Linebaugh (aquatic biota) conducted a survey in and around lower Kawela Stream from the sand berm at the mouth to approximately 60 feet *mauka* of Kamehameha Highway. Animal species identifications were made through visual observations and capturing specimens with a dip-net (Fig. 2). The stream and botanical survey areas included the route proposed for a temporary detour and stream crossing immediately upstream of the existing highway bridge.

On August 30, 2006, Reginald David of Rana Productions, Ltd. conducted avian and mammalian surveys in and around Kawela Stream from just *mauka* of Kamehameha Highway to the beach at Kawela Bay. Field observations were made with the aid of Leitz 10 x 42 binoculars and by listening for vocalizations. Three avian count stations were sited within the general project area. Eight-minute counts were made at each of the count stations and each station was counted just once. Counts and observations were made between 07:00 a.m. and 10:00 a.m., the peak of daily bird activity. Time not spent counting was used to search the remainder of the project area for species and habitats that were not detected during count sessions. The survey of mammals was limited to visual and auditory detection, coupled with

visual observation of scat, tracks, and other animal sign. A running tally was kept of all vertebrate species observed and heard within the project area.

Figure 2. Dip-netting on Kawela Stream. a) along Kamehameha Hwy., channel choked with para grass; and b) in the forest downstream from the highway.

Results

Terrestrial Flora

The flora survey found 55 species of ferns and flowering plants. Of these 55 species, none is endemic (native to Hawai'i and found naturally nowhere else), one is indigenous (native to Hawai'i, but not unique to Hawai'i), three are ornamental (exotic, ornamental; plant not naturalized at this location and not well-established outside cultivation), and four are Polynesian introduced species. The remaining 50 species are introduced species that have naturalized on O'ahu. A flora listing follows in Table 1. Plant names follow *Hawai`i's ferns and fern allies* (Palmer, 2003) for ferns, *Manual of the Flowering Plants of Hawai'i* (Wagner et al. 1990, 1999) for native and naturalized flowering plants, and *A Tropical Garden Flora* (Staples and Herbst, 2005) for ornamental plants.

The site riparian vegetation is comprised of an open area adjacent to the highway and the highway bridge where the stream channel is overgrown with California grass (*Urochloa mutica*; Fig. 3) and a dense forest of mostly *hau* (*Hibiscus tiliaceus*) along the stream behind Kawela beach. In the area to be cleared for construction of a temporary vehicular crossing immediately upstream of the existing bridge, the vegetation is as described for the open riparian area (but with elephant grass (*Pennisetum purpureum*) dominating much of the stream channel), plus all the various ruderal plants along the existing highway r-o-w and a farm entrance roadway. Some shade is provided in this area by two rows of *koa haole* (*Leucaena leucocephala*) as short-stature trees.

Table 1. Checklist of plants (flora) found at and in the vicinity of the Kamehameha Highway Kawela Stream Bridge on O'ahu.

Species	Common name	Status	Abundance	
	FERNS AND FERN ALLIES			
POLYPODIACEAE				
Phymatosorius grossus (Langsd. & Fisch.) Brownlie	*lauae*	Nat.	U	
	FLOWERING PLANTS			
	DICOTYLEDONES			
ACANTHACEAE				
Asystasia gangetica (L.) T. Anderson	Chinese violet	Nat.	C	
Dicliptera chinensis (L.) Juss.	---	Nat.	R	
Ruellia prostrata Poir.	---	Nat.	U2	(1)
AMARANTHACEAE				
Amaranthus spinosus L.	spiny amaranth	Nat.	R	(1)
Amaranthus viridis L.	slender amaranth	Nat.	R	
ANACARDIACEAE				
Schinus terebinthefolius Raddi	Christmas berry	Nat.	U	
ARALIACEAE				
Polyscias guilfoylei (W. Bull.) L.H. Bailey	panax	Orn.	R1	(3)
Schefflera actinophylla (Endl.) Harms	octopus tree	Nat.	C	
ASTERACEAE (COMPOSITAE)				
Bidens alba (L.) DC	beggar's tick	Nat.	U	(1)
Calyptocarpus vialis Less.	---	Nat.	U3	(1)
Conyza bonariensis (L.) Cronq.	hairy horseweed	Nat.	U	
Eclipta prostrata (L.) L.	false daisy	Nat.	R	
Emilia fosbergii Nicolson	Flora's paintbrush	Nat.	R	
Pluchea carolinensis (Jacq.) G. Don	---	Nat.	U	
BASELLACEAE				
Anredera cordifolia (Ten.) Steenis.	Madeira vine	Nat.	R	
BRASSICACEAE				
Lepidium virginicum L.	peppergrass	Nat.	U	(1)
CARICACEAE				
Carica papaya L.	papaya	Nat.	R	
CASUARINACEAE				
Casuarina equisetifolia L.	ironwood tree	Nat.	AA	
COMBRETACEAE				
Terminalia catappa L.	false kamani	Nat.	U	
CONVOLVULACEAE				
Ipomoea alba L.	moon flower	Nat.	O	
Ipomoea obscura (L.) Ker-Gawl.	---	Nat.	O	
CUCURBITACEAE				
Coccinia grandis (L.) Voigt	scarlet-fruited gourd	Nat.	R	

Table 1 (continued).

Species	Common name	Status	Abundance	
EUPHORBIACEAE				
Chamaesyce hypericifolia (L.) Millsp.	graceful spurge	Nat.	U	
Macaranga tanarius (L.) Müll. Arg.	---	Nat.	U	
Ricinus communis L.	castor bean	Nat.	U	
FABACEAE				
Canavalia cathartica Thouars	*maunaloa*	Nat.	O	
Desmanthus virgatus (L.) Willd.	virgate mimosa	Nat.	O	
Indigofera spicata Forssk.	creeping indigo	Nat.	U2	(1)
Leucaena leucocephala (Lam.) de Wit	*koa haole*	Nat.	A	
Macroptilium atropurpureum (DC) Urb.	---	Nat.	C	
Mimosa pudica L.	sensitive plant	Nat.	R	
MALVACEAE				
Hibiscus tiliaceus L.	*hau*	**Pol.**	A	(2)
Malvastrum coromandelianum (L.) Garcke	false mallow	Nat.	U2	
Thespesia populnea (L.) Sol. ex Correa	*milo*	**Ind.**	AA	
MORACEAE				
Ficus microcarpa L. fil.	Chinese banyan	Nat.	R	
NYCTAGINACEAE				
Boerhavia coccinea Mill.	false alena	Nat.	R	
ONAGRACEAE				
Ludwigia octovalvis (Jacq.) Raven	*kamole*	**Pol.**	O	(2)
OXALIDACEAE				
Oxalis corniculata L.	yellow wood sorrel	**Pol.**	U	
PASSIFLORACEAE				
Passiflora laurifolia L.	yellow grandilla	Nat.	R	(4)
Passiflora suberosa L.	*huehue haole*	Nat.	R	
PORTULACACEAE				
Portulaca oleracea L.	pigweed	Nat.	R	(1)
MONOCOTYLEDONES				
ARECACEAE				
Cocos nucifera L.	*niu*, coconut palm	**Pol.**	A	
Phoenix hybrid	date palm	Nat.	U	
Veitchia merrillii (Beccari) H.E. Moore	Manila palm	Orn.	R	(3)
COMMELINACEAE				
Commelina diffusa N.L. Burm.	*honohono*	Nat.	U	(2)
Tradescantia zebrina Bosse	wandering-jew	Orn.	R	(3)
LILIACEAE				
Crinum asiaticum L.	spider lily	Nat.	R	
POACEAE (GRAMINEAE)				
Cynodon dactylon (L.) Pers.	Bermuda grass	Nat.	U	
Echinochloa crus-galli (L.) P. Beauv.	barnyard grass	Nat.	R	(2)

Table 1 (continued).

Species	Common name	Status	Abundance	
POACEAE (continued)				
Eleusine indica (L.) Gartn.	beach wiregrass	Nat.	C	(1)
Panicum maximum Jacq.	Guinea grass	Nat.	C	
Pennisetum purpureum Schumach.	elephant grass	Nat.	U2	(2)
Stenotaphrum secundatum (Walt.) Ktze.	buffalo grass	Nat.	U1	
Urochloa mutica (Forssk.) Nguyen	California grass	Nat.	O3	(2)

Table 1 Legend:

Status = distributional status
- **end**. = endemic; native to Hawaii and found naturally nowhere else.
- **ind**. = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.
- nat. = naturalized, exotic, plant introduced to the Hawaiian Islands since the arrival of Cook Expedition in 1778, and well-established outside of cultivation.
- orn. = exotic, ornamental; plant not naturalized at this location (not well-established outside of cultivation).
- **pol**. = Polynesian introduction before 1778.

Abundance = occurrence ratings for plants
- R - Rare - only one or two plants seen.
- U - Uncommon - several to five plants observed.
- O - Occasional - found between five and ten times; not abundant anywhere.
- C - Common - considered an important part of the vegetation and observed numerous times.
- A - Abundant - found in large numbers; may be locally dominant.
- AA - Abundant - abundant and dominant; defining vegetation type.

Subnumbers (such as U2) indicate localized abundance:
1 – grouping of a few plants;
2 – a few to numerous individuals where plant occurs;
3 – very many individuals where plant occurs

Notes:
(1) – Associated with regularly disturbed roadway r-o-w; ruderal.
(2) – Closely associated with the Kawela Stream; riparian.
(3) – An ornamental plant remaining from previous habitation in the area.
(4) – Identification uncertain as plant had no flowers or fruit.

None of the plant species observed in the project area is listed as threatened or endangered, or otherwise would be considered rare or special by the State or Federal governments (DLNR, 1998; Federal Register, 2005; USFWS, 2005, 2006).

Terrestrial Fauna

A total of 126 individual birds of 13 different species, representing 11 separate families, were recorded during station counts (Table 2). All 13 species recorded are considered to be alien birds in the Hawaiian Islands. Avian diversity was relatively low, though in keeping with the habitat present on the site. Three species—Red-vented Bulbul (*Pyconotus cafer*), Japanese White-eye (*Zosterops japonicus*), and House Finch (*Carpodacus mexicanus frontalis*)—accounted for slightly more than 45% of the total number of birds recorded during station counts. The most common avian species recorded was Red-vented Bulbul, which accounted for 21% of the total

number of individual birds recorded. An average of 42 individual birds was recorded per station count.

Figure 3. Kawela Stream channel downstream of the highway bridge (left bank wing wall shown). Stream flows into forest in background.

Table 2. Avian Species Recorded in the vicinity of the Kamehameha Highway/Kawela Stream Bridge on O'ahu.

Common name	Scientific name	ST	RA
	GALLIFORMES		
	PHASIANIDAE - Pheasants & Partridges		
	Phasianinae - Pheasants & Allies		
Red Junglefowl	*Gallus gallus*	D	0.67
	CICONIIFORMES		
	ARDEIDAE - Herons, Bitterns & Allies		
Cattle Egret	*Bubulcus ibis*	A	2.33
	COLUMBIFORMES		
	COLUMBIDAE - Pigeons & Doves		
Spotted Dove	*Streptopelia chinensis*	A	3.00
Zebra Dove	*Geopelia striata*	A	4.67
	PASSERIFORMES		
	PYCNONOTIDAE - Bulbuls		
Red-vented Bulbul	*Pycnonotus cafer*	A	8.67

Table 2 (continued).

Common name	Scientific name	ST	RA
	TURDIDAE - Thrushes		
White-rumped Shama	*Copsychus malabaricus*	A	2.33
	ZOSTEROPIDAE - White-eyes		
Japanese White-eye	*Zosterops japonicus*	A	5.67
	STURNIDAE - Starlings		
Common Myna	*Acridotheres tristis*	A	2.00
	EMBERIZIDAE - Emberizids		
Red-crested Cardinal	*Paroaria coronata*	A	2.00
	CARDINALIDAE - Cardinals Saltators & Allies		
Northern Cardinal	*Cardinalis cardinalis*	A	2.00
	FRINGILLIDAE - Fringilline and Carduleline Finches & Allies		
	Carduelinae - Carduline Finches		
House Finch	*Carpodacus mexicanus*	A	4.67
	ESTRILDIDAE - Estrildid Finches		
	Estrildinae - Estrildine Finches		
Common Waxbill	*Estrilda astrild*	A	3.00
Java Sparrow	*Padda oryzivora*	A	1.00

Table 2 Legend:

ST	Status
D	Domestic – An alien species currently not known to be established on O‘ahu
A	Alien Species – Introduced to O‘ahu by humans, and has since become established
RA	Relative Abundance - Number of birds detected divided by the number of count stations (3)

Avian phylogenetic order and nomenclature follows *The American Ornithologists' Union Check-list of North American Birds 7th Edition* (American Ornithologists' Union, 1998), and the 42nd through the 47th supplements to *Check-list of North American Birds* (American Ornithologists' Union 2000; Banks et al., 2002, 2003, 2004, 2005, 2006).

No mammals were recorded during the time that the zoologist was on site; however, other field crew members working on near-shore reptiles did report seeing at least one small Indian mongoose (*Herpestes a. auropunctatus*) walking on the dune, as well as horse (*Equus c. caballus*) scat and sign along a coastal trail just behind the dunes. The resort located to the east of this site operates horseback rides along these trails.

No species of special interest, or that are currently protected, or proposed for protection under either the Federal or State of Hawai‘i endangered species statutes

were detected during the course of this survey (DLNR, 1998; Federal Register, 2005; USFWS, 2005, 2006).

Aquatic Biota

The aquatic resources survey found 14 different aquatic species of mollusks, crustaceans, insects, amphibians, and fishes. Four species are endemic (including the *Eleotris sandvicensis* shown in Fig. 4), one is indigenous, and nine species are naturalized. Several sightings of the green sea turtle (*Chelonia mydas)* were observed in Kawela Bay near the stream mouth around mid-day on August 11, 2006. The aquatic biota listing follows in Table 3.

Table 3. Checklist of aquatic biota observed in Kawela Stream, North Shore, O'ahu on August 11, 2006.

Species	Common name	Status	QC Code	Abundance	Location
	INVERTEBRATES				
MOLLUSCA, GASTROPODA	(mollusks)				
THIARIDAE					
Melanoides tuberculata	red-rimmed melania	Nat.	20	A	Bend
" "				AA	Para grass
" "				A	Bridge
ARTHROPODA, CRUSTACEA	(crustaceans)				
PALIEMONIDAE					
Macrobrachium grandimanus	*'opae 'oeha'a*	**End.**	10	C	Mouth
" "				U	Bridge
Macrobrachium lar	Pacific prawn	Nat.	10	O	Mouth
" "				C	Bridge
ARTHROPODA, INSECTA	(insects)				
ODONATA, COENAGRIONIDAE					
Ischnura ramburii	Rambur's forktail	Nat.	10	R	Bend
" "				O	Para grass
	VERTEBRATES				
VERTEBRATA, AMPHIBIA	(amphibians)				
RANIDAE					
Rana catesbeiana	bullfrog (adult)	Nat.	10	R	Mouth
" "				R	Bridge
" "	(tadpole)			R	Mouth
VERTEBRATA, PISCES	(fishes)				
ELEOTRIDAE					
Eleotris sandvicensis	*'o'opu akupa*	**End.**	10	U	Mouth

Table 3 (continued).

Species	Common name	Status	QC Code	Abundance	Location
GOBIIDAE					
Stenogobius hawaiiensis	*ʻoʻopu naniha*	**End.**	10	A	Mouth
" "				C	Hau
" "				C	Bend
CICHLIDAE					
Sarotherodon melanotheron	black chin tilapia	Nat.	10	A	Mouth
" "				C	Bend
KUHLIIDAE					
Kuhlia xenura	*aholehole*	**End.**	10	C	Mouth
" "				C	Bend
MUGILIDAE					
Mugil cephalus	*ʻamaʻama*	**Ind.**	10	C	Mouth
POECILIIDAE					
Gambusia affinis	mosquito fish	Nat.	10	A	Mouth
Poecilia mexicana	Mexican molly	Nat.	10	C	Hau
" "				C	Bend
" "				A	Para grass
" "				C	Bridge
Poecilia reticulata	guppy, rainbow fish	Nat.	10	U	Bridge

Table 3 legend:

Status = distributional status
- **End** = endemic; native to Hawaii and found naturally nowhere else..
- **Ind** = indigenous; native to Hawaii, but not unique to the Hawaiian Islands.
- Nat = naturalized, exotic, introduced to the Hawaiian Islands.

QC Code:
- 10 – Observed in the field by aquatic biologist on August 11, 2006.
- 20 – Collected; identified in the laboratory; specimen(s) not saved.

Abundance categories:
- R – Rare – only one or two individuals seen.
- U – Uncommon – several to a dozen individuals observed.
- O – Occasional – regularly encountered, but in small numbers.
- C – Common - Seen everywhere, although generally not in large numbers.
- A – Abundant – found in large numbers and widely distributed.
- AA – Abundant in the extreme
- P – Present – noted as occurring, but quantitative information lacking.

Location:
- Mouth – at sand dunes.
- *Hau* – about 200 m upstream from mouth.
- Bend – at bend in stream just downstream from road
- Para (California) grass – downstream from the bridge where the stream runs parallel to road
- Bridge – at bridge.
- Upstream – upstream from bridge

None of these aquatic species is listed as threatened or endangered, or otherwise would be considered rare or special by the State or Federal governments (DLNR, 1998; Federal Register, 2005; USFWS, 2005, 2006).

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Figure 4. *Eleotris sandvicensis* (*ʻoʻopu akupa*) captured in the *muliwai* of Kawela Stream.

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Appendix E
Cultural Impact Assessment Report

Draft Report

A CULTURAL IMPACT ASSESSMENT FOR THE PROPOSED REPLACEMENT OF KAWELA STREAM BRIDGE ŌPANA AHUPUA`A, KO`OLOAULOA DISTRICT, ISLAND OF O`AHU

Prepared for
Earth Tech
841 Bishop Street, Suite 500
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October 2006

Pacific Consulting Services, Inc.
720 Iwilei Road, Suite 424
Honolulu, Hawai'i 96817

A CULTURAL IMPACT ASSESSMENT FOR THE PROPOSED REPLACEMENT OF KAWELA STREAM BRIDGE `ŌPANA AHUPUA`A, KO`OLAULOA DISTRICT, O`AHU

Prepared By
Sara L. Collins, Ph.D.
and
Richard Nees, B.A.

Prepared For
Earth Tech
841 Bishop Street, Suite 500
Honolulu, Hawai`i 96813-3920

October 2006

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INTRODUCTION

At the request of EarthTech, Pacific Consulting Services, Inc. (PCSI) conducted a cultural impact assessment study for the proposed replacement of Kawela Stream Bridge on Kamehameha Highway (Route 83) in `Ōpana Ahupua`a, Ko`olauloa District, Island of O`ahu (Figures 1 and 2). The cultural impact assessment was prepared in support of an Environmental Assessment for the subject undertaking. The State of Hawaii Department of Transportation (DOT) is constructing the bridge, partially funding the project with funds from the Federal Highways Administration (FHWA). Consequently, the inclusion of Federal funds requires compliance with applicable provisions of Section 106 of the National Historic Preservation Act (NHPA) as well as applicable State law such as Chapters 6E and 343, Hawaii Revised Statutes. The Kawela Stream Bridge replacement is part of a larger, multi-year program of bridge improvements and upgrades on the island of O`ahu being carried out by the DOT.

Project Description

Kawela Stream Bridge is located on Kamehameha Highway, *mauka* of Kawela Bay, just west of Kawela Camp Road. The proposed Kawela Stream Bridge Replacement project will entail demolition of the existing bridge, establishing a temporary bypass road with a temporary single-spanned bypass bridge on the *mauka* side of Kamehameha Highway, next to the existing bridge and construction of the new bridge. The project will include structural excavations, backfilling, and stream bank stabilization and will have equipment staging areas nearby. The proposed new bridge will be 40 feet long and 44 feet wide.

SCOPE OF WORK

The cultural impact assessment follows the State Office of Environmental Quality Control (OEQC) *Guidelines for Assessing Cultural Impact,* and is designed to comply with the requirements of Chapter 343 (Hawaii Revised Statutes) as amended in 2000 and approved by the Governor as Act 50 that same year.

Figure 1. Location of Project Area (USGS Kahuku Quad, 1:24:000)

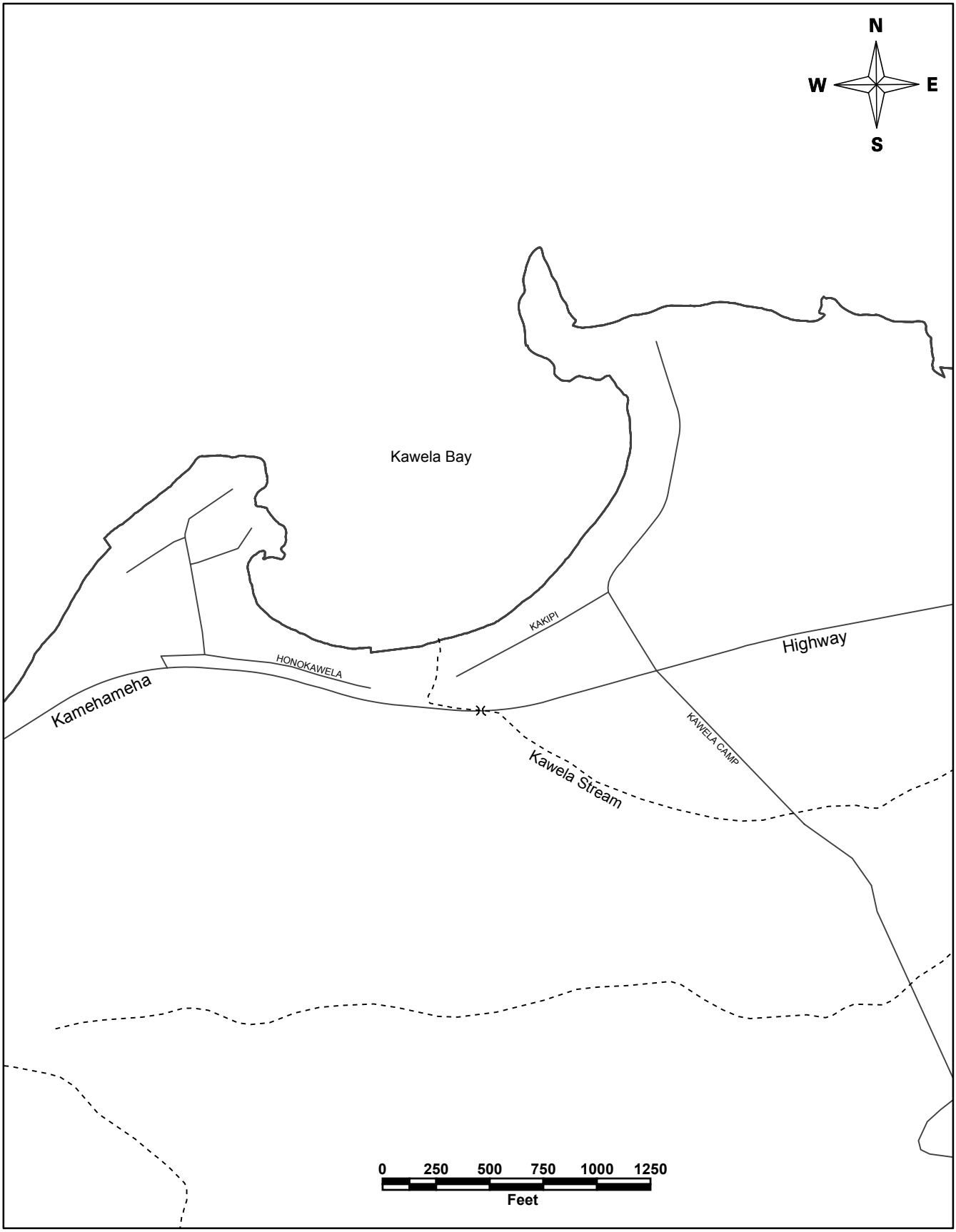

Figure 2. Layout Plan of Proposed Kawela Stream Bridge

The Scope of Work (SOW) for the cultural impact assessment included the following tasks:

- Archival background research on the culture history and previous land uses of the project area, on previous archaeological work in the area, and on previously known historic and cultural sites.
- A site inspection including an archaeological reconnaissance survey of the project area to identify any historic sites present.
- Photo-documentation of the existing Kawela Stream Bridge.
- Verbal and written consultation with the Office of Hawaiian Affairs (OHA).
- Interviews with community members recommended by the State Historic Preservation Division and/or the Office of Hawaiian Affairs.

PROJECT AREA BACKGROUND

ENVIRONMENTAL SETTING

Kawela Stream Bridge is located on Kamehameha Highway, in `Ōpana *ahupua`a* in the Ko`olauloa District on the island of O`ahu. Since roadways do not have Tax Map Key designations, the bridge lies between TMK: (1) 5-7-001: 021 on the *mauka* side of the road, and TMK (1) 5-7-006:022 on the *makai* side of the road. According to online records maintained by the Department of Planning and Permitting (DPP) at the City and County of Honolulu, the landowner on the *mauka* side is Campbell Estate while the *makai* parcel is owned by Kuilima Resort Company.

This part of Ko`olauloa is underlain by Waialua Silty Clay (Wka), a well-drained alluvial soil used for commercial agriculture, ranching, and pasture (Foote et al. 1972). Annual rainfall in the vicinity of the project area averages 1,000 mm (or about 39 inches) (Giambelluca et al. 1986). The lands adjacent to the existing bridge were formerly under commercial sugar cane cultivation; currently, truck farming is carried out on the Campbell Estate parcels while the *makai* parcel is part of the Turtle Bay Resort area. The current vegetation in the immediate vicinity of the project area consists of introduced, exotic taxa such as koa haole (*Leucana leucocephala*) and ironwood (*Casuarina equisetifolia*), and exotic grasses and shrubs.

CULTURE-HISTORICAL CONTEXT

The meaning of `Ōpana is unclear although Pukui et al. (1974) say that it may be related to *`ōpā*, the word for "squeeze." Legendary associations with `Ōpana include that of the brothers Kane and Kanaloa who were said to fish near the rocks called Papaamui or Pāpa`amoi (Clark 2002) outside Kawela Bay (McAllister 1933). McAllister (1933) also recorded a historic site, Kapi (or Punaulua) Fishpond, which was on the west side of Kawela Bay. Finally, a former *lo`i* area, called Kawela and fed by fresh-water springs, was located between `Ōpana and Hanakaoe Ahupua`a, to the east (Handy 1940).

HISTORY OF LAND USE ON TMK: (1) 5-7-001:021 & 5-7-006:022

The earliest historical accounts indicate that the Kahuku was comparatively well-populated by late pre-Contact and early post-Contact times. Captain Clerke and Lieutenant King, of Cook's third voyage, described a relatively large village at Kahuku Point, associated with a religious structure and agricultural fields, at the time they sailed across O`ahu's north coast in 1779 (Silva 1984). By the time Captain George Vancouver visited the area in 1794, there had been an apparent decline in population and a concomitant drop in agricultural activities (Vancouver 1984).

During the Māhele of 1848 – 1851, most of the lands in the Kahuku area (including Kahuku, Kawela, and `Ōpana 1 and 2 ahupua`a) were retained as crown lands, the property of King Kamehameha III. In 1851, Land Grant 497 (which includes the project area) was one of a number of parcels in this part of Ko`olauloa sold to Charles Gordon Hopkins, the Englishman who founded Kahuku Ranch. By 1873, H.A. Widemann was the owner of Kahuku Ranch – a vast cattle and sheep ranch extending over 15,000 acres in Ko`olauloa and including all of `Ōpana 1 and 2. By the end of the 19th century, Kahuku Ranch became part of the even larger holdings of James Campbell whose estate finally gained title to these properties in the 1930s (Silva 1984; Nakamura 1981).

Ranching activities persisted into the mid-20th century although Campbell leased property in the vicinity of the project area to Benjamin Dillingham who in turn subleased

much of his Kahuku leasehold to James Castle. Castle founded Kahuku Plantation and began large-scale cultivation of sugar and, through other subleases, pineapple. At the same time as the growth of Kahuku Plantation, Dillingham built the railway along the north shore that linked the plantations in Ko`olauloa and Waialua Districts; a portion of the railway right-of-way runs parallel to the road and *makai* of the project area. Commercial agriculture at Kahuku Plantation lasted until 1971 when the plantation shut down. At that time, and into the late 1970s, portions of the former plantation property were sold to various entities for resort development, including the lands *makai* of the project site which were acquired by Kuilima Resort Company (Nakamura 1981; Silva 1984).

PREVIOUS ARCHAEOLOGICAL STUDIES

The earliest systematic archaeological work in the vicinity of the project area is the 1930 island-survey conducted by Gilbert McAllister (1933). In his Archaeology of Oahu, McAllister identifies several historic sites in or near the project area. These sites include Kalou Fishpond (Site 257) in Waiale`e, Kapi or Punaulua Fishpond (Site 258) at Kawela Bay, and the Waikane Stone and Pahipahialua ko`a (Site 259) *mauka* of Kawela Bay.

More recently, much of the previous archaeological work in the vicinity of the project area has centered on the archaeological survey and mitigation required by development of what is now called the Turtle Bay Resort. Beginning in the mid-1980s, a series of reports by Paul H. Rosendahl, Inc. (PHRI) has provided data on the results of inventory survey (Bath 1984, Walker & Rosendahl 1986 & Walker et al. 1988), and data recovery (Walker et al. 1987).

More recently, PHRI completed a delayed report on the results of archaeological data recovery and monitoring. In addition, Archaeological Consultants of the Pacific conducted burial mitigation work near Kawela Bay, and staff of the State Historic Preservation Division recovered inadvertently discovered burials near Kawela Bay after the burials had been exposed by high surf. Most recently, Cultural Surveys Hawaii has conducted survey and mitigation work for both the Turtle Bay Hilton and Campbell Estate on lands near the project area. Unfortunately, these reports are not currently available through the State Historic Preservation Division.

2006 Archaeological Assessment Results

At the request of Earth Tech, Inc., archaeologists from Pacific Consulting Services Inc. (PCSI) conducted a reconnaissance survey of the area of potential effect (APE) in the vicinity of the Kawela Stream Bridge on August 9, 2006. The objective of the reconnaissance survey was to determine the presence or absence of surface archaeological sites in the APE, and to document the existing bridge through color photography. The environment in the vicinity of the bridge and the APE has been impacted in the past by Kamehameha Highway road construction as well as adjacent farming activities east of the Highway.

The APE, or the area surveyed, is approximately 850 feet (260 meters) in length and ranges from 20.0 to 30.0 feet (4.6 – 6.1 meters) wide. Construction plans for the proposed bridge replacement were used to help define the APE on the ground. Pedestrian transects were walked on the east side of Kamehameha Highway along the road shoulder and east of the road shoulder for approximately 20 feet. The Kawela Stream banks on either side of the bridge were also examined for surface archaeological remains. In addition, stream cuts on either side of the Kawela Stream Bridge were examined for subsurface cultural deposits.

No archaeological surface features were encountered during the survey within the APE. It was observed that the ground surface of the APE had been bulldozed and graded for many years. The presence of a dirt access road leading to the Stream on the east (*mauka*) side of Kamehameha Highway and to the adjacent farm was noted. No subsurface cultural deposits were observed in the stream cuts on either side of Kawela Stream Bridge. Figure 3 illustrates the general appearance of the project area.

The bridge was photographed using a Canon digital camera. Photos were taken of both sides of the bridge; detailed close up photos were taken of architectural details of the date carved into the side of the bridge as well as architectural details on the underside of the bridge and the side rails. Approximately 48 photographs were taken of the Kawela Stream Bridge, documenting the architectural details of this structure. Electronic copies of the photographs are being provided to SHPD on compact disc.

CULTURAL IMPACT ASSESSMENT

The cultural impact assessment for the project area is presented in this section. It includes a description of the proposed development project, methods used for the assessment, and the results of the assessment.

FIGURE 3. Photograph of Kawela Stream Bridge and Area of Potential Effect, Looking South/Southeast and *Mauka*.

DESCRIPTION OF PROPOSED KAWELA STREAM BRIDGE REPLACEMENT

The Kawela Bridge replacement project will entail demolition of the existing bridge, establishing a temporary bypass road with a temporary single-spanned bypass bridge on the *mauka* side of Kamehameha Highway, next to the existing bridge and construction of the new bridge. The project will include structural excavations, backfilling, and stream bank stabilization in the immediate vicinity of the bridge, and will have equipment staging areas nearby. The proposed new bridge will be 40 feet long and 44 feet wide.

POTENTIAL EFFECT OF THE PROPOSED PROJECT ON CULTURAL RESOURCES

No archaeological sites are known to be or were found within or adjacent to the APE for the proposed bridge replacement. The field inspection of August 2006 did not yield any evidence of such properties. Given the extensive prior disturbance of soil deposits in the APE, the existing roadway, and the underlying clay soils, the probability of encountering a buried historic site during construction, including burials, is low. The existing bridge is historic in age although it is not deemed significant. In accordance with a request from the SHPD, various features of the bridge and its vicinity were photo-documented for submission to the SHPD during the survey.

CONSULTATION WITH STATE HISTORIC PRESERVATION DIVISION

Consultation with the SHPD for the proposed undertaking began in 2001, with a letter to the SHPD from the Hawaii Department of Transportation (DOT) that generally described the proposed action. At that time, the SHPD indicated that it believed that archaeological sites were unlikely to be present, given the soil deposits and land use history of commercial agriculture; no specific comments were provided on architectural issues. In 2006, DOT sent a letter requesting comment from SHPD on the proposed bridge replacement; the SHPD only requested photo-documentation of the existing bridge and submission of that information. In addition, PCSI consulted with the O`ahu Archaeologist at SHPD who recommended that a reconnaissance survey be done in the APE; as noted above, the survey was carried out in August 2006.

CONSULTATION WITH THE OFFICE OF HAWAIIAN AFFAIRS (OHA)

In 2006, both DOT and PCSI sent letters to OHA requesting comment on the proposed undertaking. The Office of Hawaiian Affairs responded to DOT in June 2006 by recommending consultation with Mrs. Betty Jenkins, and recommending that an archaeological inventory survey be conducted. In October 2006, OHA responded to PCSI's request for comment by noting that it still recommended that an inventory survey with subsurface testing be carried out, in addition to the reconnaissance survey recommended by SHPD.

METHODS AND RESULTS

Prior to contacting interview subjects and OHA, we conducted archival research on the land use history of the subject parcel. We consulted records on file at the State Historic Preservation Division, the Bureau of Conveyances, the Hawaii State Archives, the State Library of Hawaii, and the University of Hawaii at Mānoa library.

Unfortunately, neither Mrs. Jenkins, recommended to us by OHA, nor the persons that she suggested be contacted (Mr. James Awai and Ms. Honey Awai Lenox) considered themselves sufficiently connected to the Kawela Stream Bridge or `Ōpana areas to feel comfortable in commenting on this project. Similarly, we did not receive a response to our telephone inquiry to a member of the O`ahu Island Burial Council who represents a Ko`olauloa landowner (Mr. Jace McQuivey). We were referred to another individual (Mr. Ralph Makaiau) who has resided in the Kahuku area and has been a longtime employee of the Turtle Bay Resort. Mr. Makaiau could only offer limited information on the history of commercial agriculture on the *mauka* side of the APE; no other information was forthcoming. Further inquiry with an individual (Ms. Pua Aiu) whose family has owned land at Waiale`e, near the APE, did not provide any results. None of the consultations – via telephone or email – provided any evidence of ongoing cultural practices associated with the Kawela Stream Bridge locale or the presence of sites such as Traditional Cultural Properties in the vicinity of the bridge.

SUMMARY

Archival research did not yield any account of traditional cultural properties or other archaeological sites being present within or near the APE. The reconnaissance survey conducted in August 2006 did not identify any archaeological sites or cultural deposits in the APE. The existing Kawela Stream Bridge, which is of historic age but not deemed significant, was photo-documented in compliance with a request from the State Historic Preservation Division. Finally, our attempts to locate and consult with knowledgeable individuals concerning the presence of cultural sites or the existence of ongoing cultural practices in the APE did not yield any results.

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APPENDIX 1: OFFICIAL CORRESPONDENCE WITH SHPD AND OHA

A. SHPD Comment Letter of 10/8/2001

B. SHPD Comment Letter of 7/10/2006

C. OHA Comment Letter of 6/5/2006

D. OHA Comment Letter of 10/4/2006

BENJAMIN J. CAYETANO
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DEPUTIES
JANET E. KAWELO
LINNEL NISHIOKA

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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

October 8, 2001

MEMORANDUM

LOG NO: 28325
DOC NO: 0110SC09

TO: Glenn M. Yasui, Administrator
Highways Division
Department of Transportation

FROM: DON HIBBARD, Administrator
Historic Preservation Division
Department of Land and Natural Resources

SUBJECT: Chapter 6E-8 Historic Preservation Comments on Proposed Bridge Improvements to Kamehameha Highway at Kawela Stream Bridge Opana, Ko`olauloa, O`ahu, TMK: 5-7

The Highways Division plans to replace the existing Kawela Bridge along Kamehameha Highway on O`ahu's North Shore. Bridge replacement will include establishing a temporary bypass road on the *mauka* side of Kamehameha Highway, next to the existing bridge. The project will be partly financed through funds from the Federal Highways Administration (FHWA), so, as you indicate, compliance with Section 106 of the National Historic Preservation Act will be necessary. Our review is based on historic maps, aerial photographs, reports, and records maintained at the State Historic Preservation Division; no field inspection was made of the proposed project area. Our Architecture and Archaeology Branches have reviewed the materials you sent, and we provide the following comments.

Architecture Comments

Please find attached information from the 1983 Historic Bridge Inventory for the Island of Oahu. We have no further comments at this time.

Archaeology Comments

The underlying soils of the project area are Waialua Silty Clays which are unlikely to contain significant historic sites such as buried cultural layers or human burials. In addition, the lands underlying Kamehameha Highway, the existing Kawela Bridge, and the proposed bypass route

have all been extensively altered through prior road construction activities. Consequently, we believe that the proposed bridge replacement will have "no effect" on significant historic sites.

Should you have any questions about architectural matters, including bridges, please feel free to contact Carol Ogata at 692-8032. Should you have any questions about archaeological matters, please feel free to contact Sara Collins at 692-8026.

SC:amk

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DEPT. OF TRANSPORTATION

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2006 JUL 13 A 9:53
HIGHWAYS DIVISION

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HISTORIC PRESERVATION
KAHOOLAWE ISLAND RESERVE COMMISSION
LAND
STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
POST OFFICE BOX 621
HONOLULU, HAWAII 96809

July 10, 2006

Glenn M Yasui, Administrator
Department of Transportation-Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813-5097

LOG NO: 2006.2154
DOC NO: 0607BF06
Architecture

Dear Mr. Yasui:

SUBJECT: **Section 106 (NHPA) Review**
RE: Kawela Stream Bridge Replacement HWY – DB 2.0785
Project Location: Kamehameha Highway, Oahu
Opana Ahupuaa, Koolauloa District, Oahu
TMK: (1) 5-7

This letter is in response to your letter dated April 25, 2006 which we received on April 24, 2006.

The SHPD has reviewed your letter initiating the Section 106 process for the proposed replacement of the Kawela Stream Bridge. The proposed project entails the demolition of the extant Kawela Stream Bridge. This will include structural excavation, backfill, stream bank stabilization and construction of a temporary single-spanned bypass bridge. The proposed new bridge will be 40-feet in length by 44-feet in width.

The 1983 *Historic Bridge Inventory, Island of Oahu* identified this particular bridge as having intact integrity and poor aesthetics. However, since that time the bridge has continued to deteriorate loosing more of its integrity. This bridge is not recommended eligible for listing on the National Register of Historic Places.

The SHPD concludes that the proposed project will have no adverse effect with the condition that the bridge be photographed before demolition. These photographs may be in digital or print format.

Thank you for the opportunity to comment. Should you have any questions regarding architectural concerns please call Bryan Flower at our Oahu office at (808) 692-8028.

Sincerely,

Peter T. Young, Chairperson
State Historic Preservation Officer

BF:jen

HWY 1113

PHONE (808) 594-1888

FAX (808) 594-1865

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2006 JUN 14 A 10: 30

HIGHWAYS DIVISION

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

HRD06/2425

June 5, 2006

Glen Yasui
Department of Transportation, Highways Division
869 Punchbowl Street
Honolulu, HI 96813-5097

RE: Section 106 Consultation for the Proposed Replacement of Kawela Stream Bridge, Ko'olauloa, O'ahu.

Dear Mr. Yasui,

The Office of Hawaiian Affairs (OHA) is in receipt of your April 25, 2006 request for comment on the above-listed proposed project. OHA offers the following comments:

Our staff recommends that an Archaeological Inventory Survey be completed prior to moving forward with the proposed bridge replacement. While the applicant states that the area has been heavily modified during previous periods of construction, the proposed project area lies within the Ko'olauloa coastal corridor, an area in which a relatively large amount of Native Hawaiian skeletal remains have been encountered.

Our staff also recommends that the applicant contact Betty Jenkins as part of the Section 106 consultation effort. She will likely supply information specific to the project and steer the applicant towards other individuals who may have additional pertinent information regarding the proposed project area and the larger cultural landscape of the Ko'olauloa District. Thank you for your correspondence.

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

PHONE (808) 594-1888

FAX (808) 594-1865

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

HRD06/2425B

October 4, 2006

Stephan D. Clark
Pacific Consulting Services Inc.
720 Iwilei Road, Suite 424
Honolulu, HI 96817

RE: Archaeological Survey and Cultural Assessment for the Proposed Replacement of Kawela Stream Bridge, Ko'olauloa, O'ahu, TMK 5-7.

Dear Mr. Clark,

The Office of Hawaiian Affairs (OHA) is in receipt of your September 12, 2006 request for comment on the above-listed proposed project. OHA offers the following comments:

In our June 5, 2006 letter to the applicant, our staff recommended that an "Archaeological Inventory Survey be completed prior to moving forward with the proposed bridge replacement." because "the proposed project area lies within the Ko'olauloa coastal corridor, an area in which a relatively large amount of Native Hawaiian skeletal remains have been encountered."

We understand that the State Historic Preservation Division O'ahu Archeologist recommended that the applicant to conduct an archaeological reconnaissance in place of an Archaeological Inventory Survey in support of the proposed project. Our staff's only concern about this recommendation is that an archaeological reconnaissance does not entail a subsurface testing component. We believe that a subsurface testing effort should be conducted prior to the commencement of construction related activities in the vicinity the proposed temporary road realignment, and at the outer boundaries of the bridge abutments. We feel that this can be accomplished with little-to-no impact on traffic flow, and that such an effort will allay concerns regarding the protection of our iwi kūpuna. OHA wants to avoid encountering human burials inadvertently during the construction process, as preservation options would be much more limited at that time.

OHA asks that, in accordance with Section 6E-46.6, Hawaii Revised Statutes and Chapter 13-300, Hawaii Administrative Rules, if the project moves forward, and if any significant cultural deposits or human skeletal remains are encountered, work shall stop in the immediate vicinity and the State Historic Preservation Division (SHPD/DLNR) shall be contacted.

Thank you for the opportunity to comment. If you have further questions or concerns, please contact Jesse Yorck, Native Rights Policy Advocate, at (808) 594-0239 or jessey@oha.org.

'O wau iho nō,

Clyde W. Nāmu'o
Administrator

Appendix F
Comments and Responses

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
Phone: (808) 768-8480 • Fax: (808) 523-4567
Web site: www.honolulu.gov

MUFI HANNEMANN
MAYOR

EUGENE C. LEE, P.E.
DIRECTOR

CRAIG I. NISHIMURA, P.E.
DEPUTY DIRECTOR

March 7, 2007

Ms. Tanya Copeland, Project Manager
Earth Tech, Inc.
841 Bishop Street, Suite 500
Honolulu, Hawaii 96813

Dear Ms. Copeland:

Subject: Draft Environmental Assessment (EA), Kawela Stream Bridge Replacement, Kamehameha Highway, District of Koolauloa, Oahu, Federal Aid Project No. 83B-01-01

Thank you for giving us the opportunity to comment on the above Draft EA.

The Department of Design and Construction (DDC) has the following comments:

- The Kaawela Stream Bridge replacement should be designed to convey the City and County of Honolulu Storm Drainage Standards Plat 6 flow.

- DDC anticipates the parcel (TMK 5-7-006:022) adjacent to the referenced bridge being eventually dedicated to the City as a public beach park, contingent on additional development at the adjacent hotel resort. The proposed bridge replacement project appears to have a potential positive impact. However, the report lacks a section typically provided in environmental assessments that addresses the project's relationship to published plans, codes, and ordinances. DDC would like to receive a copy of the project's final environmental assessment and be kept apprised of any significant changes and progress during the project's implementation.

Very truly yours,

Eugene C. Lee, P.E.
Director

ECL:lt (196276)

c: DDC Civil Division
DDC Facilities Division

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Eugene Lee, City and County of Honolulu, Department of Design and Construction
Date: 7 March 2007

Item	Comment
1	The Kaawela Stream Bridge replacement should be designed to convey the City and County of Honolulu Storm Drainage Standards Plat 6 flow.
Response: The Kawela Stream Bridge replacement would be designed to satisfy the *State of Hawaii Department of Transportation, Highways Division, Design Criteria for Highway Drainage* dated May 15, 2006. This statement has been added to Section 4.6 of the Final EA.	
2	DDC anticipates the parcel (TMK 5-7-006:022) adjacent to the referenced bridge being eventually dedicated to the City as a public beach park, contingent on additional development at the adjacent hotel resort. The proposed bridge replacement project appears to have a potential positive impact. However, the report lacks a section typically provided in environmental assessments that addresses the project's relationship to published plans, codes, and ordinances. DDC would like to receive a copy of the project's final environmental assessment and be kept apprised of any significant changes and progress during the project's implementation.
Response: Compatibility of the Proposed Action with Objectives of Federal, State and Local Land Use Plans and Policies has been added as Section 4.16 of the Final EA. The Department of Design and Construction has been included on the distribution for the Final EA. Project construction is proposed to commence in 2010. Section 2.3 of the Final EA has been revised to reflect the 2010 construction date.	

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Manager and Chief Engineer

DEAN A. NAKANO
Deputy Manager and Chief Engineer

March 12, 2007

Ms. Tanya Copeland
Earth Tech, Incorporated
841 Bishop Street, Suite 500
Honolulu, Hawaii 96813

Dear Ms. Copeland:

Subject: Your Letter Dated February 20, 2007 Regarding the Draft Environmental Assessment for Kawela Stream Bridge Replacement

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

The construction drawings should be submitted for our review and approval.

If you have any questions, please contact Robert Chun at 748-5440.

Very truly yours,

K. Shida

KEITH S. SHIDA
Principal Executive
Customer Care Division

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Keith Shida, City and County of Honolulu, Board of Water Supply
Date: 12 March 2007

Item	Comment
1	The construction drawings should be submitted for our review and approval.

Response: Final design plans will be submitted to the Board of Water Supply for review and approval prior to the commencement of construction.

LINDA LINGLE
GOVERNOR OF HAWAI'I

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAI'I
DEPARTMENT OF HEALTH
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
235 SOUTH BERETANIA STREET
LEIOPAPA A KAMEHAMEHA, SUITE 702
HONOLULU, HAWAI'I 96813
Telephone (808) 586-4185
Facsimile (808) 586-4186
Electronic Mail: OEQC@doh.hawaii.gov

March 19, 2007

Mr. Glenn Yasui, Administrator
Highways Division, Department of Transportation, State of Hawai'i
869 Punchbowl Street
Honolulu, Hawai'i 96813

Ms. Tanya Copeland
Earth Tech, Inc.
841 Bishop Street, Suite 500
Honolulu, Hawai'i 96813

Dear Mr. Yasui and Ms. Copeland:

The Office of Environmental Quality Control has reviewed the draft environmental assessment for the Kawela Stream Bridge Replacement, Tax Map Key Number 5-7-001: 021 por., and 5-7-006: 022 por., in the judicial district of Koolauloa, submitted to the Office of Environmental Quality Control by way of a January 30, 2007, agency letter. The Office of Environmental Quality Control offers the following comments for your consideration and response.

1. ***Environmental Consequences of Muliwai Breach on Water Quality of Kawela Bay:*** In Section 4.0 of the draft environmental assessment, please discuss the direct, indirect and cumulative effects of a breach of the sand barrier impounding the muliwai at the mouth of the Kawela Stream. Please discuss the timing of the work to minimize the likelihood of such a breach (i.e., schedule work during dry season, etc.).
2. ***Native and Indigenous Vegetation for Post Construction Landscaping:*** Please consider planting the graded and disturbed areas of the project site with native and indigenous vegetation after construction has been completed. Please see http://www.state.hi.us/health/oeqc/guidance/sustainable.htm.

Thank you for the opportunity to comment. If there are any questions, please call Mr. Leslie Segundo, Environmental Health Specialist, at (808) 586-4185.

Sincerely,

Genevieve Salmonson

GENEVIEVE SALMONSON
Director of Environmental Quality Control

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Genevieve Salmonson, Office of Environmental Quality Control
Date: 19 March 2007

Item	Comment
1	*Environmental Consequences of Muliwai Breach on Water Quality of Kawela Bay*: In Section 4.0 of the draft environmental assessment, please discuss the direct, indirect and cumulative effects of a breach of the sand barrier impounding the muliwai at the mouth of the Kawela Stream. Please discuss the timing of the work to minimize the likelihood of such a breach (i.e., schedule work during dry season, etc.).
Response: The project duration is anticipated to be approximately 18 months. Therefore, work cannot be restricted to periods of minimal rainfall. Construction activities would be permitted under National Pollutant Discharge Elimination System General Permits for dewatering, hydrotesting, and discharges of storm water during construction. Site-specific best management practices (BMPs) developed during the permitting process would ensure that discharges to Kawela Stream during construction would be in compliance with the state water quality standards (refer to Section 4.13 of the Final EA). Construction activities would not have significant impacts on the quantity or quality of water within Kawela Stream, and are not anticipated to increase the likelihood of a breach of the sand barrier. Therefore, construction impacts to Kawela Bay are not anticipated. Construction BMPs are discussed under the subheading “Mitigation Measures” in Sections 4.4, 4.9, and 4.13.	
2	*Native and Indigenous Vegetation for Post Construction Landscaping:* Please consider planting the graded and disturbed areas of the project site with native and indigenous vegetation after construction has been completed. Please see http://www.state.lii.us/health/oetc/guidance/sustainable.him.
Response: DOT is in the process of developing seed preparation and hydroseed techniques for a series of native grass hydroseed mixes. If techniques for native plant hydroseeding are sufficiently developed at the time of construction, the landscape architect will consider incorporation of native grasses into the post-construction landscaping.	

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

650 SOUTH KING STREET, 7TH FLOOR • HONOLULU, HAWAII 96813
TELEPHONE: (808) 523-4432 • FAX: (808) 527-6743
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MUFI HANNEMANN
MAYOR

HENRY ENG, FAICP
DIRECTOR

DAVID K. TANOUE
DEPUTY DIRECTOR

2007/ELOG-474(AM)

March 27, 2007

Ms. Tanya Copeland
Earth Tech, Inc.
841 Bishop Street, Suite 500
Honolulu, Hawaii 96813

Dear Ms. Copeland:

Subject: Draft Environmental Assessment (EA)
Kawela Stream Bridge Replacement
State of Hawaii Department of Transportation (DOT)
Kawela Stream Bridge – Kawela Bay
Tax Map Keys: 5-7-1: por. 21 and 5-7-6: por. 22

The Department of Planning and Permitting (DPP) has reviewed the Draft EA for the above-referenced project received on February 21, 2007, and offer the following comments:

Land Use Approvals Branch comments:

1. We confirm that the portion of the project located outside of the existing right-of-way requires the approval of a Special Management Area Use Permit (SMP), pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). As the project's valuation exceeds $125,000, a Major SMP will be required.

2. Section 2.0, Project Description: Please clarify which portions of the project will be conducted within and outside of the existing right-of-way.

3. Section 2.2.1, Construction of a Temporary Bypass Bridge and Detour Road, page 2-1: Expand on and describe the construction of the bypass bridge (e.g., material used, width span, number of spans, in-stream pier towers) and its location. Also, will temporary construction easements be required for any equipment or supplies, and if so, where will the easements be located?

4. Section 2.2.2, Demolition of the Existing Bridge and Section 2.2.3, Resurfacing, page 2-1: Please clarify whether the retaining walls are the same as the wing walls indicated in Figure 2-2. Clarify what areas will be resurfaced and at what location will the 100 feet of new guardrails will be installed.

5. Section 2.3, Project Schedule, page 2-2: What is the anticipated duration of the project?

6. Section 2.4.2, Rehabilitation of the Existing Bridge, page 2-2: Was there a criteria (e.g., "sufficiency rating") utilized to determine its eligibility for replacement?

7. Section 3.13, Water Resources, page 3-10: How far is the project from the shore of Kawela Bay?

8. Section 4.0, Environmental Consequences: Please discuss in the final EA, the existing drainage patterns and what, if any impacts, will the new replacement bridge have on this pattern.

9. Section 4.0, Environmental Consequences: Please include a section on and discuss how solid and liquid waste generated by the construction will be disposed of.

10. Section 4.2, Biological Resources, page 4-2: Is any lighting proposed as part of the project? Please address mitigation measures (e.g., lights will be shielded) that will be undertaken so as to minimize impacts to any avifauna species.

11. Section 4.9, Soils and Geology, page 4-6: Please expand on and provide estimates for the grading and grubbing work (e.g., in cubic yards) that will be required to construct the temporary bypass roadway. Provide additional details on the measures to restore the cleared areas once the project is completed.

12. Please include in the final EA a section that discusses the project's consistency with the Land Use Ordinance (LUO).

13. Please include in the final EA additional photographs of the bridge and surrounding areas (e.g., location of the temporary bypass road and bridge), especially in the direction of the coastline.

For questions pertaining to comments 1 through 13, please contact Ann Matsumura at 523-4077.

<u>Community Actions Plans Branch comments:</u>

14. Please include in the final EA, a discussion regarding the project's consistency with the Koolauloa Sustainable Communities Plan, in particular, with its Section 4.1, Transportation Systems: Adequate right-of-way for future bike route and the provision of safe pedestrian walkways on the replacement bridge.

Any question pertaining to the Koolauloa Sustainable Communities Plan may be directed to Ray Young at 527-5839

Civil Engineering Branch comments:

15. Table 1-1: Please note in the final EA that the project will require a grading permit.

16. What is the required design flow and free board for the new bridge?

17. Multiple span road crossings require a minimum of 30 feet clear span. The new bridge is 44 feet wide, but the plan is to cut the old bridge supports at the 6-foot elevation to minimize excavation in the stream. Basically, the flood capacity will be the same as the existing bridge.

18. What are the current DOT and AASHTO design standards as they apply to the bridge? It appears that the bridge will meet only the road width and shoulder requirements, but not any flood hazard requirements.

19. Where possible, a sag vertical curve with a low point at the waterway crossing should be provided. Was this requirement considered in the design of the new bridge?

Any questions pertaining to comments 15 through 19 may be directed to Don Fujii at 768-8107.

Thank you for the opportunity to review the above-referenced Draft EA.

Very truly yours,

Henry Eng, FAICP, Director
Department of Planning and Permitting

HE:cs

cc: Office of Environmental Quality Control

doc525733

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Henry Eng, City and County of Honolulu, Department of Planning and Permitting
Date: 27 March 2007

Item	Comment
1	**Land Use Approvals Branch comments:** 1. We confirm that the portion of the project located outside of the existing right-of-way requires the approval of a Special Management Area Use Permit (SMP), pursuant to Chapter 25, Revised Ordinances of Honolulu (ROH). As the project's valuation exceeds $125,000, a Major SMP will be required.
Response: Thank you for confirming that a Major SMP would be required.	
2	2. Section 2.0, Project Description: Please clarify which portions of the project will be conducted within and outside of the existing right-of-way.
Response: A map showing easements and construction parcels has been added to the Final EA in Appendix C.	
3	3. Section 2.2.1, Construction of a Temporary Bypass Bridge and Detour Road, page 2-1: Expand on and describe the construction of the bypass bridge (e.g., material used, width span, number of spans, in-stream pier towers) and its location. Also, will temporary construction easements be required for any equipment or supplies, and if so, where will the easements be located?
Response: Additional information on construction of the temporary bypass bridge and construction easements/parcels has been added to Section 2.2.1 of the Final EA. A statement that “Staging areas for construction equipment and supplies would be located either within the construction easement for the temporary bypass bridge (Appendix C) or within the closed section of Kamehameha Highway, makai of the detour road” has been added to Section 2.2.2 of the Final EA. A map showing the location and dimensions of construction easements and parcels has been added as Appendix C.	
4	4. Section 2.2.2, Demolition of the Existing Bridge and Section 2.2.3, Resurfacing, page 2-1: Please clarify whether the retaining walls are the same as the wing walls indicated in Figure 2-2. Clarify what areas will be resurfaced and at what location will the 100 feet of new guardrails will be installed.
Response: The retaining walls are not the same as the wing walls indicated in Figure 2-2. The makai side of the reinforced concrete retaining wall would be constructed within the stream bank paralleling Kamehameha Highway. The mauka side of the reinforced concrete retaining walls would be constructed immediately on the right-of-way paralleling Kamehameha Highway. It has been clarified that approximately 25 linear feet of new guardrail would be installed at each end of the replacement bridge in Section 2.2.3 of the Final EA.	
5	5. Section 2.3, Project Schedule, page 2-2: What is the anticipated duration of the project?
Response: The anticipated duration is 18 months. This has been added to Section 2.3 of the Final EA.	
6	6. Section 2.4.2, Rehabilitation of the Existing Bridge, page 2-2: Was there a criterion (e.g., "sufficiency rating") utilized to determine its eligibility for replacement?
Response: The sufficiency rating for Kawela Stream Bridge is 27. Bridges are eligible for replacement when the sufficiency rating is below 50.	
7	7. Section 3.13, Water Resources, page 3-10: How far is the project from the shore of Kawela Bay?
Response: The Kawela Stream Bridge is located approximately 480 feet from the shore of Kawela Bay. This has been added to Section 3.13 of the Final EA.	
8	8. Section 4.0, Environmental Consequences: Please discuss in the final EA, the existing drainage patterns and what, if any impacts, will the new replacement bridge have on this pattern.
Response: A statement that bridge replacement would not alter surface water drainage patterns within the Region of Influence has been added to Section 4.13 of the Final EA.	
9	9. Section 4.0, Environmental Consequences: Please include a section on and discuss how solid and liquid waste generated by the construction will be disposed of.
Response: Disposal of waste generated by construction is addressed in Section 4.4 of the Final EA.	
10	10. Section 4.2, Biological Resources, page 4-2: Is any lighting proposed as part of the project? Please address mitigation measures (e.g., lights will be shielded) that will be undertaken so as to minimize impacts to any avifauna species.

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Henry Eng, City and County of Honolulu, Department of Planning and Permitting
Date: 27 March 2007

Item	Comment
Response: Lighting is not proposed as part of this project.	
11	11. Section 4.9, Soils and Geology, page 4-6: Please expand on and provide estimates for the grading and grubbing work (e.g., in cubic yards) that will be required to construct the temporary bypass roadway. Provide additional details on the measures to restore the cleared areas once the project is completed.
Response: Approximately 750 cubic yards of material would be removed for construction of the temporary detour road and replacement bridge; the area used for the temporary detour road would be restored to its original elevations and condition upon project completion. This has been added to Section 4.9 of the Final EA.	
12	12. Please include in the final EA a section that discusses the project's consistency with the Land Use Ordinance (LUO).
Response: Compatibility of the Proposed Action with Objectives of federal, state and local land use plans and policies has been added as Section 4.16 of the Final EA.	
13	13. Please include in the final EA additional photographs of the bridge and surrounding areas (e.g., location of the temporary bypass road and bridge), especially in the direction of the coastline.
Response: A photo log has been added to the Final EA as Appendix B.	
14	**Community Actions Plans Branch comments:** 14. Please include in the final EA, a discussion regarding the project's consistency with the Koolauloa Sustainable Communities Plan, in particular, with its Section 4.1, Transportation Systems: Adequate right-of-way for future bike route and the provision of safe pedestrian walkways on the replacement bridge.
Response: Refer to Section 4.16 Compatibility of the Proposed Action with Objectives of Federal, State and Local Land Use Plans and Policies, which has been added to the Final EA.	
15	**Civil Engineering Branch comments:** 15. Table 1-1: Please note in the final EA that the project will require a grading permit.
Response: The required grading permit has been added to Table 1-1.	
16	16. What is the required design flow and free board for the new bridge?
Response: The required design flow is a 100-year storm event. Although the flow generated from the entire watershed is 2,388 cubic feet per second (cfs), water overbanks the stream channel upstream and at most, 800 cfs (the capacity of the existing bridge) reaches the existing bridge. The upstream channel would not be altered and the amount of water that flows to the bridge under the existing condition would be roughly the same amount of water that would flow under the proposed bridge. There has been no evidence or reports of the existing bridge being overtopped. Therefore, the design flow for this project is Q=800 cfs. The free board for the proposed bridge is 3 inches, which is less than the 2-foot minimum specified in the State of Hawaii Department of Transportation (DOT) Design Criteria for Highway Drainage (5/15/06). The DOT-Highways Division (HD) will document the need for a design exception for this criterion.	
17	17. Multiple span road crossings require a minimum of 30 feet clear span. The new bridge is 44 feet wide, but the plan is to cut the old bridge supports at the 6-foot elevation to minimize excavation in the stream. Basically, the flood capacity will be the same as the existing bridge.
Response: The waterway opening above 6-foot elevation would be increased such that, theoretically, the new bridge would be able to pass more water than the existing bridge. However, the upstream hydraulics currently govern the amount of water flowing under the bridge. The bridge replacement would not alter the upstream channel capacity and the amount of water that flows to the bridge under the existing condition would be roughly the same amount of water that would flow under the proposed bridge (see response to comment no. 16).	
18	18. What are the current DOT and AASHTO design standards as they apply to the bridge? It appears that the bridge will meet only the road width and shoulder requirements, but not any flood hazard requirements.

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Henry Eng, City and County of Honolulu, Department of Planning and Permitting
Date: 27 March 2007

Item	Comment
Response: The current DOT and American Association of State Highway and Transportation Officials (AASHTO) design standards as they apply to the bridge include the DOT Design Criteria for Bridges and Structures dated February 14, 2005 and the AASHTO Load and Resistance Factor (LRFD) Bridge Design Specifications, 4th edition, 2007, respectively. The DOT Design Criteria for Highway Drainage dated May 15, 2006 also applies. Bridge design conforms to the state highway drainage criteria, with the exception that the 2-foot minimum free board criterion would not be met. DOT-HD will document the need for a design exception for this criterion. Reference to the applicable design standards has been added to Section 2.2 of the Final EA.	
19	Where possible, a sag vertical curve with a low point at the waterway crossing should be provided. Was this requirement considered in the design of the new bridge?
Response: Where practical, the state designs the sag vertical curve of the bridge deck to avoid discharge directly into streams. This prevents roadway runoff from directly entering the stream. This information has been added to Section 4.13 of the Final EA.	

LINDA LINGLE
GOVERNOR OF HAWAII

CHIYOME L. FUKINO, M.D.
DIRECTOR OF HEALTH

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

In reply, please refer to:
EPO-07-047

March 27, 2007

Ms. Tanya Copeland
Earth Tech, Inc.
841 Bishop Street, Suite 500
Honolulu, Hawaii 96813

Dear Ms. Copeland:

SUBJECT: Draft Environmental Assessment for Kawela Stream Bridge Replacement, Kamehameha Highway, Koolauloa, Oahu, Hawaii

Thank you for allowing us to review and comment on the subject documents. The documents were routed to the various branches of the Environmental Health Administration. We have the following Clean Water Branch and General comments.

Clean Water Branch

The Department of Health (DOH), Clean Water Branch (CWB) has reviewed the limited information contained in the subject document and offers the following comments:

1. The Army Corps of Engineers should be contacted at (808) 438-9258 for this project. Pursuant to Federal Water Pollution Control Act (commonly known as the "Clean Water Act" (CWA) Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for 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..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations (CFR), Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.

2. In accordance with HAR, Sections 11-55-04 and 11-55-34.05, the Director of Health may require the submittal of an individual permit application or a Notice of Intent (NOI) for general permit coverage authorized under the National Pollutant Discharge Elimination System (NPDES).

   a. An application for an NPDES individual permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms

may also be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/forms/indiv-index.html.

b. An NOI to be covered by an NPDES general permit is to be submitted at least 30 days before the commencement of the respective activity. A separate NOI is needed for coverage under each NPDES general permit. The NOI forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html.

   i. Storm water associated with industrial activities, as defined in Title 40, CFR, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi). [HAR, Chapter 11-55, Appendix B]

   ii. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.** [HAR, Chapter 11-55, Appendix C]

   iii. Discharges of treated effluent from leaking underground storage tank remedial activities. [HAR, Chapter 11-55, Appendix D]

   iv. Discharges of once through cooling water less than one (1) million gallons per day. [HAR, Chapter 11-55, Appendix E]

   v. Discharges of hydrotesting water. [HAR, Chapter 11-55, Appendix F]

   vi. Discharges of construction dewatering effluent. [HAR, Chapter 11-55, Appendix G]

   vii. Discharges of treated effluent from petroleum bulk stations and terminals. [HAR, Chapter 11-55, Appendix H]

   viii. Discharges of treated effluent from well drilling activities. [HAR, Chapter 11-55, Appendix I]

   ix. Discharges of treated effluent from recycled water distribution systems. [HAR, Chapter 11-55, Appendix J]

   x. Discharges of storm water from a small municipal separate storm sewer system. [HAR, Chapter 11-55, Appendix K]

xi. Discharges of circulation water from decorative ponds or tanks. [HAR, Chapter 11-55, Appendix L]

3. In accordance with HAR, Section 11-55-38, the applicant for an NPDES permit is required to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. If applicable, please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

4. Any discharges related to project construction or operation activities, with or without a Section 401 WQC or NPDES permit coverage, shall comply with the applicable State Water Quality Standards as specified in HAR, Chapter 11-54.

The Hawaii Revised Statutes, Subsection 342D-50(a), requires that "[n]o person, including any public body, shall discharge any water pollutants into state waters, or cause or allow any water pollutant to enter state waters except in compliance with this chapter, rules adopted pursuant to this Chapter, or a permit or variance issued by the director."

If you have any questions, please contact the Engineering Section, CWB, at (808) 586-4309.

General

We strongly recommend that you review all of the Standard Comments on our website: www.state.hi.us/health/environmental/env-planning/landuse/landuse.html. Any comments specifically applicable to this application should be adhered to.

If there are any questions about these comments please contact Jiacai Liu with the Environmental Planning Office at 586-4346.

Sincerely,

KELVIN H. SUNADA, MANAGER
Environmental Planning Office

c: EPO
CWB

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Kelvin Sunada, Department of Health, Environmental Planning Office
Date: 27 March 2007

Item	Comment
1	**Clean Water Branch** The Department of Health (DOH), Clean Water Branch (CWB) has reviewed the limited information contained in the subject document and offers the following comments: 1. The Army Corps of Engineers should be contacted at (808) 438-9258 for this project. Pursuant to Federal Water Pollution Control Act (commonly known as the "Clean Water Act" (CWA) Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for 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..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40, Code of Federal Regulations (CFR), Section 122.2; and Hawaii Administrative Rules (HAR), Chapter 11-54.

Response: The Army Corps of Engineers (Corps) has determined that a Department of Army Permit under Section 10 of the Rivers and Harbors Act and Section 404 of the Clean Water Act would not be required for the proposed bridge replacement. The Corps determination (dated April 17, 2007) has been added to Appendix A of the Final EA.

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Kelvin Sunada, Department of Health, Environmental Planning Office
Date: 27 March 2007

Item	Comment
2	In accordance with HAR, Sections 11-55-04 and 11-55-34.05, the Director of Health may require the submittal of an individual permit application or a Notice of Intent (NOI) for general permit coverage authorized under the National Pollutant Discharge Elimination System (NPDES). An application for an NPDES individual permit is to be submitted at least 180 days before the commencement of the respective activities. The NPDES application forms may also be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmentai/water/eleanwater/fbrms/indiv-index.html. An NOI to be covered by an NPDES general permit is to be submitted at least 30 days before the commencement of the respective activity. A separate NOI is needed for coverage under each NPDES general permit. The NOI forms may be picked up at our office or downloaded from our website at: http://www.hawaii.gov/health/environmental/water/cleanwater/forms/genl-index.html. i. Storm water associated with industrial activities, as defined in Title 40, CFR, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi). [HAR, Chapter 11-55, Appendix B] ii. Construction activities, including clearing, grading, and excavation, that result in the disturbance of equal to or greater than one (1) acre of total land area. The total land area includes a contiguous area where multiple separate and distinct construction activities may be taking place at different times on different schedules under a larger common plan of development or sale. **An NPDES permit is required before the commencement of the construction activities.** [HAR, Chapter 11-55, Appendix C] iii. Discharges of treated effluent from leaking underground storage tank remedial activities. [HAR, Chapter 11-55, Appendix D] iv. Discharges of once through cooling water less than one (1) million gallons per day. [HAR, Chapter 11-55, Appendix E] v. Discharges of hydrotesting water. [HAR, Chapter 11-55, Appendix F] vi. Discharges of construction dewatering effluent. [HAR, Chapter 11-55, Appendix G] vii. Discharges of treated effluent from petroleum bulk stations and terminals. [HAR, Chapter 11-55, Appendix H] viii. Discharges of treated effluent from well drilling activities. [HAR, Chapter 11-55, Appendix I] ix. Discharges of treated effluent from recycled water distribution systems. [HAR, Chapter 11-55, Appendix J] x. Discharges of storm water from small municipal separate storm sewer system. [HAR, Chapter 11-55, Appendix K] xi. Discharges of circulation water from decorative ponds or tanks. [HAR, Chapter 11-55, Appendix L]
Response: A Notice of Intent (NOI) for National Pollutant Discharge Elimination System (NPDES) General Permit coverage would be submitted at least 30 days prior to the commencement of construction. Separate NOIs would be filed for discharges of hydrotesting water (NOI Form F), discharges of construction dewatering effluent (NOI Form G), and discharges of storm water associated with construction activities (NOI Form C), as applicable.	
3	In accordance with HAR, Section 11-55-38, the applicant for an NPDES permit is required to either submit a copy of the new NOI or NPDES permit application to the State Department of Land and Natural Resources, State Historic Preservation Division (SHPD), or demonstrate to the satisfaction of the DOH that the project, activity, or site covered by the NOI or application has been or is being reviewed by SHPD. If applicable, please submit a copy of the request for review by SHPD or SHPD's determination letter for the project.

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Kelvin Sunada, Department of Health, Environmental Planning Office
Date: 27 March 2007

Item	Comment
Response: A copy of the State Historic Preservation Division's determination letter would be included in the NPDES permit application(s).	
4	Any discharges related to project construction or operation activities, with or without a Section 401 WQC or NPDES permit coverage, shall comply with the applicable State Water Quality Standards as specified in HAR, Chapter 11-54.
Response: Comment noted. Site-specific construction best management practices would be employed during construction to ensure any discharges related to project construction would comply with the applicable State Water Quality Standards as specified in the Hawaii Administrative Rules (HAR), Chapter 11-54.	
5	**General** We strongly recommend that you review all of the Standard Comments on our website: www.state.hi.us /health/environmental/env-planning/1anduse/Iandusehtm1. Any comments specifically applicable to this application should be adhered to.
Response: Comment noted. Applicable Standard Comments will be adhered to.	

LINDA LINGLE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
DEPUTY DIRECTOR

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
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

March 29, 2007

Earth Tech, Inc.
841 Bishop Street Suite 500
Honolulu, Hawaii 96813

Attention: Ms. Tanya Copeland

Gentlemen:

Subject: Draft Environmental Assessment for Department of Transportations' Kawela Stream Bridge Replacement Project, Kawela, Oahu, Tax Map Key: (1) 5-7-1:21 and Kamehameha Highway

Thank you for the opportunity to review and comment on the subject matter. The Department of Land and Natural Resources' (DLNR) Land Division distributed or made available a copy of your report pertaining to the subject matter to DLNR Divisions for their review and comment.

Other than the comments from Engineering Division, Division of Water Resource Management and Land Division – Oahu District, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Russell Y. Tsuji
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

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

ROBERT K. M. SUDA
DEPUTY DIRECTOR

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
COMMISSION ON WATER RESOURCE MANAGEMENT
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

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February 23, 2007

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2007 FEB 27 A 10:11
DEPT OF LAND & NATURAL RESOURCES
STATE OF HAWAII

MEMORANDUM

TO: **DLNR Agencies:**
- x Div. of Aquatic Resources
- __ Div. of Boating & Ocean Recreation
- x Engineering Division
- ~~Div. of Forestry & Wildlife~~
- __ Div. of State Parks
- x Div. of Water Resource Management
- __ Office of Conservation & Coastal Lands
- x Land Division – Oahu District

FROM: Russell Y. Tsuji
SUBJECT: Draft Environmental Assessment for Kawela Stream Bridge Replacement Project
LOCATION: Kawela, Oahu, TMK: (1) 5-7-1:21 and Kamehameha Highway
APPLICANT: EarthTech on behalf of State Department of Transportation

Transmitted for your review and comment on the above referenced document. We would appreciate your comments on this document. Please submit any comments by March 28, 2007.

If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact my office at 587-0433. Thank you.

Attachments

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed: Eric T. Hirano
Date: 2/26/07

DEPARTMENT OF LAND AND NATURAL RESOURCES
ENGINEERING DIVISION

LD/RYT
Ref.: DEAKawelaStreamRep
Oahu.542

COMMENTS

(X) **We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone VE. The National Flood Insurance Program does regulate developments within VE as indicated in bold letters below.**

( ) Please take note that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Zone ___.

( ) Please note that the correct Flood Zone Designation for the project site according to the Flood Insurance Rate Map (FIRM) is ___.

(X) **Please note that the project site must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267.**

Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below:

(X) **Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.**

( ) Mr. Kelly Gomes at (808) 961-8327 (Hilo) or Mr. Kiran Emler at (808) 327-3530 (Kona) of the County of Hawaii, Department of Public Works.

( ) Mr. Francis Cerizo at (808) 270-7771 of the County of Maui, Department of Planning.

( ) Mr. Mario Antonio at (808) 241-6620 of the County of Kauai, Department of Public Works.

( ) The applicant should include project water demands and infrastructure required to meet water demands. Please note that the implementation of any State-sponsored projects requiring water service from the Honolulu Board of Water Supply system must first obtain water allocation credits from the Engineering Division before it can receive a building permit and/or water meter.

( ) The applicant should provide the water demands and calculations to the Engineering Division so it can be included in the State Water Projects Plan Update.

( ) Additional Comments: _____

_____

( ) Other: _____

_____

Should you have any questions, please call Ms. Alyson Yim of the Planning Branch at 587-0259.

Signed: _____
ERIC T. HIRANO, CHIEF ENGINEER

Date: 2/26/07

LINDA LINGLE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
DEPUTY DIRECTOR

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

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07 FEB 23 A10:27
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

February 23, 2007

MEMORANDUM

TO: **DLNR Agencies:**
_x_ Div. of Aquatic Resources
__ Div. of Boating & Ocean Recreation
_x_ Engineering Division
___ Div. of Forestry & Wildlife
___ Div. of State Parks
_x_ Div. of Water Resource Management
__ Office of Conservation & Coastal Lands
_x_ Land Division – Oahu District

FROM: Russell Y. Tsuji
SUBJECT: Draft Environmental Assessment for Kawela Stream Bridge Replacement Project
LOCATION: Kawela, Oahu, TMK: (1) 5-7-1:21 and Kamehameha Highway
APPLICANT: EarthTech on behalf of State Department of Transportation

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Attachments

(✓) We have no objections.
( ) We have no comments.
( ) Comments are attached.

Signed: Edwin T. Sakoda
Date: 2/27/07

LINDA LINGLE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
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BOATING AND OCEAN RECREATION
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

February 23, 2007

MEMORANDUM

TO: **DLNR Agencies:**
_x_ Div. of Aquatic Resources
__ Div. of Boating & Ocean Recreation
_x_ Engineering Division
___ Div. of Forestry & Wildlife
___ Div. of State Parks
_x_ Div. of Water Resource Management
__ Office of Conservation & Coastal Lands
_x_ Land Division – Oahu District

FROM: Russell Y. Tsuji
SUBJECT: Draft Environmental Assessment for Kawela Stream Bridge Replacement Project
LOCATION: Kawela, Oahu, TMK: (1) 5-7-1:21 and Kamehameha Highway
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Attachments

( ) We have no objections.
(✓) We have no comments.
( ) Comments are attached.

Signed: Cecil Lauta
Date: 3/26/07

LINDA LINGLE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
DEPUTY DIRECTOR

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
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STATE PARKS

STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

April 5, 2007

Earth Tech, Inc.
841 Bishop Street Suite 500
Honolulu, Hawaii 96813

Attention: Ms. Tanya Copeland

Gentlemen:

Subject: Draft Environmental Assessment for Department of Transportations' Kawela Stream Bridge Replacement Project, Kawela, Oahu, Tax Map Key: (1) 5-7-1:21 and Kamehameha Highway

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Other than the comments from Division of Aquatic Resources, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.

Sincerely,

Russell Y. Tsuji
Administrator

LINDA LINGLE
GOVERNOR OF HAWAII

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

ROBERT K. MASUDA
DEPUTY DIRECTOR

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
BUREAU OF CONVEYANCES
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STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
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DEPT. OF LAND & NATURAL RESOURCES
STATE OF HAWAII

AQUATIC RESOURCES: 759

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COMM. FISH.	
AQ RES/ENV	
AQ REC	
PLANNER	
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February 23, 2007

MEMORANDUM

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AQUATIC RESOURCES

TO: **DLNR Agencies:**

- x Div. of Aquatic Resources
- __ Div. of Boating & Ocean Recreation
- x Engineering Division
- __ Div. of Forestry & Wildlife
- __ Div. of State Parks
- x Div. of Water Resource Management
- __ Office of Conservation & Coastal Lands
- x Land Division – Oahu District

FROM: Russell Y. Tsuji
SUBJECT: Draft Environmental Assessment for Kawela Stream Bridge Replacement Project
LOCATION: Kawela, Oahu, TMK: (1) 5-7-1:21 and Kamehameha Highway
APPLICANT: EarthTech on behalf of State Department of Transportation

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Attachments

( ) We have no objections.
( ) We have no comments.
(X) Comments are attached.

Signed:
Date: 04/02/07

STATE OF HAWAII
Department of Land and Natural Resources
DIVISION OF AQUATIC RESOURCES

MEMORANDUM

TO: Dan A. Polhemus, Administrator
FROM: Glenn R. Higashi, Aquatic Biologist
SUBJECT: Draft Environmental Assessment for Proposed Kawela Stream Bridge Replacement Project
Comments Requested By: Russell Y. Tsuji, Land Division
Date of Request: 2/23/07 Date Received: 2/23/07

Summary of Project

Title: **Draft Environmental Assessment for Proposed Kawela Bridge Replacement**
Project By: **Department of Transportation**
Oahu
Location: **Kawela, Oahu – TMK: (1) 5-7-1:21 and Kamehameha Highway**

Brief Description:

The applicant, EarthTech on behalf of the State of Hawaii, Department of Transportation, is proposing to replace Kawela Stream Bridge which crosses Kawela Stream. The bridge is located on Kamehameha Highway, in the District of Koolau Loa, on the North Shore of Oahu.

The existing Kawela Stream Bridge was built in 1931, and serves as an important transportation link between the North Shore and Windward communities of Oahu. It is one spand reinforced concrete deck girder structure, 24 feet long and 27.4 feet wide, supported by abutments and parapets of reinforced concrete. Currently, the bridge is hydraulically inadequate and does not conform to current HDOT/Association of State Highway Transportation Officials (ASHTO) design standards and Federal Highway Administration (FHWA) hydraulic standards.

The purpose of the proposed project is to demolish the existing bridge and construct a new bridge that conforms to current HDOT/ASHTO and FHWA standards. The proposed scope of the project includes replacing the existing bridge with a 44-foot long by 40-foot wide bridge with two (2) 12-foot wide vehicular travel lanes and 8-foot paved shoulders in both directions of travel. The existing bridge would be demolished by cutting and removing the existing bridge abutments and wingwalls at an elevation of 6 ft. above the existing grade (stream bottom). Existing bridge abutments below the 6-ft. elevation would be left in place, so that no excavation within the stream channel would be required.

A temporary bypass bridge and detour road will be constructed on the mauka (toward the mountain) side of the existing bridge to accommodate traffic during the demolition and construction of the new bridge. Demolition activities to be undertaken for construction of the detour road include: cleaning, grubbing, and grading; removal of existing guardrail, guardrail post, signs, and pavement striping; and relocation of an existing fence and gate within the detour road alignment. The temporary detour road would consist of approximately two 11-ft vehicular travel lanes and would extend a maximum of 36 ft. outside of the right-of-way. Barricades and other traffic controls would be installed to clearly delineate the construction detour plan.

Upon completion of the new bridge and approaches, the temporary detour road and bypass bridge would be demolished and land used for the construction of the detour road would be restored to the original grade and condition, including grass re-seeding and tree planting.

Comments:

The Division of Aquatic Resources (DAR) has not conducted any biological surveys in Kawela Stream, but based on AECOS's biological reconnaissance survey (8/11/06) it provides habitat for 5 species of native macrofauna. These include native fish species such as *Stenogobius hawaiiensis*, *Eleotris sandwicensis*, *Mugil cephalus* and *Kuhlia* x*enura* and the native freshwater crustacean, *Macrobrachium grandimanus*.

The recruitment, migratory and reproductive natures of the native gobies and freshwater prawn are dependent on the ocean, and therefore a continuous stream flow should be provided during all phases of construction. In the design of the mauka temporary bypass bridge and detour road there is no description of the type of structure and/or materials that will be used. However, whatever type of structure or material that is used, (eg. pipe culverts, box culverts, etc.) it should be level and conform to the stream channel bottom so as to not provide an overhang, inhibiting upstream migration. Also, if the pipe culvert used is a spiral rib design, it should be filled with cement to provide a smooth surface on the pipe bottom.

Other mitigative measures that should be implemented during the construction and removal of the detour bridge and the demolition and construction of the new bridge to minimize the potential for erosion, siltation and pollution of the aquatic environment include:

1) lands denuded of vegetation should be planted or covered as quickly as possible to prevent erosion;
2) scheduling site work (particularly the excavation and grading) during periods of minimal rainfall;
3) use to silt fences or other means to prevent sediments from entering the stream;
4) dewatering of excavated material to prevent the reintroduction of silt into the stream, and;
5) preventing construction materials, petroleum products, debris and landscaping products from falling, blowing or leaching into the aquatic environment.

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Russell Tsuji, Land Division, Department of Land and Natural Resources
Date: 5 April 2007

Item	Comment
1	Other than the comments from Engineering Division, Division of Water Resource Management and Land Division — Oahu District, the Department of Land and Natural Resources has no other comments to offer on the subject matter. Should you have any questions, please feel free to call our office at 587-0433. Thank you.
Response: Comment noted.	
Engineering Division	
2	We confirm that the project site, according to the Flood Insurance Rate Map (FIRM), is located in Flood Zone VE. The National Flood Insurance Program does regulate developments within VE as indicated in bold letters below. Please note that the project site must comply with the rules and regulations of the National Flood Insurance Program (NFIP) presented in Title 44 of the Code of Federal Regulations (44CFR), whenever development within a Special Flood Hazard Area is undertaken. If there are any questions, please contact the State NFIP Coordinator, Ms. Carol Tyau-Beam, of the Department of Land and Natural Resources, Engineering Division at (808) 587-0267. Please be advised that 44CFR indicates the minimum standards set forth by the NFIP. Your Community's local flood ordinance may prove to be more restrictive and thus take precedence over the minimum NFIP standards. If there are questions regarding the local flood ordinances, please contact the applicable County NFIP Coordinators below: Mr. Robert Sumimoto at (808) 523-4254 or Mr. Mario Siu Li at (808) 523-4247 of the City and County of Honolulu, Department of Planning and Permitting.
Response: The requirement that the proposed project comply with the rules and regulations of the National Flood Insurance Program (44 CFR) and local flood ordinances has been added to Section 3.6 of the Final EA.	
Division of Water Resource Management	
3	We have no objections.
Response: Thank you for reviewing the Draft EA. It is noted that the Division of Water Resource Management has no objections.	
Land Division –Oahu District	
4	We have no comments.
Thank you for reviewing the Draft EA. It is noted that the Land Division –Oahu District has no comments.	
Division of Aquatic Resources	
5	The Division of Aquatic Resources (DAR) has not conducted any biological surveys in Kawela Stream, but based on AECOS's biological reconnaissance survey (8/11/06) it provides habitat for 5 species of native macrofauna. These include native fish species such as *Stenogobius hawaiiensis*, *Eleotris sandwicensis, Mugil cephalus* and *Kuhlia xenura* and the native freshwater crustacean, *Macrobrachium grandimanus*. The recruitment, migratory and reproductive natures of the native gobies and freshwater prawn are dependent on the ocean, and therefore a continuous stream flow should be provided during all phases of construction. In the design of the mauka temporary bypass bridge and detour road there is no description of the type of structure and/or materials that will be used. However, whatever type of structure or material that is used, (eg. pipe culverts, box culverts, etc.) it should be level and conform to the stream channel bottom so as to not provide an overhang, inhibiting upstream migration. Also, if the pipe culvert used is a spiral rib design, it should be filled with cement to provide a smooth surface on the pipe bottom.
Response: No structures or equipment would be placed in the stream channel for construction of the temporary detour bridge or the replacement bridge and stream flow will not be interrupted. The following text has been added to Section 2.2.1 of the Final EA as clarification: “The detour bridge, approximately 120 ft. long by 30 ft. wide, would be a single span steel bridge (Acrow Panel). No in-stream pier would be employed for the detour bridge.”	

Project Title: Draft Environmental Assessment
Kawela Stream Bridge Replacement, District of Koolauloa, Oahu, Hawaii
Reviewer: Russell Tsuji, Land Division, Department of Land and Natural Resources
Date: 5 April 2007

Item	Comment
6	Other mitigative measures that should be implemented during the construction and removal of the detour bridge and the demolition and construction of the new bridge to minimize the potential for erosion, siltation and pollution of the aquatic environment include: 1) lands denuded of vegetation should be planted or covered as quickly as possible to prevent erosion; 2) scheduling site work (particularly the excavation and grading) during periods of minimal rainfall; 3) use to silt fences or other means to prevent sediments from entering the stream; 4) dewatering of excavated material to prevent the reintroduction of silt into the stream, and; 5) preventing construction materials, petroleum products, debris and landscaping products from falling, blowing or leaching into the aquatic environment.

Response: The project duration is anticipated to be approximately 18 months. Therefore, work cannot be restricted to periods of minimal rainfall. Site-specific construction best management practices (BMPs) would be developed in consultation with the Department of Health Clean Water Branch during the National Pollutant Discharge Elimination (NPDES) permitting process to ensure that sediments and other potential pollutants are not discharged into Kawela Stream during construction. Construction BMPs are discussed under the subheading “Mitigation Measures” in Sections 4.4, 4.9, and 4.13 of the Final EA.