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FROM: GLENN M. OKIMOTO *Glenn M. Okimoto*
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SUBJECT: KAMEHAMEHA HIGHWAY
KOKOLOLIO STREAM BRIDGE REPLACEMENT, PROJECT NO. 83C-05-01
FINAL ENVIRONMENTAL ASSESSMENT (FEA) AND FINDING OF NO
SIGNIFICANT IMPACT

The State of Hawaii Department of Transportation respectfully requests publication of a notice of the Final Environmental Assessment and Finding of No Significant Impact (FONSI) for this project in the January 8, 2003, OEQC Environmental Notice.

We have enclosed a completed OEQC Publication Form, four copies of the FEA, and the project summary on disk. If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.9012 as noted above.

c: Leslie Kuisaki, Kimura International

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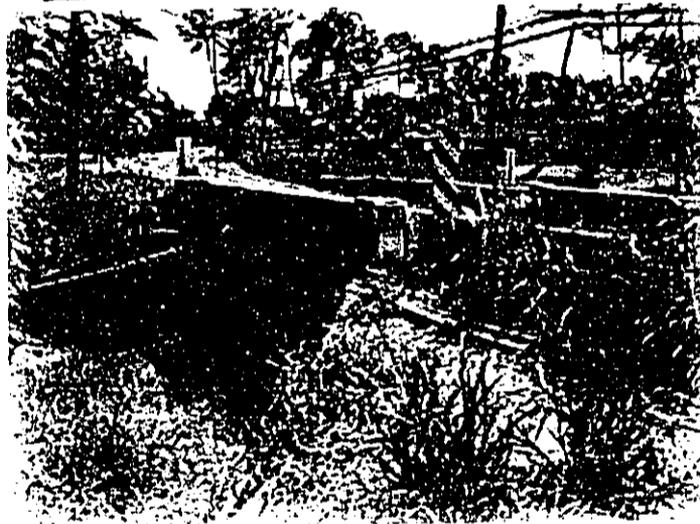
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FINAL
ENVIRONMENTAL
ASSESSMENT

(Kokololio Stream
Bridge Replacement)



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION

December 2002

**FINAL
ENVIRONMENTAL
ASSESSMENT**

**Kamehameha Highway
Kokololio Stream
Bridge Replacement
Project No. 83C-05-01**

Prepared for:



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION

Prepared by:



KIMURA INTERNATIONAL

December 2002

Table of Contents

<u>Section</u>	<u>Page</u>
1 INTRODUCTION	1
1.1 Introduction.....	1
1.2 Project Location.....	1-1
1.3 Purpose and Need for Action.....	1-1
1.4 List of Possible Environmental Permits and Approvals Required.....	1-4
2 ALTERNATIVES INCLUDING THE PROPOSED ACTION	2-1
2.1 Proposed Action.....	2-1
2.2.1 Project Description.....	2-1
2.1.2 Project Schedule and Costs.....	2-4
2.2 No Action.....	2-5
2.3 Alternative Design	2-5
2.4 Alternative Detour Road Location.....	2-6
3 AFFECTED ENVIRONMENT	3-1
3.1 Physical Environment	3-1
3.1.1 Geology and Topography	3-1
3.1.2 Soils	3-1
3.1.3 Climate.....	3-3
3.1.4 Natural Hazards	3-4
3.1.5 Water Resources	3-6
3.1.6 Noise	3-7
3.1.7 Air Quality	3-9
3.1.8 Hazardous Wastes and Materials.....	3-10
3.2 Biological Environment	3-10
3.2.1 Flora	3-10
3.2.2 Terrestrial Fauna.....	3-12
3.2.3 Stream Biology	3-14
3.3 Social-Economic Environment	3-15
3.3.1 Population and Employment	3-15
3.3.2 Parks and Public Facilities.....	3-16
3.3.3 Scenic and Visual Resources	3-16
3.3.4 Archaeological, Historic and Cultural Resources.....	3-17
3.4 Traffic and Circulation	3-19
3.5 Public Utilities	3-21

<u>Section</u>	<u>Page</u>
3.6 Public Health and Safety	3-21
3.6.1 Police Services	3-21
3.6.2 Fire Services.....	3-22
4 LAND USE PLANS, POLICIES, AND CONTROLS	4-1
4.1 Hawaii State Plan	4-1
4.2 State Land Use Classification	4-1
4.3 City and County of Honolulu Land Use Regulations	4-1
4.4 Special Management Area	4-7
5 DETERMINATION, FINDINGS AND REASONS SUPPORTING THE DETERMINATION	5-1
5.1 Determination	5-1
5.2 Findings and Reasons Supporting the Determination.....	5-2
6 REFERENCES	6-1
7 PERSONS AND AGENCIES CONSULTED IN THE PREPARATION OF THE ENVIRONMENT ASSESSMENT	7-1
7.1 List of Preparers.....	7-1
7.2 Individuals and Agencies Consulted During Preparation of the Environmental Assessment.....	7-2

APPENDICES

- A. Char & Associates, Botanical Resources Assessment
- B. Tim Ohashi, Survey of Terrestrial Avifauna and Mammals
- C. Mike Kido, Stream Assessment
- D. Cultural Surveys Hawaii, Archaeological Assessment
Cultural Surveys Hawaii, Cultural Impact Evaluation
- E. Correspondence with DLNR-SHPD

List of Figures

1	Location Map	1-2
2	TMK Map	1-3
3	Site Plan	2-2
4	Bridge and Road sections.....	2-3
5	Soils Map	3-2
6	Flood Zone Map.....	3-5
7	State Land Use Map	4-2
8	Kokololio Sustainable Communities Plan	4-4
9	Zoning/SMA	4-6

List of Tables

1-1	Potential Environmental Permits and Approvals	1-4
3-1	Heavy Construction Equipment Noise Levels at 50-Foot Distance	3-8

List of Acronyms

ADA	Americans With Disabilities Act
BMP	best management practices
BYU-H	Brigham Young University, Hawaii
CFR	Code of Federal Regulations
CO	carbon monoxide
DOH	State of Hawaii Department of Health
dBA	A-weighted decibels
DLNR-SHPD	Department of Land and Natural Resources, State Historic Preservation Division
EA	environmental assessment
FEMA	Federal Emergency Management Agency
FHWA	Federal Highway Administration
FIRM	Flood Insurance Rate Map
HABS/HAER	Historic American Buildings Survey/Historic American Engineering Record
HAR	Hawaii Administrative Rules
HDOT	State of Hawaii Department of Transportation
HRS	Hawaii Revised Statutes
LUO	Land Use Ordinance (City and County of Honolulu)
MSL	mean sea level
NBI	National Bridge Inventory
NEPA	National Environmental Policy Act
O ₃	ozone
OSHA	Occupational Safety and Health Administration
SMA	Special Management Area
SMP	Special Management Area Use Permit
SO ₂	sulfur dioxide
STIP	Statewide Transportation Improvement Program
TMK	tax map key
TSP	total suspended particulate matter
UBC	Uniform Building Code

1 INTRODUCTION

1.1 INTRODUCTION

The State of Hawaii Department of Transportation, Highways Division (HDOT), in cooperation with the Federal Highway Administration (FHWA), proposes to replace the existing bridge over Kokololio Stream, in the Koolauloa District, island of Oahu. The proposed action includes the development of a temporary detour road and bridge to accommodate traffic during construction of the replacement bridge.

Under Chapter 343, Hawaii Revised Statutes (HRS), Act 241, Session Laws of Hawaii (SLH) 1992, and Chapter 200 of Title 11, Department of Health (DOH) Administrative rules, "Environmental Impact Statement Rules," the proposed project involves the use of public funds and is therefore subject to the State's environmental review process. The project also requires a Special Management Area use permit from the City and County of Honolulu, which requires that an environmental assessment be completed.

The proposed action will not have significant impacts and is categorically excluded from federal environmental impact statement requirements under the National Environmental Policy Act (NEPA) by the Federal Highway Administration (FHWA). The project is an action, based on past experience, which does not involve significant environmental impacts and meets the definition of a categorical exclusion contained in 40 CFR 1508.4.

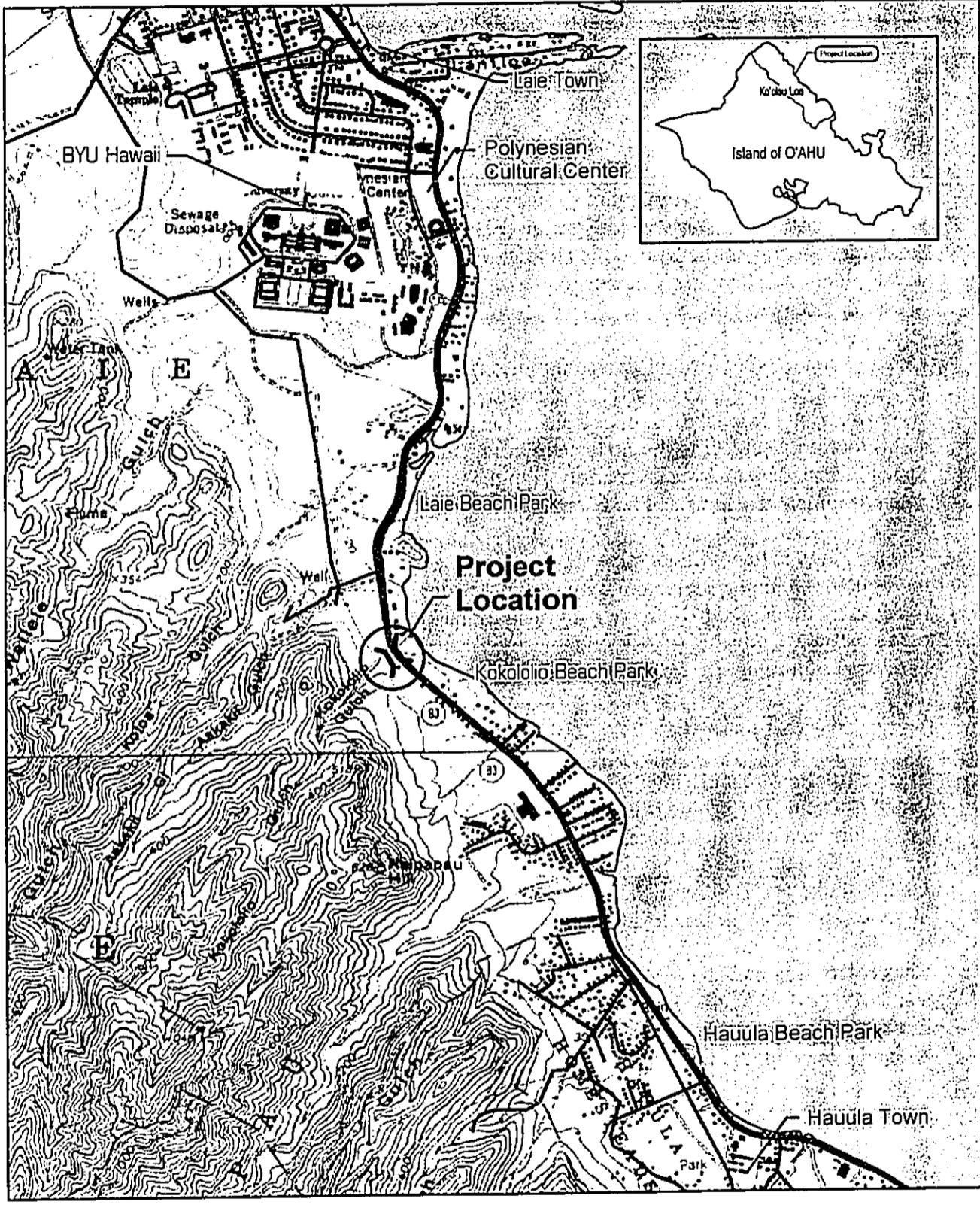
1.2 PROJECT LOCATION

The Kokololio Stream Bridge is located on Kamehameha Highway in the Koolauloa District, island of Oahu. The bridge is located in the community of Hauula, near milepost 20.21 (Figure 1). In this area of Oahu, Kamehameha Highway is the only through route, providing access between Kaneohe and the North Shore, and connecting the communities of Kaaawa, Hauula, Laie, Kahuku and Haleiwa. The bridge crosses Kokololio Stream, which crosses under the highway and meets the ocean at Kokololio Beach, approximately 300 feet to the east.

The project area includes TMK 5-5-6:11 and 01 on the *mauka* side of Kamehameha Highway, and TMK 5-5-1:07 and 55 on the *makai* side of the highway. These parcels are shown in Figure 2. Bridge reconstruction will occur in the roadway right-of-way, and the detour road will be built on land owned by the Church of Jesus Christ of Latter Day Saints (Mormon Church).

1.3 PURPOSE AND NEED FOR ACTION

The existing highway bridge over Kokololio Stream was constructed in 1932. The bridge is 24 feet long and 27.4 feet wide. It includes two travel lanes on Kamehameha Highway, one in each direction. The highway has a posted speed limit of 35 miles per hour in the project vicinity.



Source: USGS, Pub. 1982, Recorded 1999, VisiCom

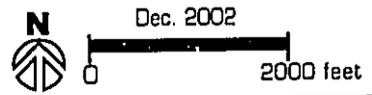
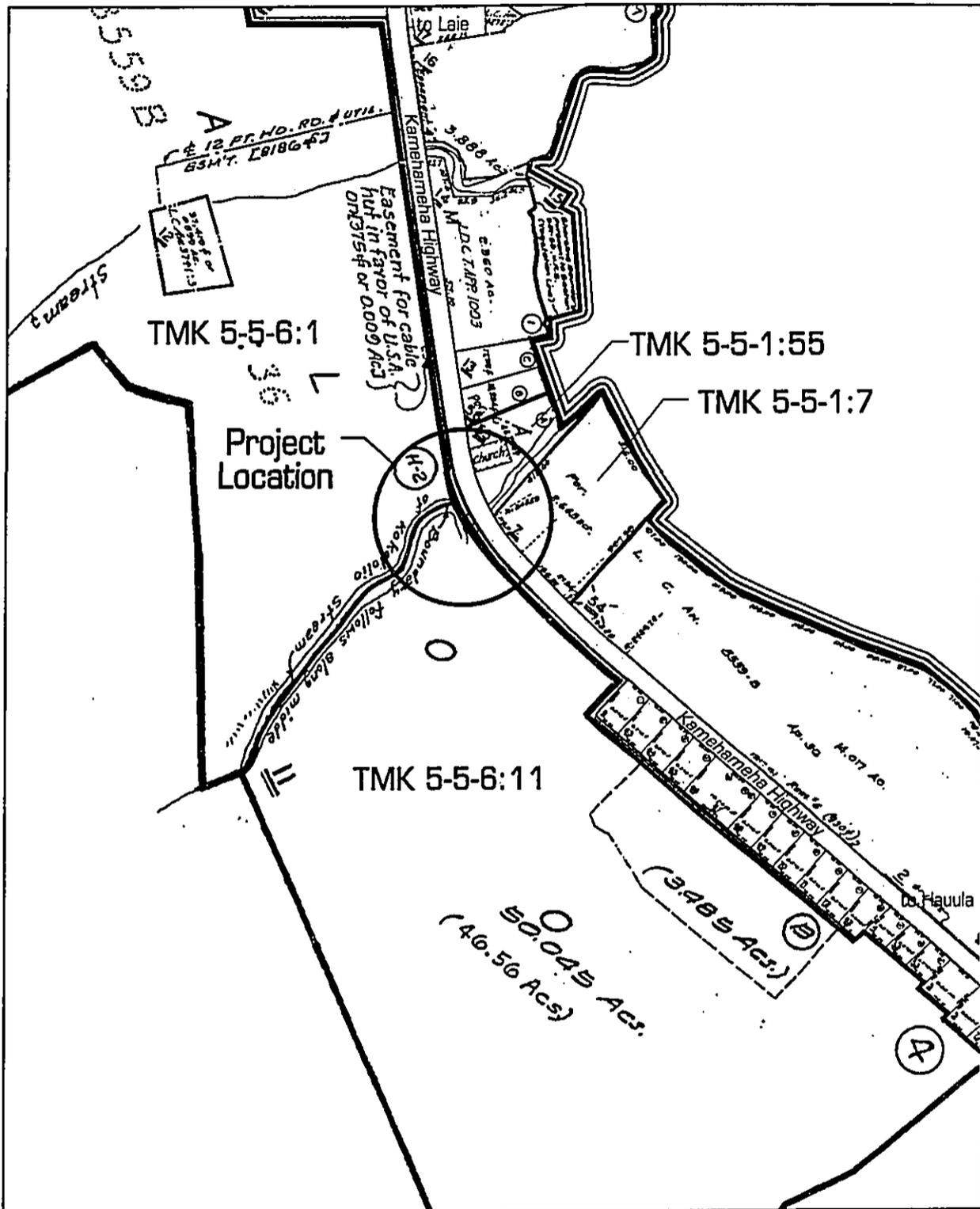


Figure 1
Location Map

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Source: State of Hawaii, Tax Map Bureau and Survey Department,

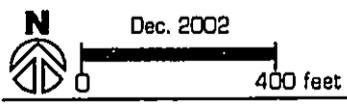


Figure 2
Tax Map Keys

In addition to its age, the bridge does not meet current design criteria and is in need of replacement. The Federal Highway Administration's National Bridge Inventory (NBI) system requires states to routinely inspect and rate the adequacy of its bridges. Based on the State Department of Transportation's current bridge replacement program, Kokololio Stream Bridge has an NBI ranking of 28. Bridges with an NBI rating lower than 50 qualify to receive federal replacement funds.

1.4 LIST OF POSSIBLE ENVIRONMENTAL PERMITS AND APPROVALS REQUIRED

Environmental permits and approvals that may be needed to implement the proposed action are listed in Table 1-1.

Table 1-1: Potential Environmental Permits and Approvals

Type	Agency
Department of the Army, Section 404 Permit	U.S. Army Corps of Engineers
Section 401 Water Quality Certification	State of Hawaii Department of Health, Clean Water Branch
Coastal Zone Management Consistency Determination	State of Hawaii Coastal Zone Management Program
Stream Channel Alteration Permit	State of Hawaii Department of Land and Natural Resources, State Water Commission
Section 106 National Historic Preservation Act Consultation, and Section 6E HRS Consultation	State of Hawaii Department of Land and Natural Resources, State Historic Preservation Division
Special Management Area Use Permit	City and County of Honolulu, Department of Planning and Permitting
National Pollutant Discharge Elimination System (NPDES) Notice of Intent, Form C (Stormwater Activities During Construction) and Form G (Dewatering)	State of Hawaii, Department of Health, Clean Water Branch
Noise permit	State of Hawaii Department of Health, Noise, Radiation, and Indoor Air Quality Branch

2. ALTERNATIVES INCLUDING THE PROPOSED ACTION

This chapter describes the proposed action and alternatives to the proposed action that were considered. The alternatives include no action, an alternative bridge design, and alternative detour road location.

2.1 PROPOSED ACTION

2.1.1 Project Description

The proposed action will replace the existing Kokololio Stream Bridge with a new bridge that will meet current State and Federal design criteria. Figure 3 shows the project site plan, including the location of the of the temporary detour road. Figure 4 shows bridge and road sections.

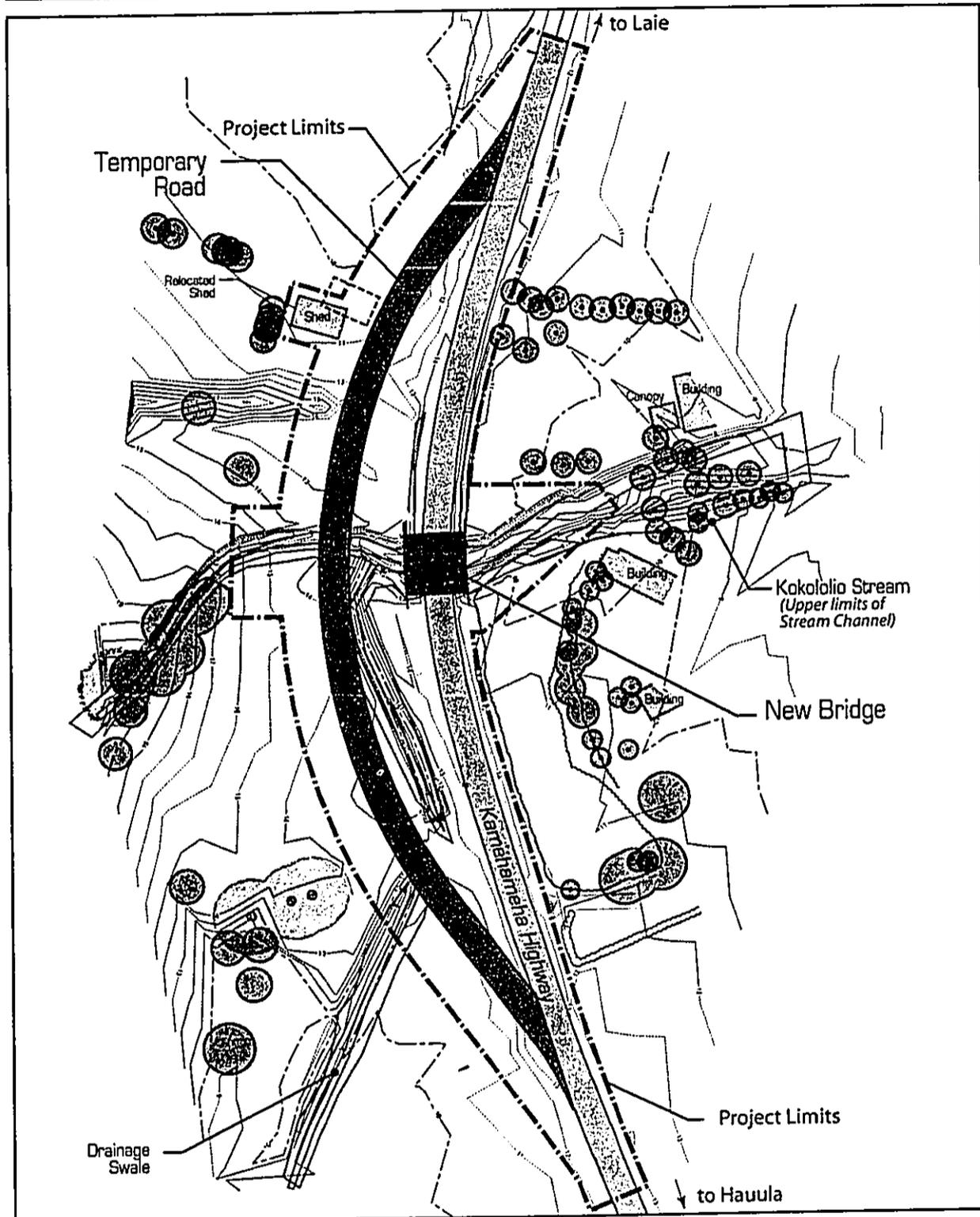
The proposed bridge will be approximately 60 feet long by 50 feet wide, with two 12-foot wide travel lanes and two 8-foot shoulders. The *mauka* or west side of the bridge will have an Americans with Disabilities Act (ADA)-compliant, 5-foot wide bikeway/pedestrian walkway, separated from the shoulder by a nearly 3-foot high concrete jersey barrier. The separated bikeway/walkway will reduce hazards to bicyclists and pedestrians associated with the narrow design of the bridge and its location at a road curve. The proposed bridge will be constructed of prestressed steel girders with an eight-inch thick concrete deck. Right-of-way will need to be acquired for the construction of the new bridge and water line easement.

Temporary Detour Road

The proposed project includes construction of a temporary detour road to route traffic around the site while the new bridge is being constructed. The detour road will be completed prior to the demolition of the existing bridge, and will be located approximately 80 feet *mauka* (west) of the existing bridge, as shown in Figure 3. It will be constructed on unimproved land owned by Hawaii Reserve, Inc., a nonprofit corporation owned by the Church of Jesus Christ of Latter Day Saints (Mormon Church).

Traveling north on Kamehameha Highway, the detour road will bear left approximately 220 feet before the existing bridge, and rejoin Kamehameha Highway approximately 200 feet past the existing bridge. The detour road will have two 12-foot wide travel lanes with two five-foot wide shoulders on either side. The road will be lighted.

Where the detour road crosses Kokololio Stream, two 54-inch pipe culverts will be installed to convey the stream's 25-year design storm flow. The pipe culverts will be removed when the temporary detour road is removed (i.e., after new bridge is completed).



Source: Mitsunaga & Associates

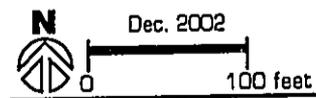
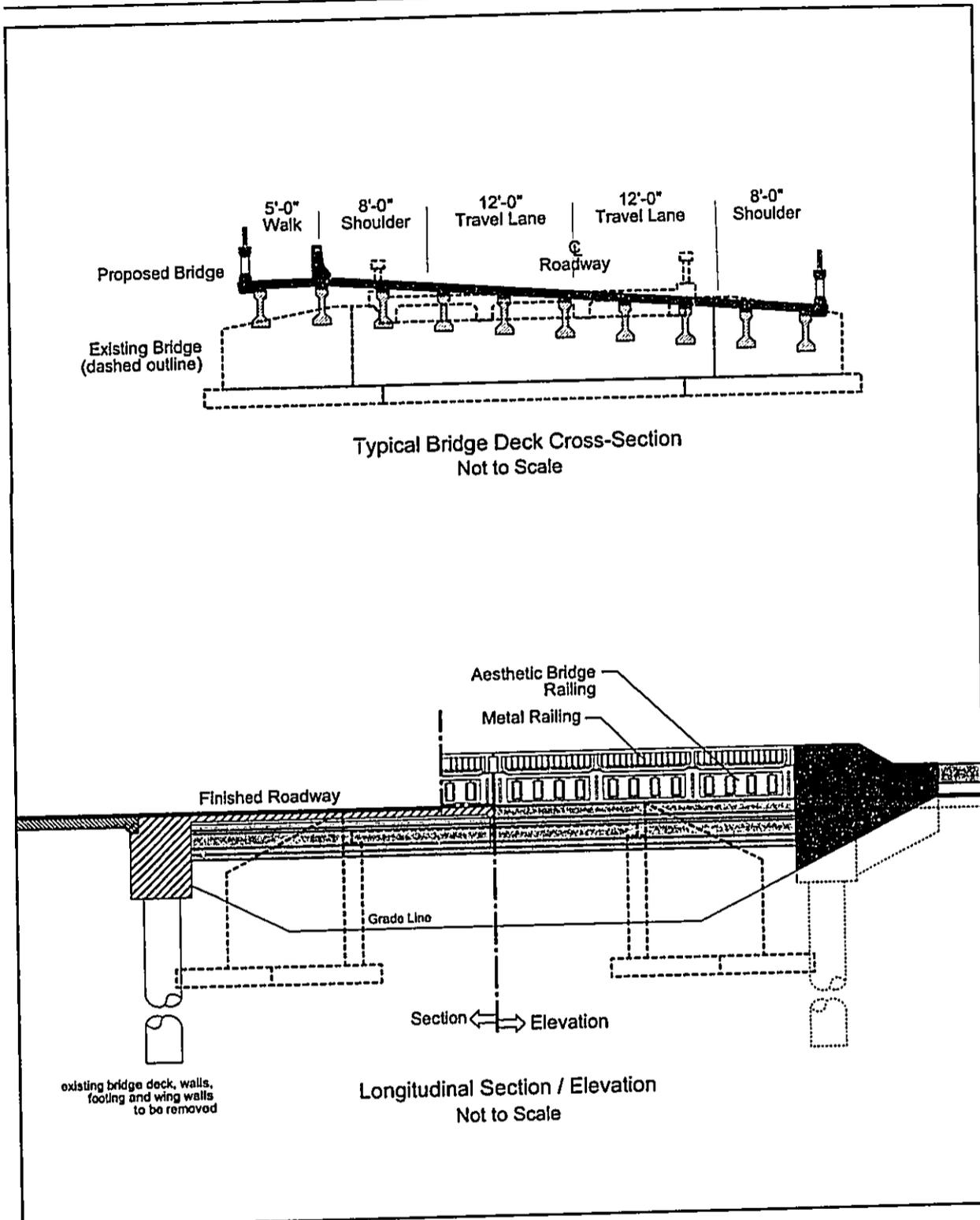


Figure 3
Site Plan



Source: Mitsunaga & Associates
Dec. 2002

Figure 4
Bridge & Road Sections

The detour road will also cross a drainage swale that runs parallel to Kamehameha Highway, and that provides overflow capacity for the stream. An existing 36-inch culvert will be removed and replaced with a new 36-inch culvert. This pipe culvert conveys storm water under an existing driveway access and will remain in place after completion of the bridge.

An existing 25-foot by 40 foot storage shed located north of the bridge will be in the path of the proposed detour road, and will be replaced. Utility poles with high voltage cables and water laterals on the *mauka* side of Kamehameha Highway will be relocated.

Bridge Construction

Once the temporary detour road is in operation, construction of the replacement bridge will begin. Drill shafts will be constructed on both sides of the existing bridge, and the new abutments (bridge supports) will be constructed up to the underside of the existing bridge deck. The existing bridge abutments will remain in place and be used for shoring during construction of the new abutments. The existing footing will be left in place, and the existing abutment walls will be removed prior to placing the new bridge deck. The existing abutments will be demolished to about one foot below finish grade. The longitudinal section/elevation in Figure 4 illustrates the location of the proposed abutment structures in relation to the existing structures that will eventually be removed. Because the new abutments will be located above the water table, no dewatering is anticipated. All excavated material, fill and debris will be removed and disposed.

Only minor scour with no long-term aggradation or degradation is anticipated. Rip-rap will be placed on the bottom and slopes of the stream bed through the bridge section to provide scour protection for the proposed bridge.

Existing waterlines, electrical lines and telephone/CATV lines will be relocated. Street lighting will be relocated and disturbed areas will be re-landscaped as part of the project.

Completion of Construction

After completion of the new bridge, the temporary detour road will be removed and the site will be restored to its original condition. As discussed in Chapter 3, there are no threatened or endangered plants or animals in the detour road area. Areas disturbed by construction adjacent to the stream will be grassed over as soon as possible, and stream banks will be revegetated with same or like vegetation.

2.1.2 Project Schedule and Costs

The entire project is expected to extend just over a three-year period. Project design is expected to require approximately 1.5 years. The advertising, bid and contract award phase will take approximately 3.5 months. Construction is anticipated to be completed in approximately 1.25 years.

The estimated total cost for the proposed project is about \$4 million. The project is being funded jointly by the State Department of Transportation and the Federal Highway Administration, through the Statewide Transportation Improvement Program (STIP).

2.2 NO ACTION

The no action alternative would retain the existing bridge with no improvements or replacement. The advantage of this action is that it would not entail any cost. However, the Kokololio Stream Bridge would remain non-compliant, failing to meet State and Federal design and seismic criteria. There would not be a designated bike lane or pedestrian walkway on the bridge. Overall, the no action alternative would fail to meet the project purpose and need. It would not improve the existing bridge or improve pedestrian and bicycle safety.

2.3 ALTERNATIVE DESIGNS

Phased construction, rather than a detour road, was considered. However, due to the volume of daily traffic in the area (11,300 vehicles in 2002), phased construction would create unsatisfactory traffic delays and inconvenience for area residents, as well as, dangerous working areas for the roadway construction crews. Moreover, because Kamehameha Highway is the only thoroughfare through the area, phased construction could hinder emergency access to Hauula and the surrounding communities. Also, phased construction would require a wider bridge and thus increase the amount of right-of way to purchase from the *mauka* property owners. For these reasons, phased construction was determined to have a significantly higher estimated cost than building a detour road and thus eliminated as an alternative.

Another alternative considered was to realign the existing highway by increasing the road curvature at the existing bridge to provide adequate sight distance based on the latest highway design standards. This would result in a realigned road located slightly *makai* of the existing highway in the vicinity of the bridge. However, this alternative would impact several beach front residences located *makai* of the road, as well as the existing beach park, and was therefore eliminated from further consideration.

An alternative design to construct a box culvert rather than a replacement bridge was also investigated. A box culvert configuration is generally very efficient in allowing water to pass through. However, the proposed project would require two parallel box culverts. Under this alternative, the center wall between the two box culverts could create a barrier where large debris (e.g., tree or branch) coming downstream could get trapped, clogging the culvert and possibly causing flood waters to overtop the road. For this reason, a box culvert was determined to be less favorable than building a new bridge.

Overall, none of these alternatives (phased construction, realigned roadway, box culvert) compared favorably to the proposed project, and were therefore eliminated from consideration.

2.4 ALTERNATIVE DETOUR ROAD LOCATION

An alternative detour road *makai* of the existing bridge was considered, but eliminated from consideration. A *makai* detour road would have impacted at least three privately-owned residential dwellings as well as a portion of the City and County's Kokololio Beach Park. By contrast, the *mauka* detour route will not impact existing residential or recreational uses. The *mauka* route also has more vacant land for a detour road and supporting uses such as a construction field office, vehicle staging and material storage. Overall, the *mauka* temporary detour road was determined to be preferable to a *makai* detour road.

3 AFFECTED ENVIRONMENT, IMPACTS AND MITIGATION

3.1 PHYSICAL ENVIRONMENT

3.1.1 Geology and Topography

The project area is in Hauula, just south of Laie, on the northeast coast on the island of Oahu. The project area sits at the foot of the Koolau Mountain Range, the eroded remnant of a major shield volcano. The Koolau Mountain Range forms the interior boundary of windward Oahu, and extends from Makapuu at the southeast to Kahuku at the north. The topography of the area, including deep gulches and high sea cliffs, was formed as basalt lava flows were eroded by persistent rainfall and streams. During the long period of volcanic quiescence and erosion, large coastal plains were formed on windward Oahu by the deposition of sediments on coral reefs and changes in sea level.

The *mauka* areas surrounding the project site form the watershed for the northeastern portion of the Koolau Mountains. Numerous gulches cut through the area from the mountains to the ocean. There are several perennial streams and various intermittent streams, including Kokololio Stream, in the vicinity.

The proposed construction site at the detour road location is about 9 to 14 feet above mean sea level (msl) and within 100 yards of the ocean shoreline. The surrounding area is generally flat, but slopes gradually from the mountains toward the ocean. The elevation at the stream channel invert at the existing bridge is 5.0 feet above msl. The elevation of the stream channel invert at its crossing with the temporary detour road is 6.8 feet above msl.

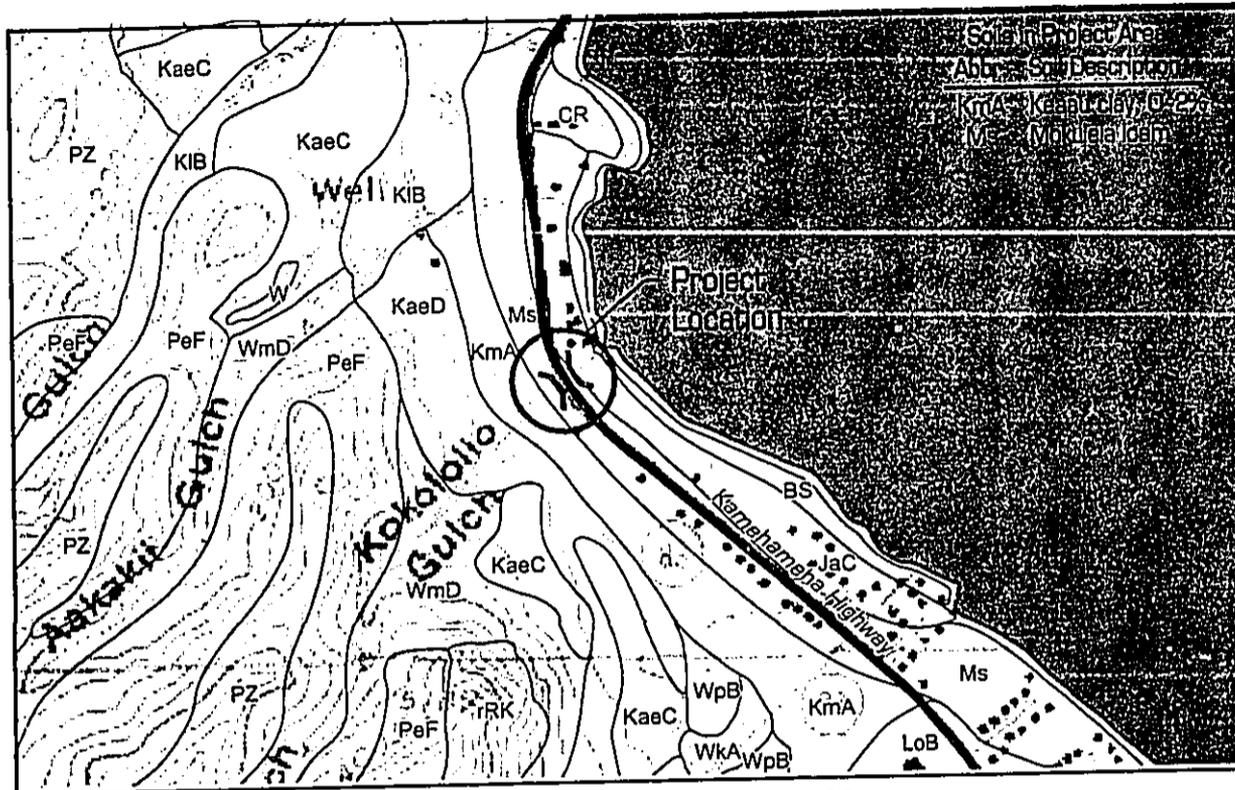
3.1.2 Soils

Existing Conditions

U.S. Department of Agriculture Soil Classification

The U.S. Department of Agriculture (1972) classifies the soil types in the immediate project area as Mokuleia loam (Ms) and Keaau clay (KmA). Most of the soil in the project area, including most of the temporary detour road, is Mokuleia loam. This soil type is located on both sides of Kamehameha Highway. The *mauka* portion of the project area has Keaau clay soils. Jaucas sand (JaC) is located along the shoreline, *makai* of the project area. No construction will occur in these areas. The location of these soil types are shown in Figure 5. The two soil types in the project area are described below.

Mokuleia loam (Ms). This series consists of well-drained soils along the coastal plains. The soils formed in recent alluvium deposited over coral sand. The surface layer is loam and in most places about 8 inches thick. Permeability is moderate in the surface layer and rapid in the subsoil. The soil is nearly level. Runoff is very slow and the erosion hazard is no more than slight.



Source: US Dept. of Agriculture, Soil Conservation Service, Issued 1972; C&C of Honolulu, GIS

Figure 5
Soils Map

Keaau clay, 0 to 2% slope (KmA). The Keaau series consists of poorly drained soils on coastal plains of Oahu. These soils developed in alluvium deposited over reef limestone or consolidated coral sand. They are nearly level and gently sloping. Permeability is slow, runoff is slow and the erosion hazard is no more than slight. Workability is difficult because the soil is very sticky and very plastic. This soil has a high shrink-swell potential.

Preliminary Geotechnical Report

A preliminary geotechnical report (Geolabs, Inc., 2002) noted that the project site is generally underlain by surface fills placed over coralline detritus, saprolite, and basalt formation. The surface fills generally consisted of medium still clayey silts and extended to depths of about 10 to 14 feet below the existing ground surface. The coralline detritus encountered in the borings consisted of silty sands and gravel and were generally loose in relative density. The coralline detritus extended to depths of about 20.5 to 23.5 feet below the ground surface and were underlain by stiff clayey silt saprolitic materials. Soft to medium hard basaltic formation

was encountered at about 45 to 52.5 feet below the ground surface and extended to the maximum depth explored of about 82 feet below the ground surface.

Groundwater was encountered at depths of about 8.5 to 14.1 feet below the ground surface. However, the report noted that groundwater levels are expected to change due to tidal fluctuations, seasonal precipitation, surface water runoff, and other factors.

Potential Impacts and Mitigation Measures

The preliminary geotechnical report recommended that cast-in-place concrete drilled shaft foundations be used to support the proposed replacement bridge. The bridge would be supported on either 36-inch or 48-inch diameter cast-in-place concrete drilled shafts extending down to approximately elevation -60 to -80 feet MSL. The findings of the final geotechnical report will be utilized to design the proposed bridge and retaining structures.

No adverse impact to adjacent structures is anticipated during bridge construction or drilling. During construction, the drilled shafts will be enclosed in steel casings. The casings will minimize the displacement of the existing adjacent soils during drilling, thereby minimizing the potential for damage to surrounding structures.

3.1.3 Climate

Existing Conditions

The climate in the project area is typical of windward Oahu. The summer months from July to October are typically drier and warmer, while the winters are usually wet and cooler. Average temperatures range from 70 to 85 degrees Fahrenheit during the summer months, to 62 to 75 degrees Fahrenheit during the winter.

The area is subject to prevailing northeast tradewinds with average velocities between 14 and 16 miles per hour most of the year. Strong gusts up to 20 or 25 miles per hour occur intermittently. Tradewinds prevail 90 percent of the time during the summer and 50 percent in winter. The area also experiences Kona (southerly) winds and storms, particularly during the winter months.

The nearest rainfall collection station is in Kahuku, approximately four miles north of the project area. The average rainfall in the Kahuku area is between 39 and 59 inches per year.

Potential Impacts and Mitigation Measures

Climatic conditions are not expected to have a significant affect on the project. To the extent possible, construction will be scheduled for the drier months to minimize the potential for soil erosion and runoff into the stream.

3.1.4 Natural Hazards

Tsunami and Floods

The State of Hawaii Civil Defense Tsunami Evacuation Zone Map and the Federal Emergency Management Agency (FEMA) Flood Insurance Rate Map (FIRM) indicate that the project area is vulnerable to tsunami and flood inundation.

The Tsunami Evacuation Zone Map shows that a portion of the site is within the tsunami hazard zone, which extends from the ocean to Kamehameha Highway. The nearest evacuation center is at Brigham Young University in Laie, approximately one mile north of the project site. The temporary detour road, which will be located *mauka* of Kamehameha Highway, is outside the tsunami hazard zone.

Figure 6 shows the Federal Emergency Management Agency (FEMA)'s Flood Insurance Rate Map (FIRM) designations (November 20, 2000). The Kokololio Stream bridge and the site of the temporary detour road area are in Zone X, areas outside the 100-year flood zone. The area just *makai* of Kamehameha Highway is within the 100-year flood zone, with a base elevation of 8 feet (zone AE). However, there will be no project construction within this area.

Hurricanes

The Hawaiian Islands may be 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 bring large amounts of rain with high winds. The storms generally contribute to localized flooding and coastal storm surges.

The project area is located on the windward side of Oahu, which is less vulnerable to hurricanes than the leeward and southern shores. However, the area can experience heavy rains, high winds and storm surges along the coast from hurricanes.

Seismic Activity

The Uniform Building Code (UBC) provides minimum design criteria to address potential for damages due to seismic disturbances. The UBC scale is rated from Seismic Zone 1 through Zone 4, with 1 the lowest level for potential seismic induced ground movement. Oahu has a Seismic Zone 1 designation.

Potential Impacts and Mitigation Measures

The project will not have a direct, indirect or cumulative impact on the occurrence or likelihood of natural hazards. The bridge structure will be designed to meet current seismic standards. The structure will also be designed to allow efficient storm water flow beneath the bridge, and to avoid debris build up under the bridge, which can cause flooding and overtopping during storm conditions.

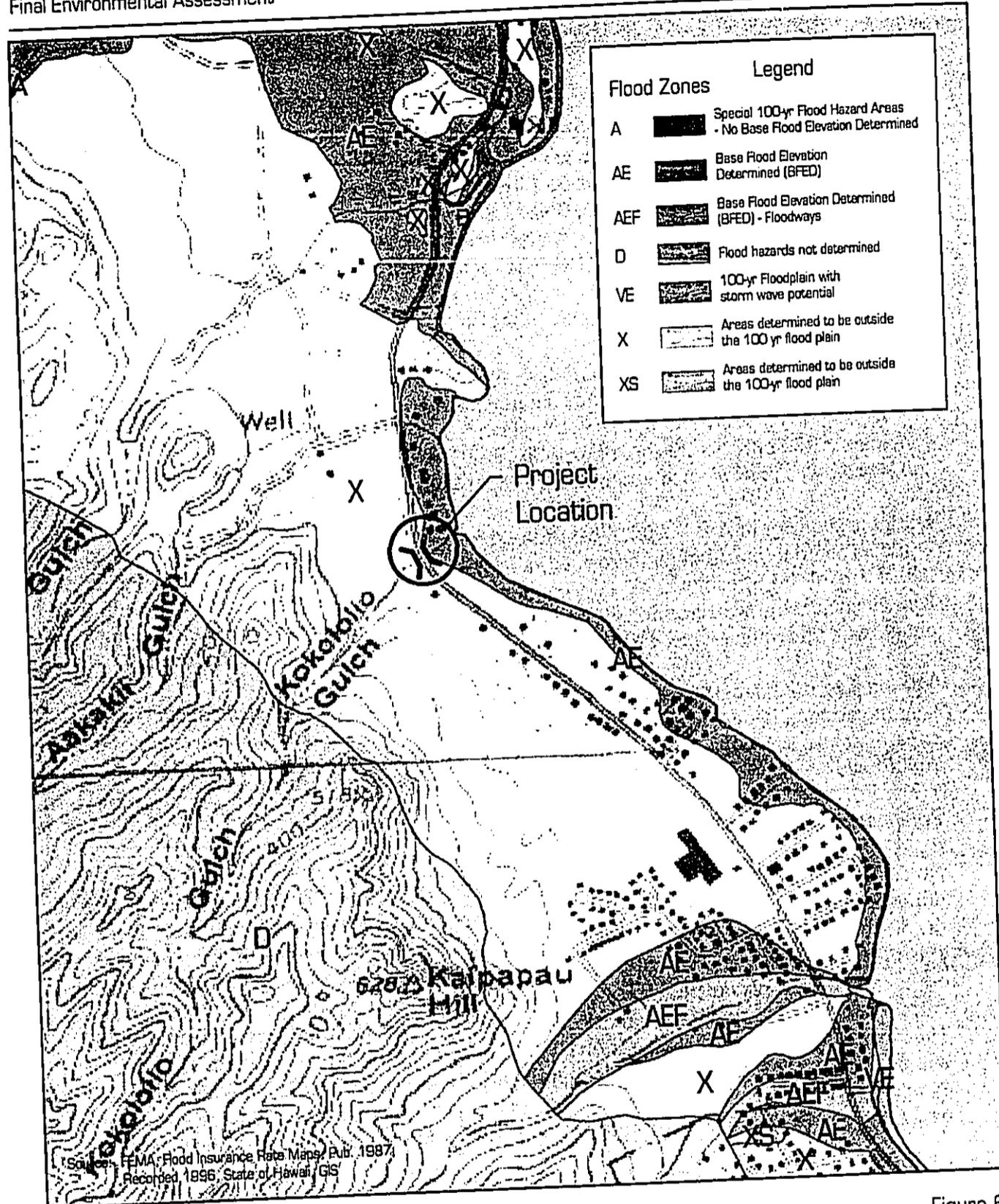


Figure 6
Flood Zone Map

During construction, the potential for impacts due to storm runoff will be addressed by use of erosion control measures in accordance with City and County of Honolulu, Rules relating to Soil Erosion Standards and Guidelines, 1999, and Erosion and Sediment Control Guide for Hawaii, Soil Conservation Service, 1968.

3.1.5 Water Resources

Existing Conditions

The proposed project will construct a highway bridge over Kokololio Stream. Kokololio Stream was not identified in the list of perennial streams in the Hawaii Stream Assessment (1990), nor was it surveyed in the 1978 Statewide Inventory of Streams (Timbol and Maciolek, 1978 in Kido, 2002). Prior to the field survey for this project, it was thought that this stream was possibly an intermittent or interrupted system that only flowed at flood stage.

During a site visit in April 2002, most of the stream bed was dry, and filled with cobbles, boulders and debris, although there was some standing water directly under the bridge (Kido, 2002). Kokololio Stream was also dry in the upstream and downstream areas surrounding the Kamehameha Highway crossing. The stream banks are well defined with the stream only about two to three feet wide. The stream bottom is a mix of boulders and shallow soil.

The existing drainage swale located west (*mauka*) of and parallel to Kamehameha Highway near the bridge directs surface drainage from upland areas to a detention basin south of the stream. It also serves as an overflow relief route for the stream during storm and flood conditions.

Potential Impacts and Mitigation Measures

No adverse impacts to water resources are anticipated because of the project. Existing stream drainage conditions will be retained through the duration of construction activities. Because the 50-foot wide span of the new bridge will extend beyond the existing bridge abutments, the existing abutments will remain in place during construction, maintaining the existing stream drainage pattern. The existing abutments will eliminate the need for additional shoring and a coffer dam. The existing bridge abutments will be removed prior to placing the bridge deck. The new bridge will not change or impact the stream drainage flow or pattern. The structure will be designed to adequately pass the anticipated rainfall runoff for a 100-year storm flow event, and the area upstream of the bridge will be opened up (widened) to allow the flow to pass under the bridge more efficiently. There will be no rise in the water surface elevation.

No dewatering is anticipated during construction. Excavation will be limited to the area above the water table, and therefore dewatering should not be required.

Overall, because it is an intermittent stream that only flows during very rainy periods, it is unlikely that the construction project will have any negative impact on stream water quality.

(Kido, 2002). Potential impacts on Kokololio Stream biota are discussed in Section 3.2.3 below.

The project will not adversely impact the drainage swale *mauka* of Kamehameha Highway. Existing drainage patterns will be maintained during and after the project. The new, 36-inch culvert that will be installed where the detour road crosses the drainage swale will remain in place after the detour road is removed.

A water quality monitoring plan will be submitted to the Department of Health, Clean Water Branch as part of the project's Section 401 Water Quality Certification. The contractor will comply with the requirements of Section 209—Water Pollution and Erosion Control in the "Hawaii Standard Specifications for Road, Bridge and Public Works Construction." The contractor will follow the guidelines in the "Best Management Practices Manual for Construction Sites in Honolulu" (May 1999) in utilizing Best Management Practices (BMP) to minimize erosion and runoff. Areas cleared of vegetation will be mulched to minimize runoff. Silt fences along the stream banks will be used to reduce erosion. After construction is completed, the stream banks and other graded areas will be revegetated.

3.1.6 Noise

Existing Conditions

The project is located in a rural area of Oahu, and the major generator of noise in the project vicinity is vehicular traffic. Because Kamehameha Highway is the primary transportation corridor in this area, traffic is continuous and ambient day time noise levels are intermittently above what would be expected in a rural area.

Noise sensitive uses in the area include several residences on the *makai* side of Kamehameha Highway.

Potential Impacts and Mitigation Measures

Construction of the detour road, demolition of the existing bridge and construction of the new bridge may generate high levels of noise that have a short-term impact on nearby residences.

Table 3-1 below summarizes expected noise levels from typical heavy construction equipment at a distance of 50 feet.

Table 3-1: Heavy Construction Equipment Noise Levels at 50-Foot Distance

Equipment Type	Generated Noise Level (dBA)
Bulldozer	88
Backhoe (rubber tire)	80
Front Loader (rubber tire)	80
Dump Truck	75
Concrete Truck	75
Concrete Finisher	80
Crane	75
Asphalt Spreader	80
Roller	80
Flat-bed Truck (18-wheel)	75
Scraper	89
Trenching Machine	85

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

According to the National Cooperative Highway Research Program, Transportation Research Board, National Research Council, average noise levels for a drill rig at a distance of 50 feet is 88 dBA.

The nearest residences are located downstream (*makai*) of the bridge. The closest home is on the Kaaawa side, about 100 feet from the proposed bridge. There is also a residence on the Laie side of the bridge, about 175 feet away. The residences on the *mauka* side of the highway are more than 1,000 feet away from the bridge. As a result, although the residences will be impacted by construction period noise, the impact should not be significant.

Construction equipment and on-site vehicles that exhaust gas or air will be equipped with mufflers. Construction vehicles using roadways are required to satisfy the DOH's vehicular noise requirements.

If, during some construction activity, noise exceeds, or is expected to exceed the DOH's "maximum permissible" property line noise levels, a permit will be obtained from the DOH to operate vehicles, construction equipment, power tools, etc. that emit noise levels in excess of "maximum permissible" levels. To reduce the noise impact of construction activities, all work will be conducted during the daytime hours.

Occupational exposure to noise from construction equipment will be reduced by requiring construction workers to wear appropriate hearing protection, in accordance with the Occupational Safety and Health Administration (OSHA) guidance.

Construction activities can also cause vibration that spreads through the ground. Vibrations diminish in strength with distance from the source. Generally, it is the unpredictability and unusual nature of a vibration source, rather than the vibration level itself, that is likely to result in complaints. According to the Transportation Research Board, the human threshold of perception is PPV 0.008 to 0.012 inches/second. Caisson drilling typically results in peak particle velocity (PPV) of 0.089 inches/second at a distance of 25 feet. The nearest residences are about 175 feet away from the project site, and temporary vibration impacts, although perceptible, should not cause major impact.

There will be no indirect or cumulative noise or vibration impacts. There are no other noise-generating projects (federal, State, County) that have been identified in the vicinity.

3.1.7 Air Quality

Existing Conditions

The State Department of Health operates a network of air quality monitoring stations located at various locations on Oahu. These stations monitor five regulated pollutants, including

- Particulate Matter \leq 10 microns (PM₁₀)
- Carbon Monoxide (CO)
- Ozone (O₃)
- Sulfur Dioxide (SO₂)
- Total Suspended Particulate Matter (TSP)

The closest air quality monitoring station on the windward side of Oahu is located in Waimanalo, about 20 miles southeast of the project area. Air quality data from the Waimanalo monitoring station gives an indication of ambient air quality levels in the project area. The State has monitored PM₁₀ levels in Waimanalo since 1971, and the data indicates that particulate levels are within federal and State standards.

In general, it can be assumed that air quality in the project area is good. The predominant source of air pollution is vehicular traffic that produces carbon monoxide (CO) and carbon dioxide (CO₂). However, persistent trade winds contribute to favorable climatic conditions for air quality, and there are no large, stationary industrial facilities in the immediate vicinity. Although agricultural activities in rural areas can contribute to air pollution, there is no large scale agricultural activity in the vicinity.

Potential Impacts and Mitigation Measures

Construction activities will result in temporary and localized impacts on air quality in areas adjacent to the construction site. Equipment used during the construction phase will emit exhaust and airborne particulates, and construction work will produce dust. Due to the low background levels of pollutants in the area and favorable climatic conditions, increased vehicular emissions are not expected to be significant. Construction vehicles will arrive and

depart during non-peak traffic hours. The contractor will use vehicles that are properly maintained.

During demolition and construction, the contractor will sprinkle water, as necessary, to control dust. Transported or stored soils will be covered. Areas graded and cleared of vegetation will be revegetated as soon as possible to reduce dust.

Construction activities will employ fugitive dust emission control measures in compliance with provisions of the State DOH Rules and Regulations (Chapter 43, Section 10), and Hawaii Administrative Rules (HAR), Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33 on Fugitive Dust.

No indirect or cumulative impacts on air quality are anticipated. There are no other known development projects in the project vicinity.

3.1.8 Hazardous Wastes and Materials

Existing Conditions

There are no known hazardous materials or waste or petroleum products stored at the project site. There are no known sources of contamination in the project area.

Potential Impacts and Mitigation Measures

The project will not have short or long-term impacts due to hazardous materials, waste or petroleum products. Construction materials, including petroleum products, will be stored in a confined area away from the Kokololio Stream. All demolition debris and waste will be removed from the project area. All hazardous materials will be disposed of in accordance with local and State regulations.

The contractor will develop a contingency plan to control accidental spills of petroleum products. Material and equipment necessary for spill clean up will be kept on site. Materials will not be dumped into the stream during clearing and construction activities. Any accidental spills of toxic hazardous materials will be reported to the appropriate State or local government agencies.

No indirect or cumulative impacts are anticipated, as there are no other known projects or large planned developments in the vicinity or along the Kokololio Stream.

3.2 BIOLOGICAL ENVIRONMENT

3.2.1 Flora

A botanical resources assessment was completed for the project (Char and Associates, 2002) and is included as Appendix A. The primary objectives of the survey were to:

1. prepare a general description of the vegetation on the project site;
2. search for threatened and endangered species, as well as species of concern; and
3. identify areas of potential environmental problems or concerns, and propose appropriate mitigation measures.

Existing Conditions

There are no threatened or endangered plant species present in the project area. The vegetation around the existing bridge and stream is periodically maintained, and consists of low clumps of Guinea grass (*Panicum maximum*) and California grass (*Brachiaria mutica*), one to two feet tall. On the *makai* side of the bridge, hau (*Hibiscus hiliaceus*) forms a dense thicket on the Hauula-side of the stream bank.

On the north (Hauula) side of the stream near the proposed detour road, the vegetation consists of open, grassy pasture land or mowed areas. California grass along with smaller patches of ricegrass (*Paspalum scrobiculatum*), Guinea grass, and sourgrass (*Digitaria insularis*) are abundant to common. A number of fence lines cross this area, with scattered to dense clumps of sourbush (*Pluchea carolinensis*), 5 to 12 feet tall. There is a row of Java plum trees (*Syzygium cumini*) 40 to 60 feet tall near a fence and dirt road. A few bread fruit or ulu trees (*Artocarpus altilis*) and coconut palms (*Cocos nucifera*) and patches of banana (*Musa X paradisiaca*) are also found near the proposed detour road.

On the south (Laie) side of the stream, the detour road alignment passes near a vegetable farm and a small shed. In the area where the detour road joins Kamehameha Highway, there is a row of tall ironwood trees (*Casuarina equisetifolia*) and hau thickets.

Other plants that occur throughout the site in rather large numbers include wedelia (*Sphagneticola trilobata*), white flowered Spanish needle (*Bidens alba* var. *radiata*), Bermuda grass (*Cynodon dactylon*), Hilo grass (*Paspalum conjugatum*), Spanish clover (*Desmodium incanum*), koa haole (*Leucaena leucocephala*), honohono (*Commelina diffusa*), kolomona (*Senna surattensis*), and ivy gourd (*Coocinia grandis*).

In the area where the temporary detour road crosses the stream, the vegetation consists of dense mats of California grass and Guinea grass with scattered clumps of sourbush shrubs, young Java plum trees, and ivy gourd vines.

Potential Impacts and Mitigation Measures

The vegetation along the existing bridge and on the route of the temporary detour road is composed almost exclusively of introduced species. Introduced or alien species are all those brought to the Hawaiian Islands by humans, intentionally or accidentally, after western contact, i.e., the arrival of Captain Cook in 1778. A few plants such as the breadfruit and coconut are originally of Polynesian introduction prior to western contact. Only two native

species were observed on the site—*hau* and ricegrass. Both species are indigenous and are found throughout Hawaii and the Pacific.

None of the plants found during the field studies is threatened or endangered, or a species of concern. No trees on the City and County's list of exceptional trees (Ordinance 79-91, 81-32) occur on the site.

Given these findings, the proposed project is not expected to have a significant negative impact on the botanical resources in the area. There are no botanical reasons to impose any restrictions, conditions or impediments to the proposed project.

When the replacement bridge is complete and the detour road removed, vegetation will be replanted to resemble its current, pre-construction condition. Disturbance to vegetation during construction will be minimized to the extent possible. Upon completion of the bridge, areas disturbed by construction adjacent to the stream will be grassed over as soon as possible to prevent sediment runoff into the stream. Bermuda grass, which already occurs on the site, may be used for revegetation.

3.2.2 Terrestrial Fauna

A survey of terrestrial avifauna and mammals was conducted in May 2002 (Ohashi, 2002) and is included as Appendix B. The study assessed the wildlife resources in the vicinity of the proposed bridge and proposed detour road, and evaluated whether the project would adversely impact any important wildlife resources in the area.

Existing Conditions

There are no threatened or endangered species present in the project area. During the site visit, the usual complement of non-native birds common to the lowlands of Oahu were identified. The birds identified during the site visit are listed in the table below.

Pratt (1993) and Soehren (1996) also list Chestnut manikin (*Lonchura malacca*), Red avadavat (*Amandava amandava*) and the Japanese bush warbler (*Cettia diphone*) as occurring in the area. These species were not identified at the site.

No waterbirds or shorebirds were seen at the site and none were expected, due to the dense vegetation in the riparian zone and *hau* thickets choked the channel between the shoreline and the bridge. The cattle egret was observed flying overhead along the coastline. Pacific golden plovers migrate to breeding grounds in the arctic in April, therefore none were observed. It is possible that the black-crowned night heron (*Nycticorax nycticorax hoactli*) would use the channel to forage, but only next to the bridge where it was more open. However, there were no signs of heron use observed at the site.

Common Name	Scientific Name	Number of individuals counted during 8-minute count period
Cattle egret	<i>Bubulcus ibis</i>	1
Spotted dove	<i>Streptopelia chinensis</i>	2
Zebra dove	<i>Geopelia striata</i>	4
Red vented bulbul	<i>Pnycnonotus cafer</i>	9
White rumped Shama	<i>Copsychus malabaricus</i>	(observed outside the count period)
Common myna	<i>Acridotheres tristis</i>	4
Japanese white eye	<i>Zosterops japonicus</i>	3
Northern cardinal	<i>Cardinalis cardinalis</i>	1
House finch	<i>Carpodacus mexicanus</i>	3
Common waxbill	<i>Estrilda astrild</i>	5
Nutmeg manikin	<i>Lonchura punctulata</i>	25
Java sparrow	<i>Padda oryzivora</i>	5

No mongoose (*Herpestes auropunctatus*), cats (*Felis catus*), rats (*Rattus spp*) or mice (*Mus musculus*) were observed during the field survey, but they are expected in the area. According to one of the residents in the area, feral pigs (*Sus scrofa*) are common.

No threatened or endangered species were identified in the project area. The site does not fall within the proposed critical habitat of the Oahu Elepaio (*Chasiempis sandwichensis ibidis*). The closest area inhabited by the elepaio is Kahana Valley, over five miles to the southeast.

Potential Impacts and Mitigation Measures

The proposed action will not likely adversely impact any native species or species of concern, nor any threatened or endangered species. The proposed improvements to the bridge and detour road will affect an area immediately adjacent to Kamehameha Highway, residential and pastoral lots which are already highly disturbed.

The terrestrial habitat in the project area is not suitable for native forest birds, as there are no native trees. The stream channel is presently too narrow and overgrown to be of much value to waterbirds, shorebirds or wading birds. Cutting trees along the bank could create more suitable conditions for black-crowned night herons. There is currently little emergent vegetation to provide cover for the common moorhen. The stream channel is too narrow and overgrown for stilts and the water not deep enough for Hawaiian coots. Hawaiian ducks could use the area, but none were present during the survey.

There will be no direct, indirect or cumulative impact on threatened or endangered species.

3.2.3 Stream Biology

A visual assessment and evaluation of potential stream impacts was conducted by Michael H. Kido in 2002 (Appendix C). The areas upstream and downstream of the Kamehameha Highway crossing were visually assessed in April 2002 with regard to:

1. Physical and hydrological condition of the stream and its channel;
2. Potential adverse impacts of proposed construction activities on the stream and its biota, and
3. Whether or not a formal biological assessment of the stream was required.

Existing Conditions

The visual assessment confirmed Kokololio Stream is an intermittent system which only flows with any frequency during very rainy periods. During the site survey, the stream bed was nearly completely dry under the bridge, as well as in both upstream and downstream directions. No alien poeciliid fishes (*Poeciliidae*) were observed in any of the few small stagnant pools of water near the bridge crossing. These hardy and prolific fish would most likely be present in at least small numbers if there was any robust frequency to the intermittent stream flow over time.

In addition, the mouth of the stream was totally blocked by a sand berm at the ocean end (Kokololio/Mahakea Beach). The stream bed was mostly dry from the *hau* grove below the bridge to the sand berm at the beach. There was one shallow standing pool of water approximately 50 meters from the ocean, however. This pool was inhabited by what appeared to be native *aholehole* (*Kuhlia sandwicensis*), a marine finfish species typically found in estuarine areas of Hawaiian streams. The large amount of marine debris in and around the stream channel and banks suggested that recent high tides had washed a considerable distance up the stream channel. This would account for the standing water and the presence of the *aholehole* trapped in the pool.

Given that the stream is an intermittent system, a formal bioassessment study of the stream was not deemed necessary.

Potential Impacts and Mitigation Measures

It is highly unlikely that the proposed construction will have any negative impact on the stream or its biota. The following mitigation measures will be utilized during construction activities to eliminate the potential for negative impact to the stream or near shore areas.

1. Construction activities will be scheduled for the drier summer months when the probability for heavy rains will be reduced;
2. Any site grading required with heavy equipment will be scheduled with an awareness of the short term weather outlook, and grading should be halted when heavy rains occur;

3. Precautions will be taken to minimize physical disturbance to the stream channel and its banks through soil erosion and/ or deposition;
4. All materials used during construction will be completely removed from the area upon project completion.

3.3 SOCIO-ECONOMIC ENVIRONMENT

3.3.1 Population and Employment

Existing Conditions

The project is located in the Koolauloa census district, which had a population of 18,443 in 1990 and 18,899 in 2000. The project site is located within Census Tract 102.01, encompassing Hauula and Kaaawa. This census tract had a population of 4,608 persons in 1990, and 5,312 in 2000, a 15.3 percent increase over a ten year period (Department of Business, Economic Development and Tourism, 2002).

Laie is the largest community in the Koolauloa District, and is located just north of the project area. Laie is the religious and educational center of the Church of Jesus Christ of Latter Day Saints (Mormon Church). The church temple and the campus of Brigham Young University—Hawaii (BYU-H) are located in Laie. The church and university own and operate the Polynesian Cultural Center, which provides income and jobs to students and local residents. Economic activity in this community revolves around the church, the university and the cultural center.

In contrast to the population growth in Hauula, the population in Laie (Census Tract 102.02) decreased by 11.9 percent between 1990 and 2000. During this period, the population decreased by 826 persons, from 6,926 persons in 1990 to 6,100 in 2000.

In 2000, the racial breakdown in the Hauula census tract was 25 percent white, 32 percent native Hawaiian and Pacific Islander and 9 percent Asian. The nearby Laie census tract had similar percentages for white and Asian populations, but had a higher percentage (38 percent) of Hawaiian and Pacific Islanders. The population in the entire Koolauloa census district was 30 percent white, 27 percent Hawaiian and Pacific Islander, and 13 percent Asian.

Median household income in the Hauula census tract was \$40,300, compared to \$49,063 in the Laie census tract, and \$46,610 for the Koolauloa census district as a whole.

Potential Impacts and Mitigation Measures

The project will not have a significant short or long-term impact on population, employment or other socioeconomic conditions. The reconstruction of the Kokololio Stream bridge will not induce economic or population growth or change in the Hauula or Laie communities, or the Koolauloa District as a whole. The project will not impact important recreational areas or other resources utilized by the community.

While there may be some short-term inconvenience to morning and evening commuters on Kamehameha Highway, it will be minor and temporary. The project will improve the condition of the bridge and provide a bikeway and pedestrian walkway. These improvements will have a long-term positive impact on traffic flow, and on pedestrian and bicyclist safety.

During construction, public beach access will be maintained. The three private driveways on the *makai* side and two on the *mauka* side of Kamehameha Highway will be maintained throughout the construction period. The existing shed on the *mauka* side of Kamehameha Highway will be relocated or replaced.

There will be no significant indirect or cumulative impact on the area.

3.3.2 Parks and Public Facilities

Existing Conditions

Public and recreational facilities in the area include a number of popular beaches and beach parks on the *makai* side of Kamehameha Highway. Some of the popular beaches in the vicinity include Mahakea Beach, Kokololio Beach, Kakela Beach, Bath Tub Beach and Pounders Beach. The City and County's Kokololio Beach Park is located across Kamehameha Highway, just south of the bridge. This beach park, formerly owned by the Mormon Church, was acquired by the City in 1990. A large parking lot fronts Kamehameha Highway near the project site. The beach park includes five camp sites, barbeque and restroom facilities.

Potential Impacts and Mitigation Measures

The project will not impact any park or recreational facilities in the area. During project construction, access to beaches and parks will be maintained.

3.3.3 Scenic and Visual Resources

Existing Conditions

The project vicinity along Kamehameha Highway between Hauula and Laie is predominately rural in character. At the approach to the bridge, there is heavy vegetation on both sides of Kamehameha Highway. The density and height of the vegetation on the *mauka* side largely obscures views of the mountains from the road. Likewise, on the *makai* side of Kamehameha Highway, dense *hau* thickets block the ocean from view. There are no significant view planes or scenic vistas in the immediate project area.

Potential Impacts and Mitigation Measures

There will not be a significant impact on visual resources. Project-related construction activities will temporarily alter the visual environment in the project area. Grading and contouring, construction of a new detour road and demolition of the existing bridge and utility pole relocation will have a minor visual impact. However, in the long-term, impacts to scenic and visual resources will be minimal. The low key appearance of the proposed bridge will be compatible with the surrounding rural area, and will not be visually obtrusive. No scenic view planes will be impacted. Some vegetation on the *mauka* side of the road will be cleared for construction of the detour road, which may open up views of the mountains. The area will be revegetated when the detour road is removed.

There will be no indirect or cumulative impacts on visual resources in the area.

3.3.4 Archaeological, Historic, and Cultural Resources

Existing Conditions

An archaeological assessment for the proposed project was completed (Cultural Surveys Hawaii, 2002) and is included as Appendix D. The study scope included:

1. Historical research to construct a history of land use and determine if archaeological sites have been recorded on or near the project area.
2. Field inspection of the project area to identify any surface archaeological features and assess the potential for impact to such sites. To identify any sensitive areas requiring further investigation or mitigation before the project proceeds.
3. Preparation of a report including the results of the historical research and field work, with recommendations for further work, if appropriate, and recommendations for mitigation of archaeologically sensitive areas.

The historical research identified numerous archaeological studies over the last 20 years in the vicinity of the Kokololio Bridge. These studies have recorded extensive cultural layers, subsurface features and human burials. Seven human burials were reported from inventory survey and data recovery work at Kokololio Beach Park in 1992, and seven additional burials were recorded during archaeological monitoring in 1994. Several burials have been reported from Kakela Beach Park and Pounders Beach Park, both less than 1 km from the project area. Archaeological monitoring work for a sewer line project along Kamehameha Highway encountered two sites with burials within 50 meters of Kokololio Bridge.

The historical background research shows that the Kokololio coastal area was a locus of temporary habitations, and the beach area was a significant area for burial. Overall, substantial Hawaiian activity in the immediate vicinity in pre-contact times is indicated.

An archaeological field assessment of the project area was conducted in 2002 by Cultural Surveys Hawaii. Historic features noted during the assessment include a modern wall

(probably less than 50 years old) and a drainage canal paralleling Kamehameha Highway on the *mauka* side. No surface traditional Hawaiian sites or features were observed.

Potential Impacts and Mitigation Measures

Archaeology

The project area lies in close proximity to documented cultural layers with associated human burials. Although the current land surface appears to have been extensively grubbed over the last century, there is strong indication that additional cultural layers and/or human burials may exist in the underlying substrate.

A letter dated October 21, 2002 from DLNR-SHPD to Cultural Surveys Hawaii (Appendix E) stated, "...given the record of previous finds made in and around the area of the existing bridge, as you have documented, we believe an inventory survey with subsurface testing should be conducted along the proposed corridor of the temporary bypass road prior to any construction work. Once the survey is completed, a report of findings should be submitted to our office for review. If significant historic sites are present, and if they will be adversely affected by the proposed bridge replacement, then mitigation plans will need to be developed in consultation with our office."

In subsequent communication with DLNR-SHPD, it was clarified that most of the detour road corridor will be filled, not excavated. Excavation and grading will be limited to areas adjacent to the existing stream, and is associated with opening up the stream approach to the new bridge. In an October 25, 2002 phone conversation with Dr. Sara Collins, she indicated that in light of this additional information, DLNR-SHPD would recommend subsurface testing within the graded areas only. Further work, if any, would depend on the findings. A follow-up letter stating this was received during the Draft EA review period, and is included in Appendix E and in Chapter 7.

Historic Architecture

The project will demolish the existing Kokololio Stream Bridge, also known as the Laie Bridge. In a letter dated September 9, 2002 (Appendix E), the DLNR-SHPD indicated that the bridge is not identified as historically significant in the 1996 Draft Historic Bridge Inventory and Evaluation (Spencer Mason Architects, 1996). As such the DLNR-SHPD concurs with the replacement of the bridge with the stipulation that the bridge is photo-documented using Historic American Buildings Survey/Historic American Engineering Record (HABS/HAER) standards. This includes photos of the two approaches and the two side elevations. The photo documentation will be completed to the satisfaction of the DLNR-SHPD architecture branch prior to substantial alteration of the existing bridge.

Cultural Impact Evaluation

Act 50 requires that a proposed action's impact(s) on the cultural practices of a community be disclosed in the environmental review process. Although no formal cultural impact assessment was completed for the project, Cultural Surveys Hawaii provided a good faith evaluation of cultural impacts based on available information (Appendix D). That evaluation concluded that the only potential for impact to cultural resources is the possibility of impacts to burials and/or archaeological resources. This would be mitigated through the subsurface testing and coordination with DLNR-SHPD as discussed above.

Should any burials or other significant findings be discovered, the Koolauloa representative to the Oahu Island Burial Council will also be notified and invited to make a site visit to the construction site, subject only to safety concerns.

The temporary access road will be located on currently unused land, and will not impact any ongoing cultural or recreational activities. Access to the Kokololio Beach Park and adjacent residences will be maintained throughout the construction period.

3.4 TRAFFIC AND CIRCULATION

Existing Environment

Kamehameha Highway (Highway 83) is the only roadway linking the windward Oahu community of Kaneohe to Haleiwa on the north shore. Kamehameha Highway serves sixteen rural communities, including Hauula, where the project is located. The road is on the National Highway System (NHS) and is classified as a principal arterial. The highway is owned and maintained by the State of Hawaii and has a 50 foot right-of-way and 10-foot wide lanes in either direction. In the project area, the road has two-lanes and a posted speed limit of 35 miles per hour.

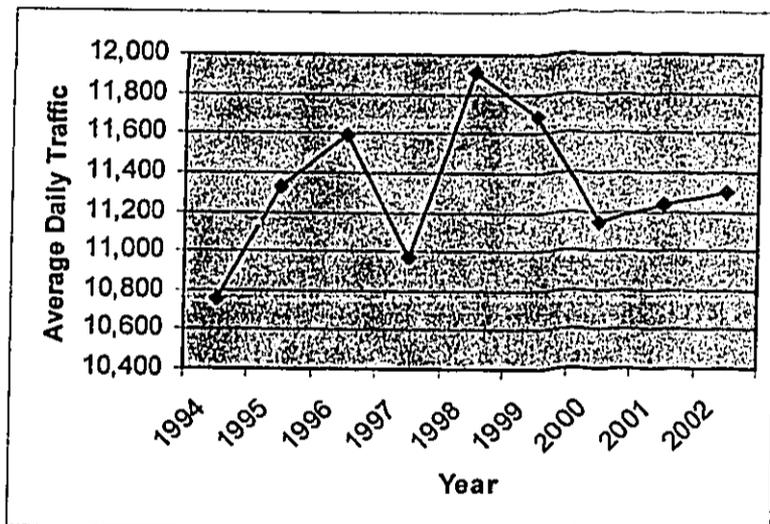
Traffic patterns across the bridge are influenced by early morning and afternoon commuters. During the morning peak hours, traffic is generally heavy in the south-bound direction, as commuters travel from Hauula and Laie to and through Kaneohe town to work. Heavy morning traffic begins as early as 5:30 am. In the afternoon, traffic is heavier in the north-bound direction. (Personal communication with Sgt. Sue, Honolulu Police Department, Kahuku Substation).

Average daily traffic for Kamehameha Highway in the project area is shown in the table and graph below. The figures show traffic counts in both north and south-bound directions. From 1994 to 1998, average daily traffic showed a gradual increase, except for a slight (unexplained) dip in 1997. During this period, average daily volume increased by over 1,000 vehicles, or about 10 percent. Unfortunately, no traffic counts were available for years the next four years (1999 through 2001). However, traffic data for 2002 indicates average daily traffic of 11,300, which seems to indicate that volumes have remained relatively stable from 1998 to present.

Kamehameha Highway Average Daily Traffic

Year	Number of vehicles
1994	10,756
1995	11,323
1996	11,588
1997	10,971
1998	11,909
1999	11,688
2000	11,139
2001	11,235
2002	11,300

Source: State of Hawaii Department of Transportation



The State's bicycle master plan, Bike Plan Hawaii, identifies Kamehameha Highway through the Koolauloa District as a "proposed signed shared use roadway" (formerly known as "bike routes"). This type of roadway involves a paved shoulder (to the right of edge stripe) that is at least four feet wide, as well as bicycle signage.

Potential Impacts and Mitigation Measures

The proposed project will not have a significant long-term impact on traffic volume or traffic patterns. The project will not increase vehicular traffic or increase roadway capacity. The project will increase roadway safety in the area, as the new bridge will meet current design and safety standards, and will include a separate bike and pedestrian lane. The addition of a bike and pedestrian lane will be a significant safety improvement, as the existing bridge is narrow and driver visibility limited by the curve in the road.

During the construction period, there will be minor and temporary impacts on area traffic, primarily due to the transport of construction equipment and materials to and from the site. This will occur mainly during the detour road and bridge construction phases.

The detour road will be completed during the first six to eight weeks of the project, after which traffic will be routed away from the existing bridge along the detour road. Initially, there could be some disruption to traffic while area motorists become familiar with the new detour route. The road will have a posted speed limit of 35 miles per hour, and will include access for pedestrian and bicycle traffic. Temporary pavement markings, signage, and highway lighting for the detour road will be provided.

Construction of the new bridge will not occur until the temporary detour road is completed. During the construction period, access to all existing driveways will be maintained. A traffic control plan will be developed and submitted to the State DOT Highways Division Traffic Branch for review and approval. This plan will ensure that access to adjoining properties will be maintained and access provided for emergency vehicles. Prior to construction, residents in the vicinity, as well as the Neighborhood Board will be notified of the project plans and schedule.

3.5 PUBLIC UTILITIES

Existing Conditions

Existing utilities in the project area include electrical, telephone and cable lines, and water pipelines. Electrical lines run above ground on the *mauka* side of Kamehameha Highway, and water lines run below the existing bridge on the highway. There is no sewer system in the area.

Potential Impacts and Mitigation Measures

Electrical and communication (telephone, cable) poles and lines above-ground may need to be temporarily relocated for the detour road and the phased construction of the replacement bridge. After completion of the bridge replacement, utility poles and lines will be relocated to their final locations. The project engineers will obtain all required utility agreements and coordinate the relocation with the utility companies.

3.6 PUBLIC HEALTH AND SAFETY

3.6.1 Police Services

Police Services are provided by the Honolulu Police Department's Kahuku Substation. This substation serves the area from Kaaawa to Kawela Bay, and has four to five officers assigned per watch. A representative from the police substation commented that the planned bridge widening and pedestrian/bike lane would be an improvement over existing conditions. The current bridge is narrow and its location at a curve results in a potentially hazardous situation

for both drivers and pedestrians. He also noted that most traffic accidents in the area are due to speeding vehicles colliding with other vehicles turning into driveways. (Personal communication with Sgt. Sue, Kahuku Substation, 17 September 2002). Plans concerning traffic flow in the area will be submitted to the Police Department District 4 (Kaneohe) for review.

3.6.2 Fire Services

The project area is serviced by the Honolulu Fire Department's Hauula Station #15, located on Kamehameha Highway, between Hauula Elementary School and the Hauula Beach Park. This station serves the area from Kahana Bay to the Polynesian Cultural Center in Laie. Station staffing is six firefighter positions. A representative from the Hauula Fire Station said that the department had no concerns, provided that the temporary detour road could accommodate the weight of their two fire fighting vehicles, an engine truck (45,000 lbs.) and tanker truck (52,000 lbs.). (Personal communication with Capt. Alan Carvalho, Hauula Station #15, 17 September 2002).

Potential Impacts and Mitigation Measures

Necessary measures to assure public health and safety will be provided throughout construction. The contractor will provide, install, and maintain all necessary signs, lights, flares, barricades, markers, cones, and other safety facilities along the detour road. These safety precautions will conform with the "Rules and Regulations Governing the Use of Traffic Control Devices at Work Sites on or Adjacent to Public Streets and Highways," as adopted by the Highway Safety Coordinator and the U.S. Federal Highway Administration. The contractor will also maintain access by emergency vehicles through the construction site for the duration of the project. The access road will be constructed to accommodate the fire department's tanker truck.

The Fire Communication Center will be notified regarding any interruption in the existing fire hydrant system during the project.

4 LAND USE PLANS, POLICIES, AND CONTROLS

4.1 HAWAII STATE PLAN

The Hawaii State Plan, Chapter 226, HRS, serves as a written guide for the future long-range development of the State by identifying goals, objectives, policies, and priorities and by providing a basis for determining priorities and allocating limited resources, such as public funds, services, manpower, land, energy, water, and other resources. Relevant State Plan goals, objectives, policies and priority guidelines are noted below.

The proposed project would be in conformance with State Plan objectives and policies for facility systems – in general,

“(a) Planning for the State’s facility systems in general shall be directed towards achievement of the objective of water, transportation, waste disposal, and energy and telecommunication systems that support statewide social, economic, and physical objectives.”

“(b) To achieve the general facility systems objective, it shall be the policy of this State to: (1) Accommodate the needs of Hawaii’s people through coordination of facility systems and capital improvement priorities in consonance with state and county plans...; and “(3) Ensure that required facility systems can be supported within resource capacities and at reasonable cost to the user.” (Section 22-14, HRS).

4.2 STATE LAND USE CLASSIFICATION

The State Land Use Commission, pursuant to Chapter 205 and 205A, HRS and Chapter 15-15, Hawaii Administrative Rules, is empowered to classify all lands in the State into one of four land use districts: urban, rural, agricultural and conservation. As shown in Figure 7, the bridge itself the areas *makai* of Kamehameha Highway are in the Urban District. The *mauka* temporary detour road will be located in both the Urban and the Agricultural Districts.

4.3 CITY AND COUNTY OF HONOLULU LAND USE REGULATIONS

General Plan

The General Plan for the City and County of Honolulu (1992) is a comprehensive statement of long-term objectives and policies for Oahu over a 20 year period. The General Plan addresses eleven areas of concern, including population; economic activity; the natural environment; housing; transportation and utilities; energy; physical development and urban design; public safety; health and education; culture and recreation; and government operations and fiscal management.

The General Plan of the City and County of Honolulu designates the Koolauloa area as a rural area, with a predominantly "country" character, and that only limited development in established communities should be allowed.

The proposed project is consistent with the following policies and guidelines of the 1992 General Plan Objectives and Policies, Chapter V, Transportation and Utilities:

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

Policy 1: Develop and maintain an integrated ground-transportation system consisting of the following elements and their primary purposes:

- b. Roads and highways-for commercial traffic and travel in non-urban areas;
- c. Bikeways-for recreational activities and trips to work, schools, shopping centers, and community facilities

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

Objective D: To maintain transportation and utility systems which will help Oahu continue to be a desirable place to live and visit.

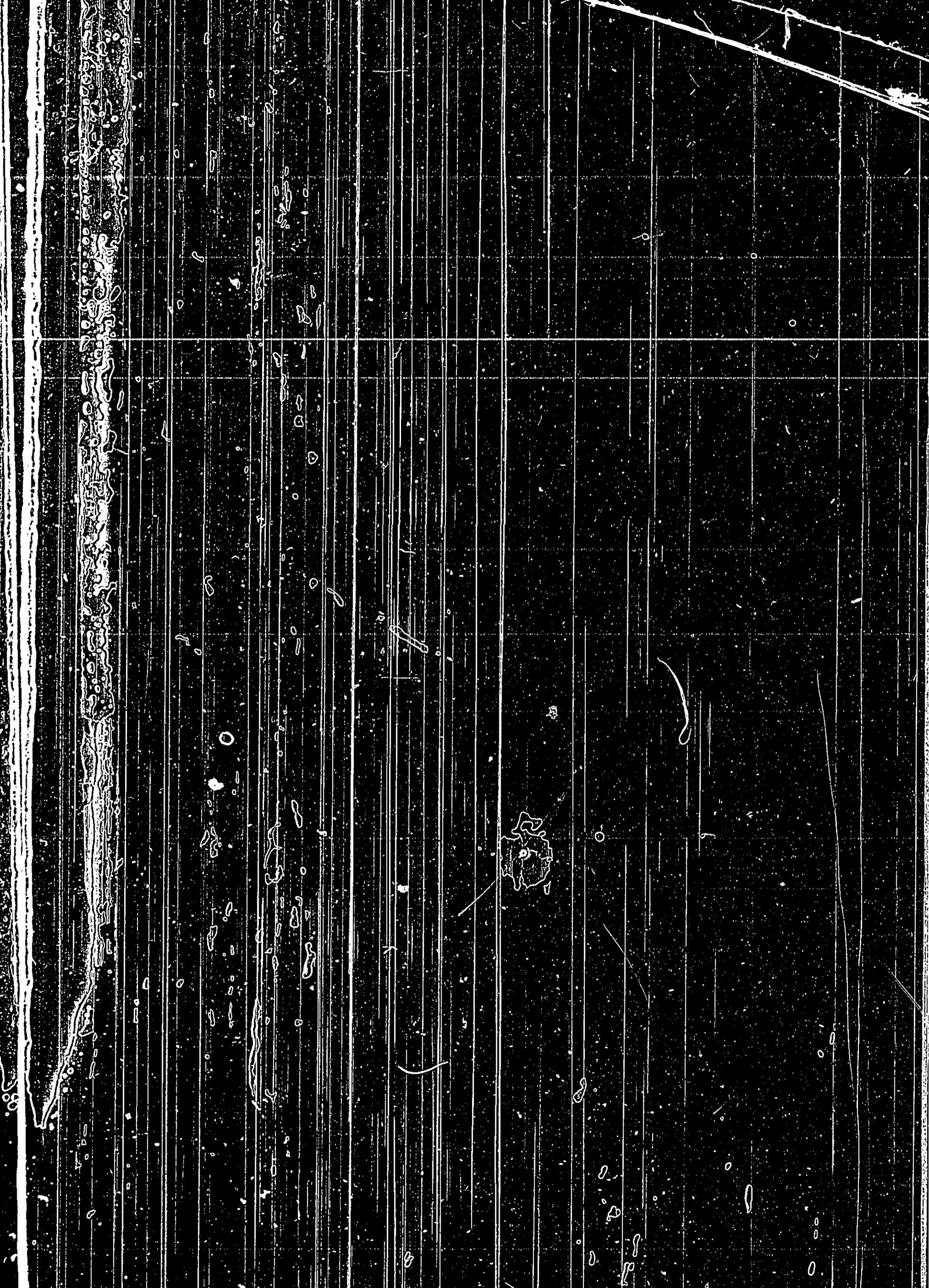
Policy 1: Give primary emphasis in the capital- improvement program to the maintenance and improvement of existing roads and utilities.

Koolauloa Sustainable Communities Plan

Development Plans, a mandate of the City Charter, have been adopted by ordinance for eight geographic regions of the island since 1985. The proposed project falls within the Koolauloa planning area, and is covered by the Koolauloa Sustainable Communities Plan (October 1999).

The Koolauloa Sustainable Communities Plan envisions the community as experiencing very little growth through the year 2020. The "country will remain country," with managed growth occurring in Laie and Kahuku. The vision for Koolauloa is to preserve the region's rural character and its natural, cultural and scenic resources.

Chapter 4 of the Sustainable Communities Plan addresses public facilities and infrastructure. Guidelines for transportation systems note that the area's transportation system should provide:



CORRECTION

THE PRECEDING DOCUMENT(S) HAS
BEEN REPHOTOGRAPHED TO ASSURE
LEGIBILITY
SEE FRAME(S)
IMMEDIATELY FOLLOWING

The General Plan of the City and County of Honolulu designates the Koolauloa area as a rural area, with a predominantly "country" character, and that only limited development in established communities should be allowed.

The proposed project is consistent with the following policies and guidelines of the 1992 General Plan Objectives and Policies, Chapter V, Transportation and Utilities:

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

Policy 1: Develop and maintain an integrated ground-transportation system consisting of the following elements and their primary purposes:

- b. Roads and highways-for commercial traffic and travel in non-urban areas;
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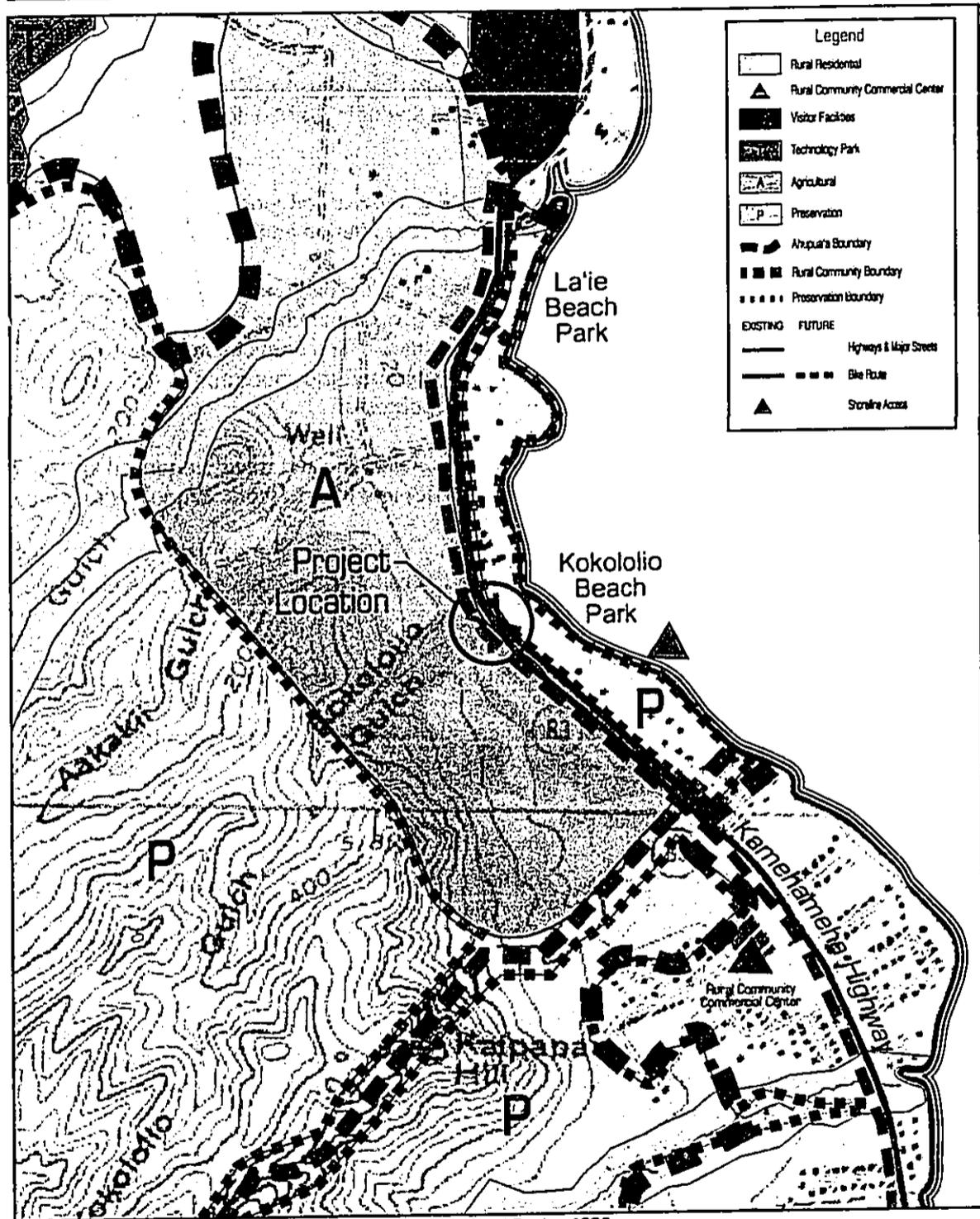
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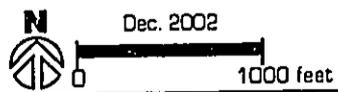
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Chapter 4 of the Sustainable Communities Plan addresses public facilities and infrastructure. Guidelines for transportation systems note that the area's transportation system should provide:



Source: Ko'olau Loa Sust. Comm. Plan, CSC of Honolulu, DPP Adopted October 1999

Figure 8



Sustainable Communities Plan

1. Adequate access between communities, shopping and recreation areas in Koolauloa
2. Highway improvements, developed in consultation with Koolauloa communities, which emphasize highway safety as the highest priority while providing efficient, pleasant travel experiences.

Chapter 4 notes that the community has stated a priority need for safety improvements to the narrow, winding Kamehameha Highway through Koolauloa.

The Sustainable Communities Plan land use and public facilities designations for the area are shown in Figure 8. The *mauka* side of Kamehameha Highway is designed for Agricultural use, and the *makai* side of the highway for Preservation. A future bike route is noted along Kamehameha Highway in this area. The project will support the future bike route designation by providing a separated bike lane on the new bridge where none exists now. The public facilities map also identifies the Kokololio Beach Park as a shoreline access area. The project will not impact the Kokololio Beach Park or shoreline access.

The proposed replacement of Kokololio Stream bridge is consistent with the Sustainable Communities Plan's vision for Koolauloa. The project will not generate or encourage an increase in traffic or population, but will improve roadway and travel safety on Kamehameha Highway.

County Zoning

The City and County of Honolulu's zoning designations for the project area are shown in Figure 9. The area *mauka* of Kamehameha Highway is designated AG-2, General Agricultural District. The *makai* side of Kamehameha Highway is designated Country.

According to the Land Use Ordinance (LUO) (City and County of Honolulu, 1999), the purpose of agricultural districts is to maintain a strong agricultural economic base, to prevent unnecessary conflicts among incompatible uses, to minimize the cost of providing public improvements and services, and to manage the rate and location of physical development consistent with the city's adopted land use policies. The intent of the AG-2 general agricultural district is to conserve and protect agricultural activities on smaller parcels of land.

The purpose of the country district is to recognize and provide for areas with limited potential for agricultural activities, but for which the open space or rural quality of agricultural lands is desired. The district is intended to provide for some agricultural uses, low density residential development and some supporting service and uses.

The proposed bridge replacement project is consistent with the intent of both the AG-2 and country zoning designations.

4.4 SPECIAL MANAGEMENT AREA

The State of Hawaii Chapter 205A HRS authorizes the counties to establish Special Management Areas (SMA) to protect and preserve the coastal zone in Hawaii. The City and County of Honolulu regulates actions taking place in the SMA under Chapter 25, Revised Ordinances of Honolulu.

As shown in Figure 9, Kamehameha Highway is the Special Management Area (SMA) dividing line, with the highway itself and areas *makai* of the highway within the SMA and most areas *mauka* of the highway outside the SMA. This project will require a Special Management Area use permit (SMP). The bridge replacement will take place within the roadway right-of-way. Although road repair in the right-of-way is usually exempt from a SMP, because the bridge will be completely replaced by a new structure, a SMP is required. In addition, a portion of the detour road may be within the SMA. A SMP will be obtained prior to construction.

5 DETERMINATION, FINDINGS AND REASONS SUPPORTING THE ANTICIPATED DETERMINATION

5.1 DETERMINATION

Based on the information and analysis in this document, the proposed project is not expected to result in significant social, economic, cultural, or environmental impacts. The State of Hawaii Department of Transportation has issued a finding of no significant impact (FONSI), and recommends that an Environmental Impact Statement (EIS) not be required.

5.2 FINDINGS AND REASONS SUPPORTING THE DETERMINATION

This Environmental Assessment, prepared in accordance with Chapter 343, HRS, as amended, has found that the potential for impacts associated with the proposed action will not be significant. Potential environmental impacts will be temporary and are not expected to adversely impact the long-term environmental quality of the area.

The potential effects of the proposed project were evaluated based on the significance criteria in Section 11-200-12 (Hawaii Administrative Rules, revised in 1996). An agency will determine an action may have a significant impact on the environment if it meets any of the following criteria:

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

The proposed project is not expected to adversely impact natural or cultural resources. The bridge replacement improvements are located within the roadway right-of-way. The temporary detour road is outside the right-of-way, but no grading or excavation is proposed along most of the detour road route. Grading is limited to areas immediately adjacent to the stream. The DLNR-SHPD has requested that subsurface testing be conducted within the area proposed for grading. If any significant historic sites will be adversely affected by the project, mitigation plans will be developed in consultation with DLNR-SHPD. There are no significant natural resources, or threatened and endangered species or their habitats in the project area. The project will not result in the loss or destruction of natural or cultural resources.

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

The proposed project does not curtail the range of beneficial uses of the environment. The construction of the *mauka* detour road will temporarily curtail use of that land for the duration of bridge construction. However, the area is currently unused, and the detour road will be removed and the site restored to its original condition once the bridge is completed.

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

The proposed project is consistent with the environmental policies, goals, and guidelines defined in Chapter 344, HRS. The replacement of an existing substandard bridge is consistent with the Chapter 344 policy of enhancing the quality of life by "*establishing communities which provide a sense of identity, wise use of land, efficient transportation...in harmony with the natural environment...*" [§344-3 (2)(C)]. The project is also consistent with the guidelines on Transportation, which "*Encourage transportation systems in harmony with the lifestyle of the people and environment of the State*" and the guidelines to "*... provide safe and convenient accommodations for their users.*" [§344-4(6)].

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

The project is intended to improve roadway conditions and the safety of the highway bridge crossing Kokololio Stream. A separated pedestrian walkway and bike lane will be included on the new bridge, thereby increasing safety. This will have a positive impact on the social welfare of the community. Short-term negative impacts are associated with traffic disruptions and construction noise and dust in the immediate vicinity of construction.

5. **Substantially affects public health;**

The proposed project will be completed in accordance with Federal, State and City and County of Honolulu rules and regulations governing public safety and health. Potential public health impacts would involve air quality, noise and traffic during the construction period. These impacts will be short-term, and can be minimized or brought to negligible levels by the mitigation measures described in this document. The contractor will comply with applicable environmental standards and procedures associated with the project's permits and approvals.

6. **Involves substantial secondary impacts, such as population changes or effects on public facilities.**

The proposed project is part of a federally-funded, State of Hawaii Department of Transportation (HDOT) effort to upgrade its substandard roadway bridges. The project will improve roadway safety, but will not increase roadway capacity, encourage population growth or increase demand on public facilities.

7. Involves substantial degradation of environmental quality.

The project will not involve substantial degradation of environmental quality. The Kokololio Stream bridge is within the roadway right-of-way, which has been disturbed repeatedly in the past. Bridge construction activity will include use of best management practices to prevent erosion and runoff into the stream, and debris will not be allowed to enter the stream area. The project does not include dewatering. Construction period noise and dust will be controlled. Following completion of the bridge, the stream banks will be revegetated to minimize erosion. The location of the temporary detour road has also been disturbed in the past, and is not habitat to any threatened or endangered species. Upon completion of the replacement bridge, the temporary road will be removed, and the area returned to its pre-construction condition.

8. Is individually limited but cumulatively has considerable effect on the environment, or involves a commitment for large actions.

There are no other known projects or development in the project vicinity. The project does not involve a commitment to larger action, and will not have significant effects on local, regional, and island-wide land use and/or population. There are no foreseeable cumulative impacts on the environment or commitment for larger action.

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

There are no rare, threatened or endangered species or their habitats in the project area. The project will not impact any of these species.

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

There will be short-term impacts on the air quality and noise levels inside and adjacent to the construction area. Mitigation measures will be implemented to minimize these construction-related impacts. Best management practices will be used during construction to prevent adverse impacts on Kokololio Stream. Dewatering will not be required. There will be no long-term impacts on air, water quality or ambient noise levels.

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

The bridge and the temporary detour road location are not located within the 100-year flood plain, as indicated on the Flood Insurance Rate Maps. Kokololio Stream is an intermittent stream that only appears to flow during storm conditions. During bridge construction, the existing stream channel will be maintained, and the project will not alter the stream flow or drainage patterns in the area. There are some flood prone areas makai of the bridge (Zone AE,

100 year flood, 8-foot elevation), but this area will not be affected by the project. The project will not impact other environmentally sensitive areas.

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

The project will not affect scenic vistas or view planes. The replacement bridge will be of similar size and scale as the existing bridge.

13. Requires substantial energy consumption.

Construction of a detour road and replacement bridge will require energy levels that are typical for a construction project of this type. No extraordinary energy consumption is anticipated.

6 REFERENCES

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- City and County of Honolulu, Department of General Planning. *General Plan: Objectives and Policies*. 1992.
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- _____. *Land Use Ordinance*. May 1999.
- Cultural Surveys Hawaii, Inc. *An Archaeological Assessment for the Proposed Replacement for Kokololio Bridge, Laie, Ahupuaa, Koolauloa, Oahu*. April 2002.
- _____. *Cultural Impact Evaluation for the Kokololio Bridge Replacement Project*. October 2002.
- Federal Emergency Management Agency. Flood Insurance Rate Map, effective date November 20, 2000.
- Geolabs, Inc. *Letter Report to Mitsunaga & Associates, Inc., Subject: Kokololio Stream Bridge Preliminary Recommendations*. May 4, 2002.
- Kido, Michael H. *Kokololio Stream Bridge Replacement Project, Oahu, Visual Assessment and Evaluation of Potential Impacts*. May 2002.
- Ohashi, Tim J. *Wildlife Survey, Kokololio Bridge Replacement, Kamehameha Highway, Hauula, Oahu, Hawaii*. May 16, 2002.
- State of Hawaii, Commission on Water Resource Management and the National Park Service. *Hawaii Stream Assessment, A Preliminary Appraisal of Hawaii's Stream Resources*. December 1990.
- State of Hawaii Department of Transportation, Highways Division. *Project Assessment Report, Kamehameha Highway Kokololio Stream Bridge Replacement, M.P. 20.21*. May 2000.
- _____. *Final Environmental Assessment and Finding of No Significant Impact, Malaekahana Stream Bride Replacement, Kamehameha Highway, Kahuku, Koolauloa, Oahu, Federal-Aid Project No. BR-083-11(27)*. November 1997.

United States Department of Agriculture, Soil Conservation Service, In Cooperation with the University of Hawaii Agriculture Experiment Station. August 1972.
Soil Survey of Kauai, Oahu, Maui, Molokai and Lanai, State of Hawaii.

Wagner, W. L., D. R. Herbst, and S. H. Sohmer. 1990. *Manual of the Flowering Plants of Hawaii* (in Two Volumes). University of Hawaii Press and Bishop Museum Press, Special Publication 83.

Wagner, W. L. and D. R. Herbst. 1999. "Supplement to the Manual of the Flowering Plants of Hawaii" in Wagner, W. L. et al. *Manual of the Flowering Plants of Hawaii, Revised Edition* (in Two Volumes). University of Hawaii Press and Bishop Museum Press, pp. 1855-1918.

Personal communication with Sgt. Sue, Kahuku Substation, 17 September 2002

Personal communication with Capt. Alan Carvalho, Hauula Station #15, 17 September 2002

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

7.1 LIST OF PREPARERS

This Environmental Assessment (EA) was prepared for the State of Hawaii Department of Transportation (SDOT) by Kimura International, Inc. The following individuals were involved in the preparation of the EA.

Name	Contribution/Specialization
Kimura International, Inc.	
Glenn T. Kimura	Overall Project Manager
Leslie Kurisaki	Environmental Assessment, primary author
Subconsultants	
Mike Kido	Stream Biology
Winona Char, Char & Associates	Botanical Resources
Tim J. Ohashi	Wildlife Biology
David Shideler, Cultural Surveys Hawaii	Archaeology, Cultural Resources, Cultural Impact Assessment
Kenneth Santana, Mitsunaga & Associates	Civil Engineering, infrastructure analysis

7.2 INDIVIDUALS AND AGENCIES TO BE CONSULTED DURING PREPARATION OF THE ENVIRONMENTAL ASSESSMENT

The following agencies and organizations were either consulted during development of the draft environmental assessment (DEA) and/or were provided a copy of the DEA for review and comment. A total of 16 comment letters were received. Those who submitted review comments are noted below with an asterisk (*). Copies of comments received and responses are attached.

Federal

*U.S. Army Engineer Division
U.S. Federal Highway Administration

U.S. Environmental Protection Agency
U.S. Fish & Wildlife Service

State

Department of Business, Economic Development & Tourism, Office of Planning
Department of Hawaiian Home Lands
*Department of Land and Natural Resources
*Department of Land and Natural Resources, State Historic Preservation Division
*Department of Health, Environmental Management Division
*Office of Environmental Quality Control
Department of Human Services
Department of Transportation, Highways Division
*Office of Hawaiian Affairs
Oahu Metropolitan Planning Organization (OMPO)

City and County of Honolulu

*Board of Water Supply
*Department of Design and Construction
*Fire Department
*Department of Planning & Permitting
*Department of Parks and Recreation

*Police Department
Department of Environmental Services
*Department of Facility Maintenance
*Department of Transportation Services

Community and Other Organizations

*Hawaiian Electric Company
*Verizon Hawaii
Koolauloa Neighborhood Board #28
Councilman Steve Holmes,
City Council District #2

Representative Colleen Meyer,
House District #46
Senator Bob Nakata, Senate District #23
Brigham Young University—Hawaii
Hawaii Reserve, Inc.

UNDA LINDLE
GOVERNOR



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
1600 KAPI'OLANI BOULEVARD, SUITE 1610
HONOLULU, HAWAII 96814

December 3, 2002

James Fu
State of Hawaii Department of Transportation
Highways Division, Bridge Design
601 Kamokila Blvd, Room 611
Kapolei, Hawaii 96707

Dear Mr. Fu:

SUBJECT: National Historic Preservation Act Section 106 Review - Draft Environmental Assessment Kokololio Stream Bridge Replacement (Federal/FHWA)
LA 'Iemalo' o, Ko'olauloa, O'ahu
TMK: (1) 5-5-001-007 & 055: 5-5-006:011

LOG NO: 31236 ✓
DOC NO: 0211EJ24

Thank you for the opportunity to comment on the DEA for the proposed Kokololio Stream bridge replacement project. We received the DEA on November 8, 2002, and provide the following comments.

We believe that the draft EA in Section 3.3.4 adequately summarizes our comments and discussions regarding the project's effect on significant historic sites. Our comments recommending that an archaeological inventory survey with subsurface testing be conducted within the graded areas only (not proposed filled areas), will be included in the final EA.

Should you have any questions about archaeology, please feel free to call Sara Collins at 692-8026 or Elaine Jourdan at 692-8027. Should you have any questions about architectural matters, please feel free to contact Tonia Moy at 692-8030. Should you have any questions regarding burial matters please feel free to call Kai Markell at 587-0008.

Aloha,

Gilbert Coloma-Agaran
State Historic Preservation Officer

Eljck

c: OEQC
Leslie Kurisaki, Kimura International, Inc. 1600 Kapi'olani Boulevard, Suite 1610,
Honolulu, HI 96814
Mr. A. Van Horn Diamond, Chair, O'ahu Island Burial Council
Mr. Kai Markell, Director, Burial Sites Program

UNDA LINDLE
GOVERNOR



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

DEC 2 4 2002

TO: GILBERT COLOMA-AGARAN, ACTING DIRECTOR
DEPARTMENT OF LAND AND NATURAL RESOURCES

FROM: GLENN M. OKIMOTO
INTERIM DIRECTOR OF TRANSPORTATION

SUBJECT: KAMEIAMEHA HIGHWAY
KOKOLOLIO STREAM BRIDGE REPLACEMENT, PROJECT NO. 83C-05-01
DRAFT ENVIRONMENTAL ASSESSMENT
YOUR LETTER DATED DECEMBER 3, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated December 3, 2002, stating that the Draft EA adequately summarizes your comments and discussions regarding the project's effect on significant historic sites. Your recommendation that an archaeological inventory survey with subsurface testing be conducted within the graded areas only (i.e., not proposed filled areas) will be included in the Final EA.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

c: Leslie Kurisaki, Kimura International

GLENN M. OKIMOTO
INTERIM DIRECTOR

YOUR LETTER TO:
HWY-DB 2.8979



LINDA LAROLE
COORDINATOR OF HEALTH

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

December 10, 2002

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

Dear Mr. Kimura:

Subject: Draft Environmental Assessment (DEA)
Kokololo Stream Bridge Replacement
Hauula, Koolauloa District, Oahu
Tax Map Key: 5-5-006:011 & 001; 5-5-001:007 & 055

Thank you for the opportunity to review and comment on the subject proposal. The DEA was routed to the various branches of the Environmental Health Administration. We have the following comments:

Clean Water Branch (CWB)

1. The applicant should contact the Army Corps of Engineers to identify whether a federal permit (including a Department of Army permit) is required for this project. A Section 401 Water Quality Certification is required for "Any 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..." pursuant to Section 401(a)(1) of the Federal Water Pollution Act (commonly known as the "Clean Water Act").
2. A National Pollutant Discharge Elimination System (NPDES) general permit coverage is required for the following discharges to waters of the State:
 - a. Discharge of storm water runoff associated with industrial activities, as defined in Title 40, Code of Federal Regulations, Sections 122.26(b)(14)(i) through 122.26(b)(14)(ix) and 122.26(b)(14)(xi);

Mr. Glenn T. Kimura
December 10, 2002
Page 2

- b. Discharge of storm water runoff associated with construction activities that involve the disturbance of five (5) acres or greater, including clearing, grading, and excavation;
- c. Discharge of treated effluent from leaking underground storage tank remedial activities;
- d. Discharge of once through cooling water less than one million gallons per day;
- e. Discharge of hydro-testing water;
- f. Discharge of construction dewatering effluent;
- g. Discharge of treated effluent from petroleum bulk stations and terminals; and
- h. Discharge of treated effluent from well drilling activities.

Any person requesting to be covered by a NPDES general permit for any of the above activities should file a Notice of Intent with the Department of Health, Clean Water Branch (CWB) at least thirty (30) days prior to commencement of any discharges to State waters;

3. If construction activities involve the disturbance of one acre or greater, including clearing, grading, and excavation, and will take place or extend after March 10, 2003, an NPDES general permit coverage is required for discharges of storm water runoff into State waters; and
4. The applicant may be required to apply for an individual NPDES permit if there is any type of activity in which wastewater is discharged from the project into State waters.

If you have any questions, please contact the Clean Water Branch at (808) 586-4309.

Sincerely,

June F. Harrigan - lum

JUNE F. HARRIGAN-LUM, MANAGER
Environmental Planning Office

c: CWB

BERNARD J. CAVETTANO
GOVERNOR

HERBERT E. COLMAN-AGUIAR
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

ERIC T. IMAHONO
DEPUTY DIRECTOR

LYNNEL T. MISHENKA
ASSISTANT DIRECTOR OF
PLANNING AND RESOURCE
MANAGEMENT

ADAMIC REYNOLDS
COMMISSIONER OF WATER RESOURCES

DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. Box 621
HONOLULU, HAWAII 96809

NOV -8 2002

RECEIVED
DEC 09 2002

L-4006
Suspense Date: 12/4/02

MEMORANDUM

TO: Division of Aquatic Resources(DD)
 Division of Forestry & Wildlife
 Na Ala Hele Trails
 Division of State Parks
 Division of Boating & Ocean Recreation
 Commission on Water Resource Management(DD)

FROM: Charlene E. Unoki, Acting Assistant Administrator
Land Division

SUBJECT: Draft environmental assessment, Kokololio Stream Bridge Replacement, Hauula, Oahu, tax map keys: (1) 5-5-6:11, 1 and 5-5-1:7, 55

Please review the attached document covering the subject matter and submit your comments (if any) on Division letterhead signed and dated within the time requested above. Should you need more time to review the subject matter, please contact Nick Vaccaro at Ext. 7-0438.

**Note: One (1) copy of the document is available for review in the Land Division Office, Room 220. Sign out slips are available at the counter for those who wish to review the document for a 24-hour period.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments. Thank you.

We have no comments.

Signed: *W. Vaccaro*
Date: _____

() Comments are attached.

NOV 15 2002

HERBERT E. COLMAN-AGUIAR
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES

ERIC T. IMAHONO
DEPUTY DIRECTOR

LYNNEL T. MISHENKA
ASSISTANT DIRECTOR OF
PLANNING AND RESOURCE
MANAGEMENT

ADAMIC REYNOLDS
COMMISSIONER OF WATER RESOURCES

DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. Box 621
HONOLULU, HAWAII 96809

NOV -8 2002

RECEIVED
DEC 09 2002

L-4006
Suspense Date: 12/4/02

MEMORANDUM

TO: Division of Aquatic Resources(DD)
 Division of Forestry & Wildlife
 Na Ala Hele Trails
 Division of State Parks
 Division of Boating & Ocean Recreation
 Commission on Water Resource Management(DD)

FROM: Charlene E. Unoki, Acting Assistant Administrator
Land Division

SUBJECT: Draft environmental assessment, Kokololio Stream Bridge Replacement, Hauula, Oahu, tax map keys: (1) 5-5-6:11, 1 and 5-5-1:7, 55

Please review the attached document covering the subject matter and submit your comments (if any) on Division letterhead signed and dated within the time requested above. Should you need more time to review the subject matter, please contact Nick Vaccaro at Ext. 7-0438.

**Note: One (1) copy of the document is available for review in the Land Division Office, Room 220. Sign out slips are available at the counter for those who wish to review the document for a 24-hour period.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments. Thank you.

We have no comments.

Signed: *M. Buck*
Date: _____

() Comments are attached.

NOV 15 2002



DEPARTMENT OF THE ARMY
U.S. ARMY ENGINEER DISTRICT, HONOLULU
FORT SHAFTER, HAWAII 96858-3440

NOTE TO
ATTENTION OF CEPOH-EC-T

December 2, 2002

Civil Works Technical Branch

Mr. James Fu
State of Hawaii
Department of Transportation
Highways Division
601 Kamehaha Boulevard, Room 611
Kapelele, Hawaii 96707

Dear Mr. Fu:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment (DEA) for the Kokololio Stream Bridge Replacement Project, Hauula, Oahu (TMKs 5-5-8: 11 and 5-5-1: 7, 55). The following comments are provided in accordance with Corps of Engineers authorities to provide flood hazard information and to issue Department of the Army (DA) permits.

a. Based on the information provided, a DA permit will be required for the project. Please contact Mr. Peter Galloway of our Regulatory Branch at (808) 438-8418 and refer to file number 200300135.

b. The flood hazard information provided on page 3-4 of the DEA is correct.

Should you require additional information, please contact Ms. Jessie Dobinich of my staff at (808) 438-8878.

Sincerely,

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

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097
December 17, 2002

GLENN M. OKAMOTO
WATER DIRECTOR

IN REPLY REFER TO
HWY-DB 2.8979

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

Attention: CEPOH-EC-T

Dear Mr. Pennaz:

Subject: Kamehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter dated December 2, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated December 2, 2002, and have the following responses to your comments:

- a. Your letter stated that based on the information provided, a DA permit will be required for the project. We have subsequently talked to Mr. Peter Galloway of your Regulatory Branch, and provided him with further information on the elevation of the stream channel invert. Based on this information, he indicated that it appears that a Section 10 permit is not required. However, he indicated that he still needs to check whether a Section 404 permit could be required. We will continue to be in contact with Mr. Galloway regarding potential DA permit requirements.
- b. Thank you for your acknowledgement that the flood information in the Draft EA is correct.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

Very truly yours,

Glenn M. Yasuji
GLENN M. YASUJI
Administrator
Highways Division

c: Leslie Kuisaki, Kimura International



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. BOX 511
HONOLULU, HAWAII 96809

December 6, 2002

LD-NAV
L-3225/4006/3384/3116/3176/3365/3372
KOKOLOLOSTREAM/KIMURA.RCM

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

Dear Mr. Kimura:

SUBJECT: Draft Environmental Assessment (DEA), Kokololo Stream Bridge Replacement, Haula, Island of Oahu, Hawaii
TR# 17/ 3-3-006: 011 & 001 and 3-3-001: 007 & 055

Thank you for the opportunity to review and comment on the subject matter.

A copy of the DEA covering the subject matter was distributed or made available to the following Department of Land and Natural Resources' Divisions for their review and comment:

- Division of Aquatic Resources
- Division of Forestry and Wildlife
- Division of Boating and Ocean Recreation
- Division of State Parks
- Engineering Division
- Commission on Water Resource Management
- Land Division Planning and Technical Services
- Oahu District Land Office

Attached herewith is a copy of the Engineering Division and Commission on Water Resource Management comments.

Based on the attached responses, the Department has no other comment to offer.

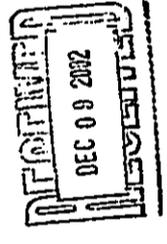
Should you have any questions, please feel free to contact Nicholas A. Vaccaro of the Land Division Support Services Branch at 587-0384.

Very truly yours,

Dierdre S. Mamiya
DIERDRE S. MAMIYA
Administrator

C: Oahu District Land Office

AQUATIC RESOURCES
BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE MANAGEMENT
CONSERVATION
DIVISION OF FORESTRY AND WILDLIFE
DIVISION OF BOATING AND OCEAN RECREATION
ENGINEERING DIVISION
LAND DIVISION
PLANNING AND TECHNICAL SERVICES
STATE PARKS
WATER RESOURCE MANAGEMENT



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT
P.O. BOX 511
HONOLULU, HAWAII 96809

November 18, 2002

TO: Dierdre Mamiya, Administrator
Land Division

FROM: Linnel T. Nishioka, Deputy Director
Commission on Water Resource Management (CWARM)

SUBJECT: Draft Environmental Assessment, Kokolo Stream Bridge Replacement

FILE NO.: L-4006

Thank you for the opportunity to review the subject document. Our comments related to water resources are marked below.

In general, the CWARM strongly promotes the efficient use of our water resources through conservation measures and the use of alternative methods to water resources whenever available, feasible, and there are no harmful effects to the ecosystem. Also, the CWARM encourages the protection of water recharge areas, which are important for the maintenance of streams and the replenishment of aquifers.

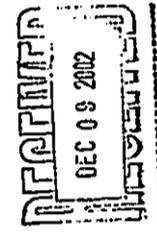
- We recommend coordination with the county government to incorporate this project into the county's Water Use and Development Plan.
- We recommend coordination with the Land Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- We are concerned about the potential for ground or surface water degradation/contamination and recommend that approvals for this project be conditioned upon a review by the State Department of Health and the developer's acceptance of any resulting requirements related to water quality.
- A Water Construction Permit and/or a Pump Installation Permit from the Commission would be required before ground water is developed as a source of supply for the project.
- The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit from the Commission would be required prior to use of this source.
- Groundwater withdrawals from this project may affect streamflow, which may require an instream flow standard amendment.
- We are concerned about the potential for degradation of instream uses from development on highly erodible slopes adjacent to streams within or near the project. We recommend that approvals for this project be conditioned upon a review by the corresponding county's Building Department and the developer's acceptance of any resulting requirements related to erosion control.
- If the proposed project includes construction of a stream diversion, the project may require a stream diversion works permit and amend the instream flow standard for the affected stream(s).
- If the proposed project alters the bed and banks of stream channels, the project may require a stream channel alteration permit.

OTHER:

This project requires a stream channel alteration permit pursuant to Hawaii Revised Statutes 174C-71.

If there are any questions, please contact David Higa at 587-0249.

BENJAMIN J. CASTINO
Director



CELESTINE S. COLMAGLIANO
Administrator
BRUCE S. ANDERSON
BERNARDY DING
CAYTON W. DELA CRUZ
JAMES H. HARRIS
HERBERT W. RICHARDS, JR.
LIMMEL T. NISHIOKA
Deputy Director

EDUARDO J. CAYTANO
GOVERNOR



EDUARDO J. CAYTANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. Box 621
HONOLULU, HAWAII 96809

RECEIVED

NOV 13 5:45

NOV -8 2002

L-4006
Suspende Date: 12/4/02

MEMORANDUM

TO: Division of Aquatic Resources(DD)
 Division of Forestry & Wildlife
 Na Ala Hele Trails
 Division of State Parks
 Division of Boating & Ocean Recreation
 Commission on Water Resource Management(DD)

Land Division Branches:
 Engineering Branch(DD)
 Planning & Technical (DD)
 Oahu District Land Office

FROM: Charlene E. Unoki, Acting Assistant Administrator
Land Division

SUBJECT: Draft environmental assessment, Kokololio Stream Bridge Replacement, Hauula, Oahu, tax map keys: (1) 5-5-6:11, 1 and 5-5-1:7, 55

Please review the attached document covering the subject matter and submit your comments (if any) on Division letterhead signed and dated within the time requested above. Should you need more time to review the subject matter, please contact Nick Vaccaro at Ext. 7-0438.

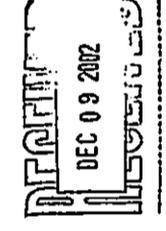
**Note: One (1) copy of the document is available for review in the Land Division Office, Room 220. Sign out slips are available at the counter for those who wish to review the document for a 24-hour period.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments. Thank you.

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

Signed: _____
Date: _____

EDUARDO J. CAYTANO
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES
LAND DIVISION
P.O. Box 621
HONOLULU, HAWAII 96809

NOV -8 2002

L-4006
Suspende Date: 12/4/02

MEMORANDUM

FROM: Division of Aquatic Resources(DD)
 Division of Forestry & Wildlife
 Na Ala Hele Trails
 Division of State Parks
 Division of Boating & Ocean Recreation
 Commission on Water Resource Management(DD)

Land Division Branches:
 Engineering Branch(DD)
 Planning & Technical (DD)
 Oahu District Land Office

TO: FROM: Charlene E. Unoki, Acting Assistant Administrator
Land Division

SUBJECT: Draft environmental assessment, Kokololio Stream Bridge Replacement, Hauula, Oahu, tax map keys: (1) 5-5-6:11, 1 and 5-5-1:7, 55

Please review the attached document covering the subject matter and submit your comments (if any) on Division letterhead signed and dated within the time requested above. Should you need more time to review the subject matter, please contact Nick Vaccaro at Ext. 7-0438.

**Note: One (1) copy of the document is available for review in the Land Division Office, Room 220. Sign out slips are available at the counter for those who wish to review the document for a 24-hour period.

If this office does not receive your comments on or before the suspense date, we will assume there are no comments. Thank you.

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

Signed: Charlene E. Unoki
Date: 11/13/02

LINDA LINGLE
GOVERNOR



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

DEPARTMENT OF HEALTH
PERMIT NUMBER:
HWY-DB 2.8979

December 17, 2002

TO: JUNE F. HARRIGAN-LUM, MANAGER
ENVIRONMENTAL PLANNING OFFICE
DEPARTMENT OF HEALTH

FROM: GLENN M. YASUI *Glenn M. Yasui*
ADMINISTRATOR, HIGHWAYS DIVISION

SUBJECT: KAMEHAMEHA HIGHWAY
KOKOLOLO STREAM BRIDGE REPLACEMENT, PROJECT NO. 83C-05-01
DRAFT ENVIRONMENTAL ASSESSMENT
YOUR LETTER DATED DECEMBER 10, 2002

Thank you for your review of the Kokoloio Stream Bridge Replacement Draft EA. We have received your letter dated December 10, 2002, and have the following responses to your comments:

Clean Water Branch

1. We have been in contact with the Mr. Peter Galloway of the Army Corps of Engineers Regulatory Branch. Mr. Galloway indicated that it appears that a Section 10 permit is not required. However, he needed to verify whether a Section 404 permit could be required. We will continue to be in contact with Mr. Galloway regarding potential DA permit requirements.
2. NPDES: A Notice of Intent to be covered by a NPDES general permit for storm water activities during construction and for dewatering will be submitted. No wastewater is anticipated to be discharged from the project into State waters.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

c: Leslie Kuisaki, Kimura International

LINDA LINGLE
GOVERNOR OF HAWAII



STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
155 SOUTH KING STREET
HONOLULU, HAWAII 96813
TELEPHONE: 832-8611 FAX: 832-8612
WWW: www.oehq.hawaii.gov

December 6, 2002

Mr. Glenn Okimoto, Interim Director
State Department of Transportation
869 Punchbowl Street
Honolulu, Hawaii 96813

Dear Mr. Okimoto:

Subject: Draft Environmental Assessment for the Kokoloio Stream Bridge Replacement, O'ahu
Thank you for the opportunity to review the subject document. We have the following comments.

1. Please consult with nearby residents, the Mormon Church, and the landowner of the right-of-way that DOT plans to purchase for this project.
2. Please disclose the anticipated noise and vibration levels that are expected from the drilling activities.

Should you have any questions, please call Jeyan Thirugnanam at 586-4185.

Sincerely,

Jeyan Thirugnanam
Jeyan Thirugnanam
Director

c: Kimura International

GENEVIVE SALMONSON
DIRECTOR

RECEIVED
DEC 09 2002
HONOLULU

LESLIE KUISAKI
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
609 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5087

REPLY REFER TO:
HWY-DB 2.8979

DEC 24 2002

TO: GENEVIEVE SALMONSON, DIRECTOR
OFFICE OF ENVIRONMENTAL QUALITY CONTROL

FROM: GLENN M. OKIMOTO
INTERIM DIRECTOR OF TRANSPORTATION

SUBJECT: KAMEHAMEHA HIGHWAY
KOKOLOLO STREAM BRIDGE REPLACEMENT, PROJECT NO. 83C-05-01
DRAFT ENVIRONMENTAL ASSESSMENT
YOUR LETTER DATED DECEMBER 6, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated December 6, 2002, and have the following responses to your comments:

1. The State Department of Transportation's Right of Way Branch will consult affected landowners after the project right of way is established and right of way maps are created. The temporary detour road will be constructed on vacant land owned by the Church of Jesus Christ of Latter Day Saints (Mormon Church). After removal of the temporary detour road, the property will be restored to its original condition.
2. Anticipated noise and vibration levels that are expected from the drilling activities will be discussed in the Final EA.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

c: Leslie Kuisaki, Kimura International

PHONE (808) 594-1188



STATE OF HAWAII
OFFICE OF HAWAIIAN AFFAIRS
711 KAPOLAHUA BOULEVARD, SUITE 509
HONOLULU, HAWAII 96813

FAX (808) 594-1866

November 19, 2002

HRD02823

State of Hawaii Department of Transportation
Highways Division, Bridge Design
601 Kamohala Blvd, Room 611
Kapolei, HI 96707

Attn: James Fu

Dear Mr. Fu,

Thank you for the opportunity to review the Environmental Assessment prepared for the Kokololio Stream Bridge Replacement. OHA has the following comments

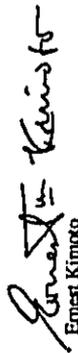
Past archaeological and excavation work in the vicinity of Kokololio Bridge have yielded a high number of burial sites and cultural deposits. Therefore, there is a high likelihood that burials may be encountered in this project, even though excavation will be minimal. OHA would like a cultural monitor, in addition to an archaeologist, to be present during excavation.

This project should also be presented to the O'ahu Island Burial Council and their comments should be reflected in the final EA.

The proper treatment of burials is a matter of grave importance. HDOIT should make every effort to ensure that if burials are discovered during this project they are treated in a culturally appropriate manner.

Please call Pus Aiu, Policy Analyst at 594-1931 or e-mail her at paiu@oha.org if you have further questions.

Sincerely,



Ernest Kimoto
Acting Director
Hawaiian Rights Division

LOCAL UNCLE
GUYBROCK



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
688 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5097
DEC 24 2002

GLENN M. OKIMOTO
INTERIM DIRECTOR

MESSAGE NO. 10
HWY-DB 2.8979

TO: ERNEST KIMOTO, ACTING DIRECTOR
HAWAIIAN RIGHTS DIVISION
OFFICE OF HAWAIIAN AFFAIRS

FROM: GLENN M. OKIMOTO
INTERIM DIRECTOR OF TRANSPORTATION


SUBJECT: KAMEHAMEHA HIGHWAY
KOKOLOLIO STREAM BRIDGE REPLACEMENT, PROJECT NO. 83C-05-01
DRAFT ENVIRONMENTAL ASSESSMENT
YOUR LETTER DATED NOVEMBER 19, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We received your letter dated November 19, 2002 on December 11, 2002. The following are responses to your comments:

1. Your letter requests that a cultural monitor, in addition to an archaeologist, be present during excavation. While we have no objection to the presence of a cultural monitor, there are some pragmatic concerns and issues. At present, the State has no guidelines or standards regarding the qualifications of a cultural monitor, or criteria for selection of an appropriate individual. However, in response to your request, we will consult with the State Historic Preservation Officer and Chair of the Oahu Island Burial Council, to seek their advice on this matter.

As an additional step to ensure the culturally appropriate treatment of any burial discoveries, the Koolau Loa regional representative to the Oahu Island Burial Council will be promptly informed of the discovery of any burials or other significant findings and invited to make a visit to the construction site (subject only to safety concerns).
2. Regarding presentation to the Oahu Island Burial Council, unfortunately, the December 2002 OIBC meeting has been cancelled. Cultural Surveys Hawaii, project consultant, has submitted a written request to the OIBC that the project be added to the OIBC's January 2003 agenda as an informational item. A representative from Cultural Surveys Hawaii will be present at that meeting to answer any questions about the project.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

c: Leslie Kuitsaki, Kimura International

BOARD OF WATER SUPPLY

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



November 29, 2002

Mr. James Fu
Highways Division, Bridge Design
Department of Transportation
State of Hawaii
601 Kamokila Boulevard, Room 611
Kapolei, Hawaii 96707

Dear Mr. Fu:

Subject: The Draft Environmental Assessment for the Kokololio Stream
Bridge Replacement, TMK: 5-5-6: 11, 1 and 5-5-1: 7 and 55.

The Board of Water Supply has a 16-inch water main in this area. The construction drawings
for the Kokololio Stream Bridge Replacement should be submitted for approval.

If you have any questions, please contact Joseph Kaakua at 527-6123.

Very truly yours,

for CLIFFORD S. JAMILE
Manager and Chief Engineer

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

LEGAL COUNSEL
COUNCIL



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

DEC 24 2002

Mr. Clifford S. Jamile
Manager and Chief Engineer
Board of Water Supply
City and County of Honolulu
630 South Beretania Street
Honolulu, Hawaii 96843

Dear Mr. Jamile:

Subject: Kamehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter dated November 29, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have
received your letter dated November 29, 2002, stating that the Board of Water Supply has a
16-inch water main in this area. The construction drawings for the project will be submitted to
your office for approval.

If you have any questions or other comments, please contact James Fu, Bridge Design Section
Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979
as noted above.

Very truly yours,

GLENN M. OKIMOTO
Interim Director of Transportation

cc: Leslie Kuisaki, Kimura International

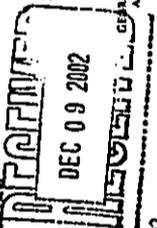
GLENN M. OKIMOTO
INTERIM DIRECTOR

BRIDGE REPORTS
HWY-DB 2.8979

DEPARTMENT OF DESIGN AND CONSTRUCTION
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET, 11TH FLOOR
HONOLULU, HAWAII 96813
PHONE: (808) 525-4544 FAX: (808) 525-4445
WEB SITE ADDRESS: www.cc.hawaii.gov

HOLEY HARRIS
MAYOR



RAE M. LOUI, P.E.
DIRECTOR
DEPUTY DIRECTOR
STATE T. TANASHIRO, P.E.
ASSISTANT DIRECTOR
CDP 02-0293

December 4, 2002

Mr. James Fu
Bridge Design Section
Highways Division
Department of Transportation
State of Hawaii
601 Kamokila Boulevard, Room 611
Honolulu, Hawaii 96707

Dear Mr. Fu:

Subject: Draft Environmental Assessment
Kokololio Stream Bridge Replacement, TMK: 5-5-1: 7 and 55: 5-5-6: 11

We have reviewed the above Draft EA and have no comments to offer.

If there are any questions, please contact Gregory Sue at 527-6304.

Very truly yours,

RAE M. LOUI, P.E.
Director

GS:dk

cc: OEQC
Kimura International

USCA UNCLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5007

DEC 24 2002

GLENN M. OKIMOTO
INTERIM DIRECTOR

IN REPLY REFER TO:
HWY-DB 2.8979

Ms. Rae M. Loui, P.E., Director
Department of Design and Construction
City and County of Honolulu
650 South King Street, 11th Floor
Honolulu, Hawaii 96813

Dear Ms. Loui:

Subject: Kamehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter dated December 4, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated December 4, 2002, and acknowledge that you have no comments.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

Very truly yours,

GLENN M. OKIMOTO
Interim Director of Transportation

c: Leslie Kuisaki, Kimura International

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
2375 KOAHLA STREET, SUITE 1423 • HONOLULU, HAWAII 96815-1869
TELEPHONE: (808) 531-7761 • FAX: (808) 531-7730 • INTERNET: WWW.HONOLULU.HI.GOV



ATTILIO K. LEONARDI
FIRE CHIEF
JOHN CLARK
POUTU FIRE CHIEF

December 9, 2002

Mr. James Fu
Highways Division, Bridge Design
State of Hawaii
Department of Transportation
601 Kamohila Boulevard, Room 611
Kapolei, Hawaii 96707

Dear Mr. Fu:

Subject: Kokololio Stream Bridge Replacement
Hauula, Koolauloa District, Oahu
Tax Map Keys: 5-5-006; 011 and 001; 5-5-001; 007 and 055

We received your letter dated November 6, 2002, requesting our comments regarding the above-mentioned project. The Honolulu Fire Department requires that the following be complied with:

1. Maintain fire apparatus access throughout the construction site for the duration of the project.
2. Notify the Fire Communication Center at 523-4411 regarding any interruption in the existing fire hydrant system during the project.

Should you have any questions, please call Battalion Chief Kenneth Silva of our Fire Prevention Bureau at 831-7778.

Sincerely,

Attilio K. Leonard
ATTILIO K. LEONARDI
Fire Chief

AKL/SK:hh

cc: Leslie Kurisaki, Kimura International, Inc.

LINDA LINKLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
869 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-6087

DEC 24 2002

Chief Attilio K. Leonard
Fire Department
City and County of Honolulu
3375 Koapaka Street, Suite H425
Honolulu, Hawaii 96819-1869

Dear Chief Leonard:

Subject: Kamehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter dated December 9, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated December 9, 2002, and have the following responses to your comments:

- a. Fire apparatus access will be maintained throughout the construction site for the duration of the project.
- b. The Fire Communication Center will be notified regarding any interruption in the existing fire hydrant system during the project.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

Very truly yours,

Glenn M. Okimoto
GLENN M. OKIMOTO
Interim Director of Transportation

cc: Leslie Kurisaki, Kimura International

GLENN OKIMOTO
INTERIM DIRECTOR

HWY-DB 2.8979

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU

430 SOUTH KING STREET • HONOLULU, HAWAII 96813
TELEPHONE (808) 523-4414 • FAC (808) 527-4743 • INTERNET: WWW.DPP.HONOLULU.HI.GOV

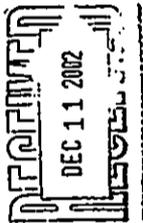


ERIC G. CRISPIN, AIA
Acting Director

LORETTA K.C. CHIE
SOP. JTY. DIRECTOR

2002/ELOG-3280 (pd)

December 10, 2002



Mr. James Fu
State of Hawaii Department of Transportation
Highways Division, Bridge Design
601 Kamehameha Blvd., Room 611
Kapolei, Hawaii 96707

Dear Mr. Fu:

Draft Environmental Assessment (DEA)
Kokololio Stream Bridge Replacement
Hauula, Koolauloa, Oahu
Tax Map Key 5-5-6: 1 and 11: 5-5-1: 7 and 55

We have reviewed the above DEA, and understand that the proposal involves demolition of the existing deteriorated bridge and construction of a new bridge, and construction of a temporary bridge and bypass road. In addition, the project lies within the Special Management Area (SMA). We offer the following comments:

- The site is within a portion of Kamehameha Highway which is under the jurisdiction of the State DOT. Therefore, we defer traffic comments to the DOT.
- As we noted in our November 4, 2002 letter to Kimura International, repair and maintenance of roads and highways within existing rights-of-way, and demolition and removal of structures, are ordinarily exempt from the provisions of Chapter 25, Revised Ordinances of Honolulu (ROH). However, in this case, the bridge will be completely replaced by a new bridge. Section 25-1.3 defines "development" as including "construction, reconstruction, demolition or alteration of the size of any structure". Thus, the proposal constitutes development as defined in the SMA ordinance. The DEA estimates the project cost at approximately \$4 million; therefore, a major Special Management Area Permit (SMP) is required.

Mr. James Fu
Page 2
December 10, 2002

Although the DEA indicates that the detour road will not be constructed within the SMA, it appears from the maps that a portion of the road may be within the SMA. However, the maps are not of a large enough scale to positively determine this. Maps should be drawn to a larger scale, and the SMA boundary line superimposed upon the site plan drawing(s). If it is determined that a portion of the road is within the SMA, the Final Environmental Assessment should disclose this.

- The bridge shall be designed to meet the City storm drainage standards; a drainage study will be required.

Thank you for the opportunity to comment on the DEA. Should you have any questions, please contact Pamela Davis of our staff, at 523-4807.

Sincerely yours,

ERIC G. CRISPIN, AIA
Acting Director of Planning
and Permitting

EGC:CS

cc: Kimura International, Inc.

docs93950

LESLIE KUISAKI
DIRECTOR



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

DEC 2 4 2002

GLENN M. OKIMOTO
INTERIM DIRECTOR

HWY-DB 2.8979

Mr. Eric G. Crispin
Director of Planning and Permitting
City and County of Honolulu
650 South King Street
Honolulu, Hawaii 96813

Dear Mr. Crispin:

Subject: Kamehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter dated December 10, 2002 (ELOG-3280 pd)

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated December 10, 2002, and have the following responses to your comments:

1. We acknowledge your comment that because the site is within a portion of Kamehameha Highway which is under the jurisdiction of the State DOT, you will defer traffic comments to the DOT. For the same reason, the bridge will be designed to meet State bridge design and storm drainage standards. A drainage study will be completed.
2. We have received a copy of your letter to Kimura International dated November 4, 2002. A major Special Management Area Permit will be obtained for this project.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

Very truly yours,

GLENN M. OKIMOTO
Interim Director of Transportation

c: Leslie Kuisaki, Kimura International

DEPARTMENT OF PARKS AND RECREATION
CITY AND COUNTY OF HONOLULU

1000 KALANIANA'OLE STREET, SUITE 303 • KAPOLEI, HAWAII 96707
TELEPHONE: (808) 941-3181 • FAX: (808) 942-3131 • INTERNET: WWW.PARKS.HONOLULU.HI



FORNAT HARRIS
DIRECTOR

WILLIAM D. BALFOUR, JR.
DIRECTOR

EDWARD T. KIMURA, DAZ
DIRECTOR

November 22, 2002

State of Hawaii Department of Transportation
Highways Division, Bridge Design
Attention: Mr. James Fu
601 Kamokila Blvd., Room 611
Kapolei, Hawaii 96707

Gentlemen:

Subject: Draft Environmental Assessment
Kokololio Stream Bridge Replacement

Thank you for the opportunity to review and comment on the Draft Environmental Assessment relating to the Replacement of the Kokololio Stream Bridge.

The Department of Parks and Recreation has no comment on the proposed project.

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

Sincerely,

WDB:mk (J. Reid, MS)
(11/27/02)

cc: Mr. Don Griffin, Department of Design and Construction
Ms. Leslie Kuisaki, Kimura International, Inc.

LINDA LINGLE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
889 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-5087

DEC 24 2002

GLENN M. OKIMOTO
INTERIM DIRECTOR

MARY MURPHY
HWY-DB 2.8979

Mr. William D. Balfour, Jr., Director
Department of Parks and Recreation
City and County of Honolulu
1000 Uluohia Street, Suite 309
Kapolei, Hawaii 96707

Dear Mr. Balfour:

Subject: Kamehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter dated November 22, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated November 22, 2002, and acknowledge that you have no comments.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

Very truly yours,

GLENN M. OKIMOTO
Interim Director of Transportation

c: Leslie Kuisaki, Kimura International

POLICE DEPARTMENT
CITY AND COUNTY OF HONOLULU
801 SOUTH BERETANIA STREET
HONOLULU, HAWAII 96813 - AREA CODE (808) 829-3111
<http://www.honolulu.gov>
<http://www.co.honolulu.hi.us>



JEREMY HARRIS
MAYOR

LEE D. DONOHUE
CHIEF

GLENN S. KAJIYAMA
PAUL D. PUTZLU
DEPUTY CHIEFS

OUR REFERENCE CS-KP

December 4, 2002

Mr. James Fu
Highways Division, Bridge Design
Department of Transportation
601 Kamokila Boulevard, Room 611
Kapolei, Hawaii 96707

Dear Mr. Fu:

Thank you for the opportunity to review and comment on the Draft Environmental Assessment for the Kokololio Stream Bridge Replacement.

The project will have a positive long-range impact on the services of the Honolulu Police Department. However, in spite of the temporary bridge plans, we are concerned about the overall impact that the construction phase may have on traffic conditions and in turn on the services provided by this department. Please call Major Susan Dowsett of District 4 (Kaneohe) at 247-2166 to review any plans concerning traffic flow in the area.

If there are any questions, please call Ms. Carol Sodehani of the Support Services Bureau at 529-3658.

Sincerely,

LEE D. DONOHUE
Chief of Police

KARL GODSEY
Assistant Chief of Police
Support Services Bureau

cc: ✓ Ms. Leslie Kuisaki
Kimura International, Inc.

OEQC

Strong and Praetorius with Aloha

LINDA LINDLE
GOVERNOR



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

GLENN M. OKIMOTO
INTERIM DIRECTOR

MESSAGE REFERRED TO
HWY-DB 2.8979

DEC 2 4 2002

Chief Lee D. Donahue
Police Department
City and County of Honolulu
801 South Beretania Street
Honolulu, Hawaii 96813

Dear Chief Donahue:

Subject: Kanehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter dated December 4, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated December 4, 2002.

We acknowledge your comment that the project will have a positive long-range impact on the services of the Honolulu Police Department. In response to your concerns about the overall impact on traffic conditions during the construction phase, we will contact Major Susan Dowsett of District 4 to review plans concerning traffic flow in the area.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

Very truly yours,

GLENN M. OKIMOTO
Interim Director of Transportation

c: Leslie Kuisaki, Kimura International

LINDA LINDLE
GOVERNOR



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

GLENN M. OKIMOTO
INTERIM DIRECTOR

MESSAGE REFERRED TO
HWY-DB 2.8979

DEC 2 4 2002

Mr. Larry Leopardi, P.E.
Director and Chief Engineer
Department of Facility Maintenance
City and County of Honolulu
1080 Uluohia Street, Suite 215
Kapolei, Hawaii 96707

Dear Mr. Leopardi:

Subject: Kanehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter dated November 26, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated November 26, 2002, and acknowledge that you have no comments.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

Very truly yours,

GLENN M. OKIMOTO
Interim Director of Transportation

c: Leslie Kuisaki, Kimura International

DEPARTMENT OF FACILITY MAINTENANCE
CITY AND COUNTY OF HONOLULU
1000 ULUOHIA STREET, SUITE 215, KAPOLEI, HAWAII 96707
TELEPHONE: (808) 472-5054 FAX: (808) 472-5857

RECEIVED
DEC 03 2002



LARRY J. LEOPARDI, P.E.
ACTING DIRECTOR AND CHIEF ENGINEER
ALVIN K. AU
DEPUTY DIRECTOR
PROPERTY ACQUISITION
DRM 02-919

November 26, 2002

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

Attention: Ms. Leslie Kurisaki

Gentlemen:

Subject: Draft Environmental Assessment - Kokololio Stream Bridge Replacement

We have reviewed the subject Assessment and offer no comments.
Should you have any questions, please contact Hugh Liu of the Division of Road Maintenance, at 527-5337.

Very truly yours,
Larry Leopardi
LARRY LEOPARDI, P.E.
Acting Director and Chief Engineer

ATTENTION: DIRECTOR



December 13, 2002

TPD11/02-04598R

DEPARTMENT OF TRANSPORTATION SERVICES
CITY AND COUNTY OF HONOLULU
110 SOUTH KING STREET, SUITE 1100, HONOLULU, HAWAII 96813
TELEPHONE: (808) 527-5133 FAX: (808) 527-5130

Park

CHERYL D. SOON
DIRECTOR
GEORGE Y. MIYAMOTO
DEPUTY DIRECTOR

Mr. James Fu
Highways Division, Bridge Design
Department of Transportation
State of Hawaii
601 Kamohila Boulevard, Room 611
Kapolei, Hawaii 96707

Dear Mr. Fu:

Subject: Kokololio Stream Bridge Replacement

In response to the November 6, 2002 Kimura International, Inc. letter, we reviewed the draft environmental assessment for the subject project and have the following comments:

1. The proposed project, which is located on the State Department of Transportation jurisdiction Kamehameha Highway, does not appear to directly affect any City-jurisdiction roadways.
2. Prior to construction, the contractor shall notify Oahu Transit Services, Inc. of the location, scope of work, and proposed closure of any street or traffic lanes.

Should you have any questions regarding these comments, please contact Faith Miyamoto of the Transportation Planning Division at 527-6976.

Sincerely,

Cheryl D. Soon
CHERYL D. SOON
Director

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

Post-it Fax Note	7871	001/13/02	1
To: Leslie Kurisaki		From: Faith Miyamoto	
From: Cheryl D. Soon	cc: DYS		
Phone: 944-8846		Phone: 527-6176	
Fax: 944-8955		Fax: 527-6887	



December 12, 2002

Mr. James Fu
Highways Division - Bridge Design
Hawaii State Dept. of Transportation
601 Kamohala Boulevard - Room 611
Kapolei, HI 96707

Dear Mr. Fu:

Re: Kokololio Stream Bridge Replacement
Hauula, Koolauloa, Oahu
TMK 5-5-8:11 & 01; 5-5-1:07 & 55

Thank you for the opportunity to comment on the October 2002 draft EA of the Kokololio Stream Bridge Replacement as proposed by the Department of Transportation, State of Hawaii. We have reviewed the subject document and have no comments at this time.

We would appreciate the opportunity to review the preliminary construction plans, as they become available, to determine whether the project will impact our facilities; and any work requiring the temporary or permanent relocation of HECO powerlines and/or facilities should be coordinated among the State, its consultant and HECO.

Our point of contact for this project, and the originator of these comments, is Michael Ho (543-7785) lead engineer. I suggest that your staff and consultant deal directly with Michael to coordinate HECO's continuing input in this project.

Sincerely,

Kirk S. Tomita
Senior Environmental Scientist

cc: Ms. Genevieve Salmonson (OEQC)
Ms. Leslie Kuisaki (Kimura Int'l)
M. Ho



WINNER OF THE EDISON AWARD
FOR DISTINGUISHED INDUSTRY LEADERSHIP

GLENN M. OKIMOTO
INTERIM DIRECTOR



IN REPLY REFER TO
HWY-DB 2.9020

STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
660 KUNIA DRIVE, STREET
HONOLULU, HAWAII 96813-6087

DEC 24 2002

Ms. Cheryl D. Soon, Director
Department Of Transportation Services
City And County Of Honolulu
630 South King Street
Honolulu, Hawaii 96813

Dear Ms. Soon:

Subject: Kamehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter Dated December 13, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated December 13, 2002, and have the following responses to your comments:

1. We acknowledged your comment that the proposed project does not appear to directly affect any city jurisdiction roadways.
 2. Prior to construction, the contractor shall notify Oahu Transit Services, Inc. of the location, scope of work, and proposed closure of any street or traffic lanes.
- If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2 9020 as noted above.

Very truly yours,

GLENN M. OKIMOTO
Interim Director of Transportation

c: Leslie Kuisaki, Kimura International

LINDA LANCE
GOVERNOR



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
859 PUNCHBOVAL STREET
HONOLULU, HAWAII 96813-5097

PROJECT NUMBER:
HWY-DB 2.8979

GLENN M. OKAMOTO
MITSDAI DIRECTOR

December 17, 2002

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

Dear Mr. Tomita:

Subject: Kamehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter dated December 12, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated December 12, 2002, and acknowledge that you have no comments at this time.

A copy of your letter has been forwarded to the project electrical engineers, who will submit preliminary construction plans as they become available. They will coordinate directly with Michael Ho of your office.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

Very truly yours,

GLENN M. YASUI
Administrator
Highways Division

c: Leslie Kuisaki, Kimura International



Verizon Hawaii Inc.
P.O. Box 2700
Honolulu, HI 96841

SENT

NOV 15 2002

November 14, 2002

State of Hawaii Department of Transportation
Highways Division, Bridge Design
601 Kamokila Blvd, Room 611
Kapolei, Hawaii 96707

Attention: James Fu

Subject: Draft Environmental Assessment
Kokololio Stream Bridge Replacement, Hamula, Oahu

Dear James,

Thank you for the opportunity to review the above subject Draft Environmental Assessment. As noted in the project description, Verizon Hawaii has existing aerial telephone lines adjacent to the bridge on Kamehameha Highway. These lines will most likely need to be temporarily relocated during the bridge construction. Please submit the design plans to our office for review and comment.

Should you have any questions, please call Garret Hayashi at 840-1438.

Sincerely,

Jill Z. Lee
Section Manager - OSP Engineering

cc: Kimura International, Inc.
1600 Kapiolani Blvd, Suite 1610
Honolulu, HI 96814
Attn: Leslie Kuisaki

L. Caetano
File (Laie)

LOCAL GOVERNMENT



STATE OF HAWAII
DEPARTMENT OF TRANSPORTATION
660 PUNCHBOWL STREET
HONOLULU, HAWAII 96813-6067

December 17, 2002

Ms. Jill Z. Lee
Section Manager, OSP Engineering
Verizon Hawaii Inc.
P.O. Box 2200
Honolulu, Hawaii 96841

Dear Ms. Lee:

Subject: Kanehameha Highway, Kokololio Stream Bridge Replacement
Project No. 83C-05-01, Draft Environmental Assessment
Your Letter dated November 14, 2002

Thank you for your review of the Kokololio Stream Bridge Replacement Draft EA. We have received your letter dated November 14, 2002. As requested, design plans will be submitted to your office for review and comment.

If you have any questions or other comments, please contact James Fu, Bridge Design Section Office, Design Branch, Highways Division at (808) 692-7613 and reference HWY-DB 2.8979 as noted above.

Very truly yours,

A handwritten signature in cursive script, appearing to read "Glenn M. Yasui".

GLENN M. YASUI
Administrator
Highways Division

c: Leslie Kuisaki, Kimura International

GLENN M. YASUI
ADMINISTRATOR

HWY-DB 2.8979

Appendices

Appendix A

Char & Associates
Botanical Resources Assessment

Appendix B

Tim Ohashi
Wildlife Survey

Appendix C

Mike Kido
Stream Assessment

Appendix D

Cultural Surveys Hawaii
*Archaeological Assessment and
Cultural Impact Evaluation*

Appendix E

Department of Land & Natural Resources
*State Historic Preservation
Division Correspondence*

Appendix A

Char & Associates
Botanical Resources Assessment

CHAR & ASSOCIATES

Botanical/Environmental Consultants

4471 Puu Panini Ave.
Honolulu, Hawaii 96816
(808) 734-7828

12 June 2002

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

Attention: Mr. Glenn T. Kimura

**SUBJECT Kokololio Stream Bridge Replacement
Botanical Resources Assessment Study**

Dear Mr. Kimura:

The Kokololio Stream Bridge Replacement project site is located along Kamehameha Highway (Route 83) between Hau'ula and La'ie towns. The existing bridge will be demolished and replaced by a new bridge. An alternate route with a temporary bridge will be located on the mauka side of the existing bridge.

Field studies to assess the botanical resources along the existing bridge as well as the alternate route and temporary bridge were conducted on 06 June 2002. The primary objectives of the survey were to:

- 1) prepare a general description of the vegetation on the project site;
- 2) search for threatened and endangered species as well as species of concern; and
- 3) identify areas of potential environmental problems or concerns and propose appropriate mitigation measures.

The plant names used in this letter report follow Wagner et al. (1990), and Wagner and Herbst (1999). The more recent name changes are those recorded in the Hawaii Biological Survey series (Evenhuis and Eldredge, eds., 1999-2000).

Description of the Vegetation

The project site had been surveyed by the survey engineers and a detailed map produced prior to out field studies.

The vegetation around the existing bridge and stream crossing is periodically maintained. It consists of low clumps of Guinea grass (Panicum maximum) and California grass (Brachiaria mutica), 1 to 2 ft. tall. On the makai side of the bridge, hau (Hibiscus tiliaceus) forms a dense thicket on the Hau'ula-side stream bank. The banks of the stream are well-defined with the stream only 2 to 3 ft. wide and a few inches deep. The stream bottom is a mix of boulders and shallow soil.

On the Hau'ula-side of the alternate route, the vegetation consists of open, grassy pasture land or mowed areas. California grass along with smaller patches of ricegrass (Paspalum scrobiculatum), Guinea grass, and sourgrass (Digitaria insularis) are abundant to common. A number of fence lines cross the site; scattered to dense clumps of sourbush (Pluchea carolinensis), 5 to 12 ft. tall, are associated with the fence lines. A row of Java plum trees (Syzygium cumini), 40 to 60 ft. tall, is found near a fence line and dirt road. A few bread fruit or 'ulu trees (Artocarpus altilis) and coconut palms (Cocos nucifera) as well as patches of banana (Musa X paradisiaca) also occur along the alternate route.

On the La'ie-side of the alternate route, the alignment passes near a vegetable farm and a small shed. Where the alignment joins the highway, there is a row of tall ironwood trees (Casuarina equisetifolia) and hau thickets.

Besides the grasses and woody components already mentioned, other plants which occur throughout the site in rather large numbers include wedelia (Sphagneticola trilobata), white flowered Spanish needle (Bidens alba var. radiata), Bermuda grass or manienie (Cynodon dactylon), Hilo grass (Paspalum conjugatum), Spanish clover (Desmodium incanum), koa haole (Leucaena leucocephala), honohono (Commelina diffusa), kolomona (Senna surattensis), and ivy gourd (Coccoloba grandis).

Where the temporary bridge crosses the stream, the vegetation consists of dense mats of California grass and Guinea grass with scattered clumps of sourbush shrubs, young Java plum trees, and ivy gourd vines.

Discussion and Recommendations

The vegetation along the existing bridge and on the alternate route and temporary bridge site is composed almost exclusively of introduced species. Introduced or alien species are all those plants which were brought to the Hawaiian Islands by humans, intentionally or accidentally, after Western contact, that is Cook's arrival in the islands in 1778. A few plants such as the breadfruit and coconut are originally of Polynesian introduction prior to Western contact. Only two native species were observed on the site; these are hau (Hibiscus tiliaceus) and ricegrass (Paspalum scrobiculatum). Both species are indigenous and are found throughout Hawai'i and the Pacific/tropics.

None of the plants found during the field studies is a threatened and endangered species or a species of concern (U.S. Fish and Wildlife Service 1999a, 1999b; Wagner et al. 1999). No trees on the City and County's list of exceptional trees (Ord. 79-91, 81-32) occur on the site.

The banks along Kokololio Stream are well-defined. There are no low lying areas or depressions along the stream where ponding can occur for a long or very long duration. Soils on the site are mapped as "Ms", Mokuleia loam; these are well-drained soils found along the coastal plains on O'ahu and Kaua'i (Foote et al. 1972).

Given these findings, the proposed Kokololio Stream Bridge Replacement project is not expected to have a significant negative impact on the botanical resources. There are no botanical reasons to impose any restrictions, conditions, or impediments to the proposed project.

It is recommended that areas disturbed by construction activities adjacent to the stream be grassed over as soon as possible to prevent discharge of sediments into the stream. Bermuda grass, which already occurs on the site, can be used for revegetation purposes.

Please do not hesitate to contact me should you have any questions regarding this letter report.

Sincerely,



Winona P. Char
Principal Investigator

References

- Evenhuis, N.L. and L.G. Eldredge, editors. 1999-2000. Records of the Hawaii Biological Survey. Bishop Museum Occasional Papers Nos. 58-64.
- Foote, D.E., E.L. Hill, S. Nakamura, and F. Stephens. 1972. Soil survey of the islands of Kauai, Oahu, Maui, Molokai, and Lanai, State of Hawaii. Soil Conservation Service, U.S. Department of Agriculture, Washington, D.C.
- U.S. Fish and Wildlife Service. 1999a. U.S. Fish and Wildlife Service species list, plants. March 23, 1999. Pacific Islands Office, Honolulu, HI.
- U.S. Fish and Wildlife Service. 1999b. Endangered and threatened wildlife and plants. 50 CFR 17.11 and 17.12. December 31, 1999.
- Wagner, W.L., M.M. Brueggmann, D.R. Herbst, and J. Q.C. Lau. 1999. Hawaiian vascular plants at risk: 1999. Bishop Museum Occasional Papers 60.
- Wagner, W.L., D.R. Herbst, and S.H. Sohmer. 1990. Manual of the flowering plants of Hawai'i. 2 vols. University of Hawai'i Press and Bishop Museum Press, Honolulu. Bishop Museum Special Publication 83.
- Wagner, W.L. and D.R. Herbst. 1999. Supplement to the Manual of the flowering plants of Hawai'i, pp. 1855-1918. In: Wagner, W.L., D.R. Herbst, and S.H. Sohmer, Manual of the flowering plants of Hawai'i. Revised edition. 2 vols. University of Hawai'i Press and Bishop Museum Press, Honolulu.

1 2 3 4 5 6 7 8 9 10 11 12 13 14 15 16 17 18 19 20 21 22 23 24 25 26 27 28 29 30 31 32 33 34 35 36 37 38 39 40 41 42 43 44 45 46 47 48 49 50 51 52 53 54 55 56 57 58 59 60 61 62 63 64 65 66 67 68 69 70 71 72 73 74 75 76 77 78 79 80 81 82 83 84 85 86 87 88 89 90 91 92 93 94 95 96 97 98 99 100

Appendix B

Tim Ohashi
Wildlife Survey



Wildlife Survey
Kokololio Bridge Replacement,
Kamehameha Highway
Hauula, Oahu, Hawaii

Prepared for:
Kimura International, Inc.
1600 Kapiolani Blvd., Ste. 1610
Honolulu, Hawaii 96814

Prepared by:
Tim J. Ohashi
Certified Wildlife Biologist
P.O. Box 786
Volcano, Hawaii 96785

May 16, 2002

1.0 Introduction

A field survey was conducted on May 11, 2002 to assess the wildlife resources found in the vicinity of Kokololio Bridge and the proposed detour route around the proposed construction site. The objectives of the survey were to provide a brief record of wildlife at the site of the Kokololio Bridge replacement project to determine whether the project would adversely impact any important wildlife resources in the area.

2.0 Study Area

Kokololio Bridge is located near Hauula, on the northeast coast of the island of Oahu, Hawaii (Figure 1). The proposed construction site was about 9-14 feet above msl and within a 100 yds of the ocean shoreline. The site falls within vegetation zone C₁ which is characterized by 40-60 inches of rainfall with a northeast trade-wind origin. Both temperate and tropical species have become naturalized. The existing bridge (Figure 2) spanned a narrow channel 2-3 feet wide, with flowing water. The wetland is riverine, lower perennial, unconsolidated bottom, mud (R2UB3) according to the wetland classification system developed by (Cowardin et al. 1979). The flow of water from Kokololio gulch appeared to be perennial with mostly a mud substrate. The down stream or makai side of the bridge was choked with hau (*Hibiscus tileaceus*) (Figure 3), and the upstream or mauka side of the stream was a tangle of brush (Figure 4).

The area proposed for the detour corridor was a disturbed site, with mainly introduced naturalized vegetation. Java plum (*Eugenia cuminii*) was the dominant overstory tree along the narrow water channel with a dense ground cover of *Wedelia trilobata* (Figure 5). Bread fruit (*Artocarpus communis*), African tulip (*Spathodea campanulata*), coconut (*Cocos nucifera*) and Chinese banyan (*Ficus retusa*) trees were also present on site. Castor bean (*Ricinus communis*) and sourbush (*Pluchea carolinensis*) shrubs were present in the small open lots with a ground cover of mixed grasses and forbs (Figure 6). Livestock fences indicated that the area may have been used to graze livestock, although no livestock were present during the survey. A residence was located to the north but the locked gate prevented access.

3.0 Method

On May 11, 2002 a site visit was made beginning at 06:13 hrs. and ending at 06:45 hrs. All birds seen and heard within an 8 minute count period were recorded in a clearing immediately south of the channel. Incidental observations were made throughout the visit.

4.0 Results and Discussions

The usual complement of non-native birds, common to the lowlands of Oahu, were found at the site. The birds identified during the site visit are listed below in taxonomic order as presented in Pratt et al. (1987). The numbers after each species are the numbers of individuals counted during the 8-minute count. The White-rumped Shama was observed outside the count period.

Cattle egret (*Bubulcus ibis*) 1
Spotted dove (*Streptopelia chinensis*) 2
Zebra dove (*Geopelia striata*) 4
Red vented bulbul (*Pnycnonotus cafer*) 9
White rumped Shama (*Copsychus malabaricus*)
Common myna (*Acridotheres tristis*) 4
Japanese white eye (*Zosterops japonicus*) 3
Northern cardinal (*Cardinalis cardinalis*) 1
House finch (*Carpodacus mexicanus*) 3
Common waxbill (*Estrilda astrild*) 5
Nutmeg mannikin (*Lonchura punctulata*) 25
Java sparrow (*Padda oryzivora*) 5

Pratt (1993) and Soehren (1996) also list Chestnut mannikin (*Lonchura malacca*), Red avadavat (*Amandava amandava*) and the Japanese bush warbler (*Cettia diphone*) as occurring in the area. These species were not identified at the site.

There were no waterbirds or shorebirds seen at the site and none were expected. The overstory along the riparian zone was dense and hau thickets choked the channel between the shoreline and the bridge. The cattle egret was observed flying overhead in a southern direction following the coastline. Pacific golden plovers migrate to breeding grounds in the arctic in April, therefore no plovers were observed. The vegetation in the open lots were too tall and the lots too small to provide suitable plover feeding habitat. It is possible that the native black-crowned night heron (*Nycticorax nycticorax hoactli*) would use the channel to forage, but only next to the bridge where it was more open. There were, however,

no herons or signs of heron use, such as tracks or droppings, observed at the site. The site does not fall within the proposed critical habitat of the Oahu Elepaio (*Chasiempis sandwichensis ibidis*). The closest area inhabited by elepaio is Kahana Valley.

According to one of the residents in the area, feral pigs (*Sus scrofa*) are common. No mongoose (*Herpestes auropunctatus*), cats (*Felis catus*), rats (*Rattus* spp) nor mice (*Mus musculus*) were observed but they are also expected in the area. A stray dog (*Canis familiaris*) was present in the open lot during the site visit.

5.0 Conclusion and Summary

The terrestrial habitat is not suitable for native forest birds. There are no native trees. The site could be made more suitable for wintering plovers if the grasses were cut or grazed in the open lots. The stream channel is presently too narrow and over-grown to be of much value to waterbirds, shorebirds or wading birds. Cutting trees along the bank could create more suitable conditions for black-crowned night herons. There was very little emergent vegetation to provide cover for the common moorhen. The stream channel was too narrow and overgrown for stilts and the water not deep enough for Hawaiian coots. Hawaiian ducks could use the area but none were present during the survey. The proposed improvements to the bridge and the detour route will affect an area immediately adjacent to Kamehameha Highway, residential and pastoral lots, which are already highly disturbed. Based on the survey results, the action will not likely adversely impact any native species or species of concern nor any threatened or endangered species.

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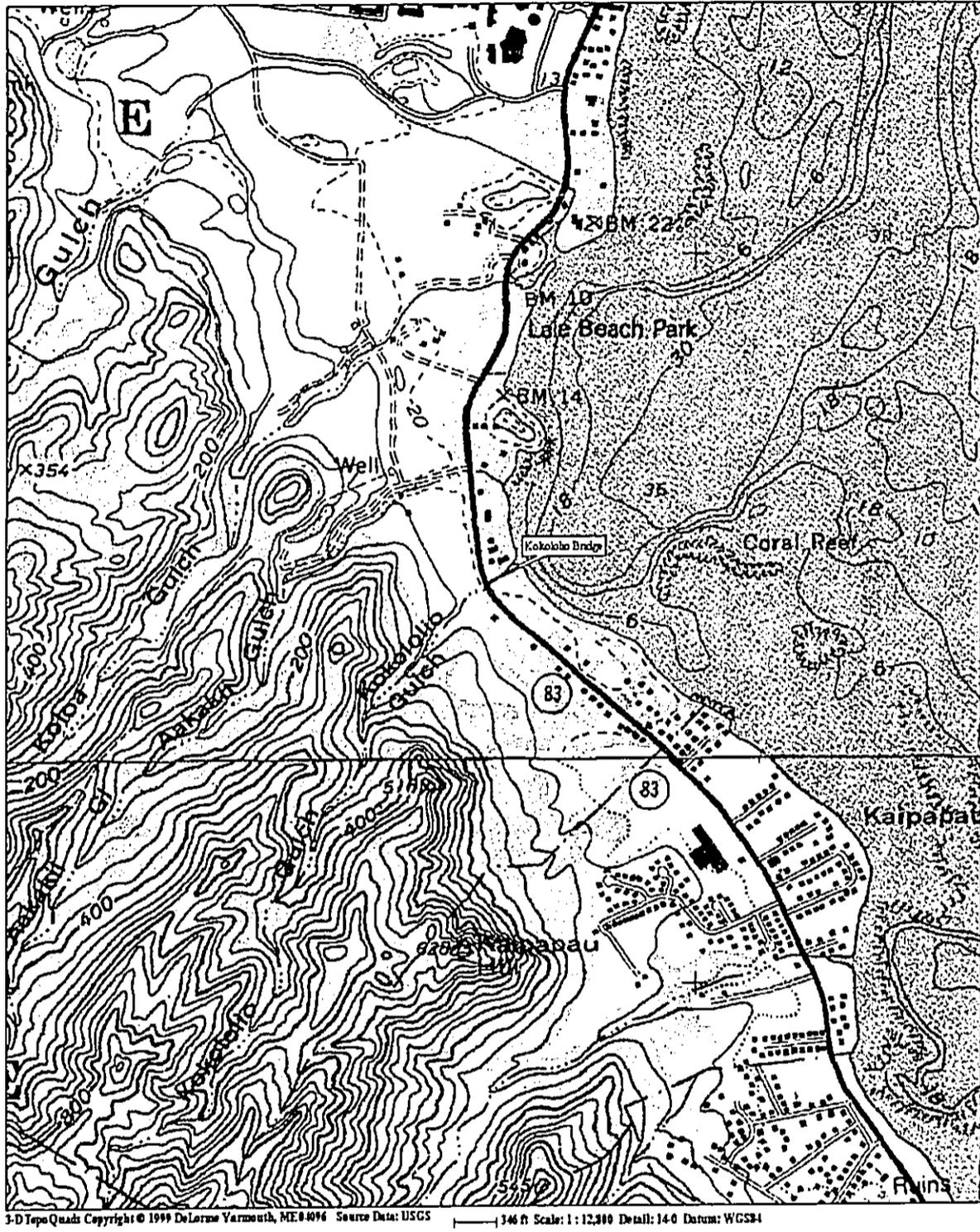


Figure 1. Location of Kokololio Bridge, Hauula, Oahu, Hawaii.

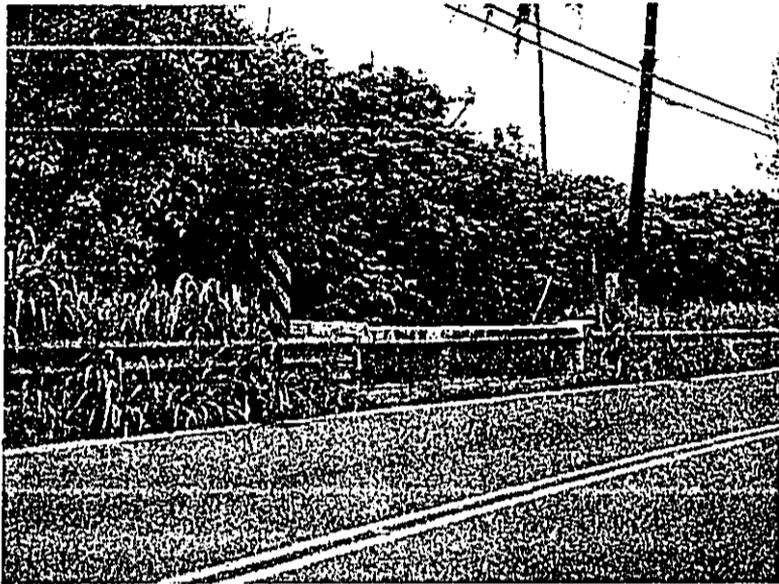


Figure 2. Mauka side of Kokololio Bridge, Hauula, Oahu, Hawaii. May 11, 2002.

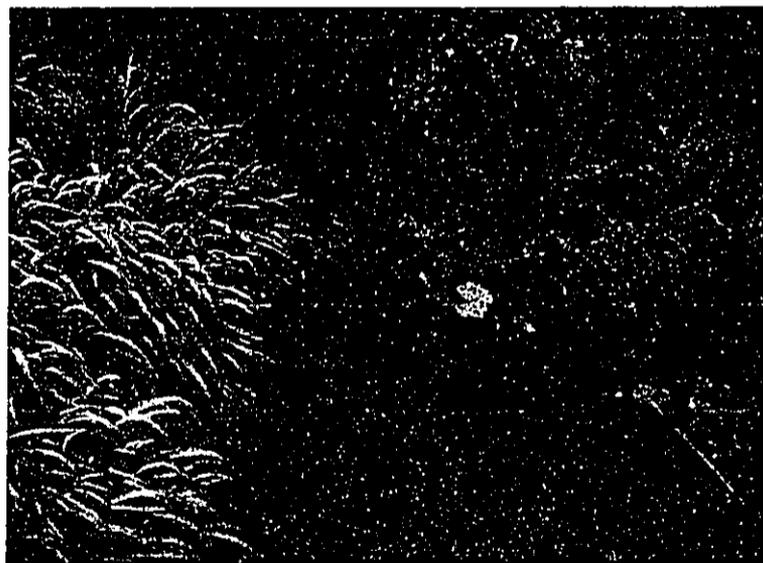


Figure 3. Stream channel makai of bridge showing hau thicket and mud substrate. Note absence of any bird tracks on the mud. Kokololio, Hauula, Oahu, Hawaii. May 11, 2002. Photo taken from bridge.

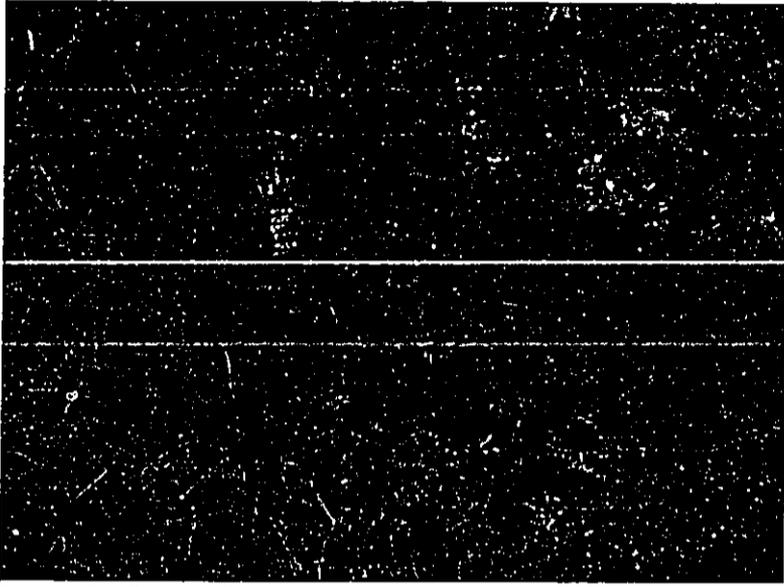


Figure 4. Stream channel mauka of bridge choked by heavy brush. Kokololio, Hauula, Oahu, Hawaii. May 11, 2002. Photo taken from bridge

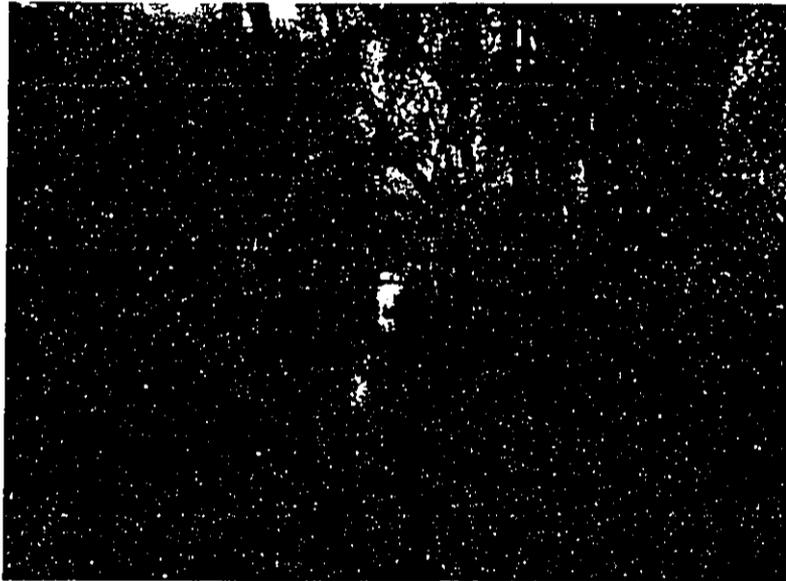


Figure 5. Stream channel mauka of Kokololio Bridge showing Java plum trees and dense wedelia growth along bank. Hauula, Oahu, Hawaii. May 11, 2002. Photo taken toward highway near point where detour route will cross channel.

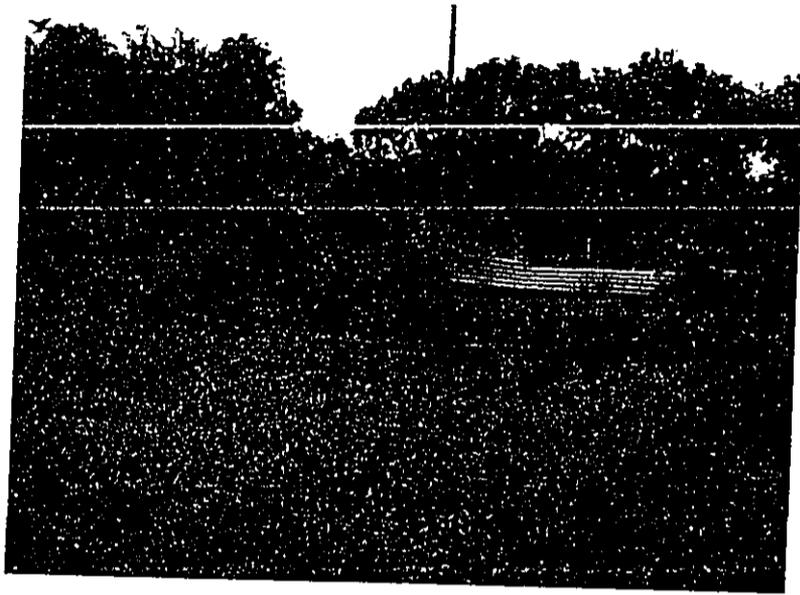


Figure 6. Open lot where bird count was made. Note stray dog to the right. Water channel is located under row of Java plum trees in the background. This is the location of the proposed detour route. May 11, 2002. Hauula, Oahu, Hawaii.

Appendix C

Mike Kido
Stream Assessment

**Kokololio Stream Bridge Replacement Project, Oahu
Visual Assessment and Evaluation of Potential Impacts**

Final Report To Kimura International, Inc.

**Michael H. Kido
Aquatic Biologist**

May 2002

PROJECT BACKGROUND

The purpose of this study was to evaluate the potential for negative impacts on Kokololio Stream, located in the Hauula area of Oahu (Fig. 1), of construction activities required for the replacement of an existing bridge on Kamehameha Highway which spans the stream channel. Kokololio Stream was not found in the list of perennial streams in the Hawaii Stream Assessment (1990), nor was it apparently surveyed in the 1978 Statewide Inventory of Streams (Timbol and Maciolek, 1978). Prior to the field survey, it was thought that this windward Oahu stream was possibly an intermittent or interrupted system that only flowed at flood stage.

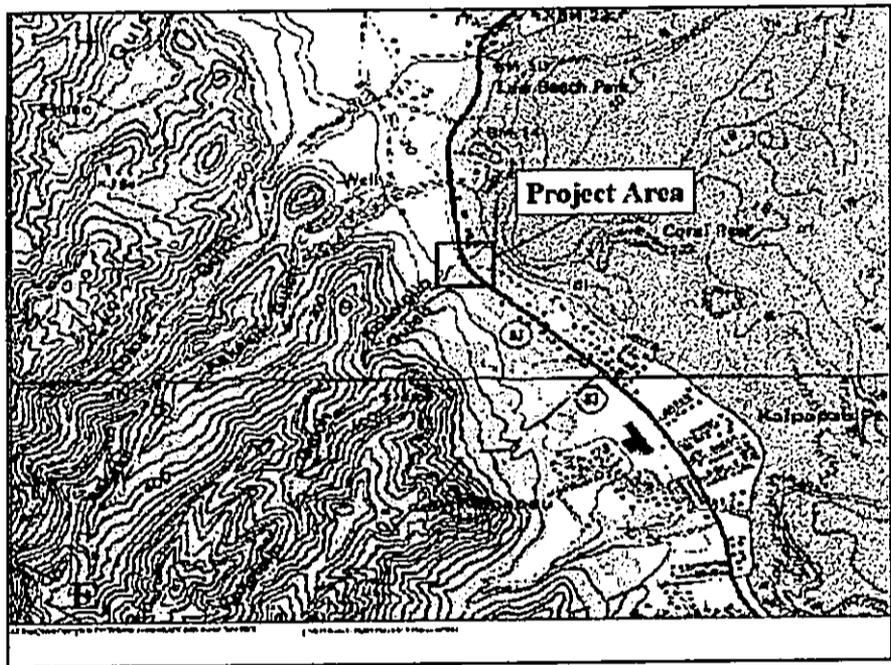


Figure 1. Topographic map of Project Area on Kokololio Stream located in Hauula, Oahu.

Scope of Work

Because of the probable intermittent status of Kokololio Stream, it was not likely that a formal stream bioassessment project (Kido 2002) was required. Therefore, the study was limited to a reconnaissance which would involve a visual assessment of existing conditions of the stream and / or its channel in the Project Area (Fig. 1). The reconnaissance area was limited to the proposed construction site at the Kamehameha Highway bridge crossing. If a perennially flowing stream was found and native species observed, then application of a formal stream bioassessment project would be recommended as a follow-up project to evaluate the biological integrity of the stream and potential negative impacts of the proposed construction project on the stream's biota.

Methods

Kokololio Stream in the upstream and downstream vicinity of the Kamehameha Highway crossing was visually assessed in April 2002 with regard to the:

1. Physical and hydrological condition of the stream and its channel;

2. Potential adverse impacts of construction activities related to the bridge replacement project on the stream and its biota and;
3. Whether or not a formal biological assessment of the stream was required.

In addition, the stream mouth was located on Kokololilo / Manakea Beach to determine if water was flowing into the ocean in order to evaluate channel status condition.

RESULTS AND DISCUSSION

The Kokololilo Bridge crossing at Kamehameha Highway was discovered to be a small, two-lane concrete structure which was placed across parallel concrete walls through which Kokololilo Stream was allowed to flow (Fig. 1). The stream bed was nearly completely dry under the bridge as well as in both upstream and downstream directions (Fig. 2). A barbed wire fence overgrown by California grass blocked the upstream portion of the stream channel (Fig. 3) and a tangle of hau (*Hibiscus tiliaceus*) had overgrown the channel downstream of the bridge (Fig. 4). The stream was not flowing through this area and the streambed was found to be mostly dry with a few scattered stagnant pools of water.

These observations confirmed that the segment of Kokololio Stream in the vicinity of the Kamehameha Highway crossing only flowed intermittently and that the streambed was generally dry most of the time. This was confirmed by the observation that no alien poeciliid fishes (Poeciliidae) were observed in any of the few small stagnant pools of water found scattered in the area of the bridge crossing (Fig. 2). These hardy and prolific alien fishes would more than likely be present at least in small numbers if there was any robust frequency to the intermittent stream flow over time.

Additional evidence of intermittency was provided by a survey of stream conditions at the mouth of Kokololio Stream which was totally blocked by the sand berm at Kokololio / Manakea Beach (Fig. 5, 6). There was no stream flowing and the streambed was mostly dry from the hau grove area below the bridge to the sand berm at the beach (Fig. 5) although there was one shallow standing pool of water approximately 50 meters from the ocean. The pool was inhabited by what appeared to be native *aholehole* (*Kuhlia sandwicensis*) a marine finfish species which typically moves into estuarine areas of Hawaiian streams. The large biomass of marine debris in and around the stream channel / banks suggested that recent high tides / surf events had washed a considerable distance up the stream channel. This would account for the standing water and the presence of *aholehole* trapped in the pool.

CONCLUSIONS AND RECOMMENDATIONS

The results of the survey confirmed that Kokololio Stream is an intermittent system which only flows with any frequency during very rainy periods. Given these results, a formal bioassessment study for the Project was not deemed necessary or appropriate. It is highly unlikely that the construction project will have any negative impact on the stream or its biota. A few common sense precautions, however, during planning and actual construction activities for the bridge project would eliminate the potential for negative impact to the stream or nearshore areas.

1. Construction activities should be scheduled for the drier summer months when the probability for heavy rains will be reduced;
2. Any site grading required with heavy equipment should be scheduled with an awareness of the short term weather outlook and grading should be halted should heavy rains occur;
3. Precautions should be taken to minimize physical disturbance to the stream channel and its banks through soil erosion and / or deposition;
4. All materials used during construction should be completely removed from the area upon completion of the Project.

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APPENDIX – PROJECT AREA PHOTOS

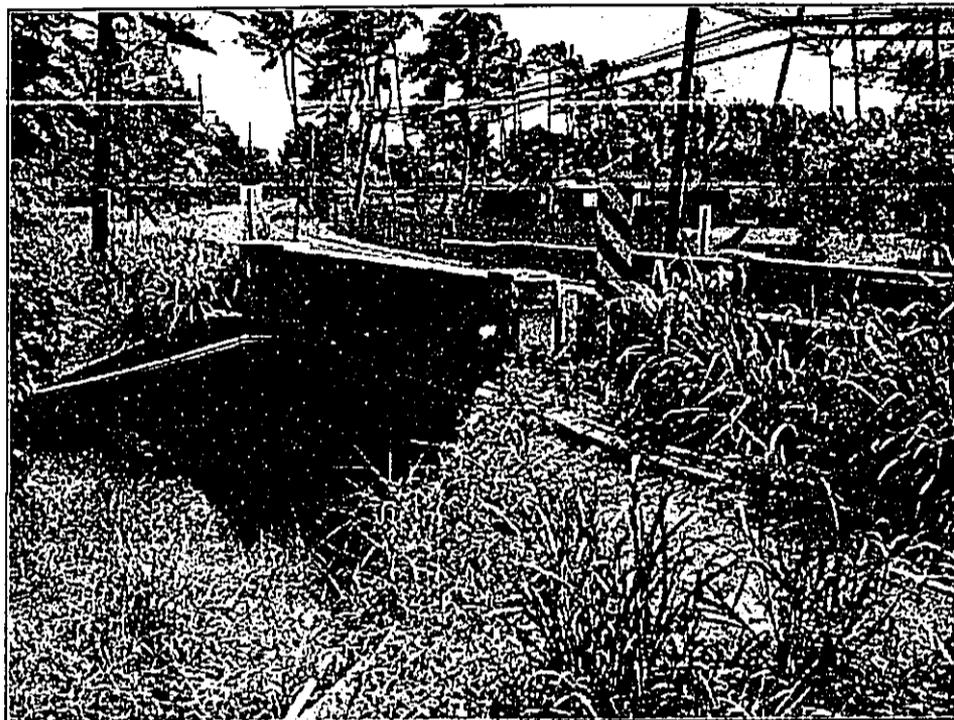


Figure 1. Kokololio Stream and Bridge crossing at Kamehameha Highway.



Figure 2. Dry streambed of Kokololio Stream underneath bridge crossing.

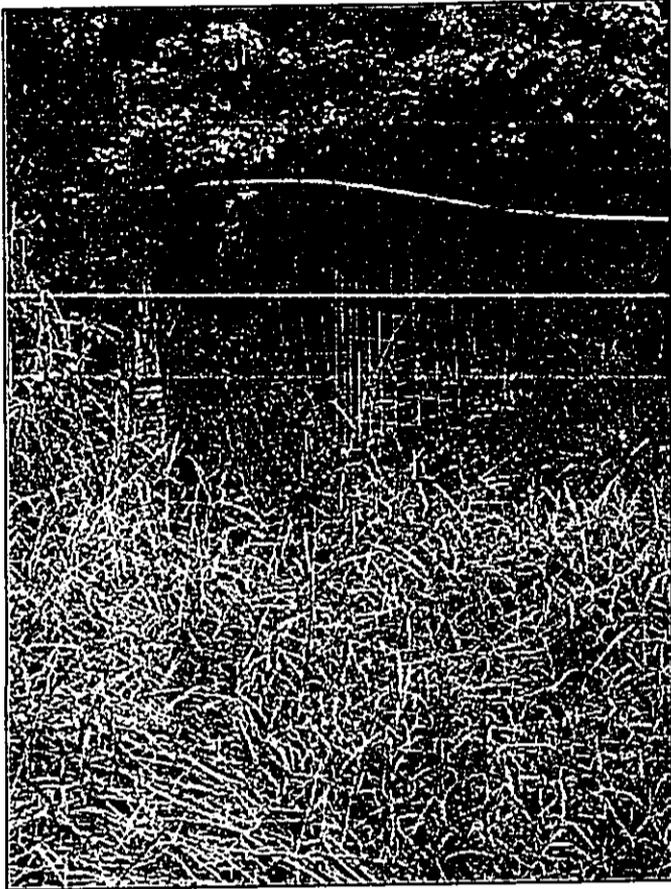


Figure 3. Wire fence blocking stream channel upstream from Kokololio Bridge.

Figure 4. Hau enclosing stream channel downstream of Kokololio Bridge.





Figure 5. Dry Kokololio Stream channel blocked by beach sand berm at mouth.



Figure 6. Kokololio Stream mouth at Kokololio / Manakea Beach.

Appendix D

Cultural Surveys Hawaii
Archaeological Assessment and
Cultural Impact Evaluation

**An Archaeological Assessment
for the Proposed Replacement for
Kokololio Bridge,
Lā`ie (Malo`o) Ahupua`a,
Ko`olauloa, O`ahu
TMK 5-5-01:7 and 55; and 06:11**

by

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and
Hallett H Hammatt, PhD

Prepared for

Kimura International, Inc.

by

Cultural Surveys Hawai`i, Inc.

April 2002

TABLE OF CONTENTS

LIST OF FIGURES ii

I. INTRODUCTION 1

 A. Project Background 1

 B. Scope of Work 1

 C. Methods 4

 D. Natural Setting 4

II. HISTORICAL BACKGROUND 5

 A. Mythological and Traditional Accounts 5

 B. Early Historic Period 6

 C. Mid-1800s (Land Commission Awards) 6

 D. Late 1800s and Early 1900s 7

 E. Modern Use 8

III. PREVIOUS ARCHAEOLOGICAL RESEARCH 11

IV. RESULTS OF FIELD CHECK 18

V. RECOMMENDATIONS 22

VI. BIBLIOGRAPHY 23

LIST OF FIGURES

Figure 1 Portion of U.S.G.S. 7.5 Minute Series Topographical Map, Kahuku
Quadrangle, Showing Location of Project Area 2

Figure 2 TMK 5-5-01 Showing Location of Project Area 3

Figure 3 1919 War Department Fire Control Map Showing a Railroad Bridge
Crossing Kokololio Stream (Note Dwelling to the Northwest 9

Figure 4 1928-1930 USGS Map of the Project Area Showing Dwellings in the
Vicinity of Kokololio Bridge 10

Figure 5 Previous Archaeological Studies in the Vicinity of the Project Area 13

Figure 6 Plan View Map of Proposed Bridge Replacement and Location of
Temporary Bypass 19

Figure 7 View North of Existing Kokololio Bridge and Gulch 20

Figure 8 View West of Basalt Lining in Drainage Canal Paralleling
Kamehameha Highway 20

I. INTRODUCTION

A. Project Background

At the request of Mr. Glen Kimura of Kimura International, Inc., Cultural Surveys Hawai'i, Inc. has prepared an archaeological assessment for the proposed replacement of the Kokololio Bridge in Lā'ie, Ko'olaupua, O'ahu, TMK 5-5-01:7 and :55 and -06:11 (Figures 1 and 2). The project includes the demolition and replacement of the existing bridge over Kokololio Stream. Additionally, a temporary traffic route will need to be established for the maintenance of traffic while the new bridge is under construction. The temporary bypass is planned to circumvent the construction of the new bridge by detouring around the *mauka* side of the existing bridge.

B. Scope of Work

The purpose of this study was to carry out a level of work sufficient to address site types and locations, and allow for future work recommendations if appropriate.

The scope of work includes:

1. Historical research included study of archival sources, historic maps, Land Commission Awards and previous archaeological reports to construct a history of land use and to determine if archaeological sites have been recorded on or near the project area.
2. Field inspection of the project area to identify any surface archaeological features and to investigate and assess the potential for impact to such sites. This assessment will identify any sensitive areas that may require further investigation or mitigation before the project proceeds.
3. Preparation of a report to include the results of the historical research and the fieldwork with an assessment of archaeological potential based on that research, with recommendations for further archaeological work, if appropriate. It also provides mitigation recommendations for archaeologically sensitive areas that need to be taken into consideration.

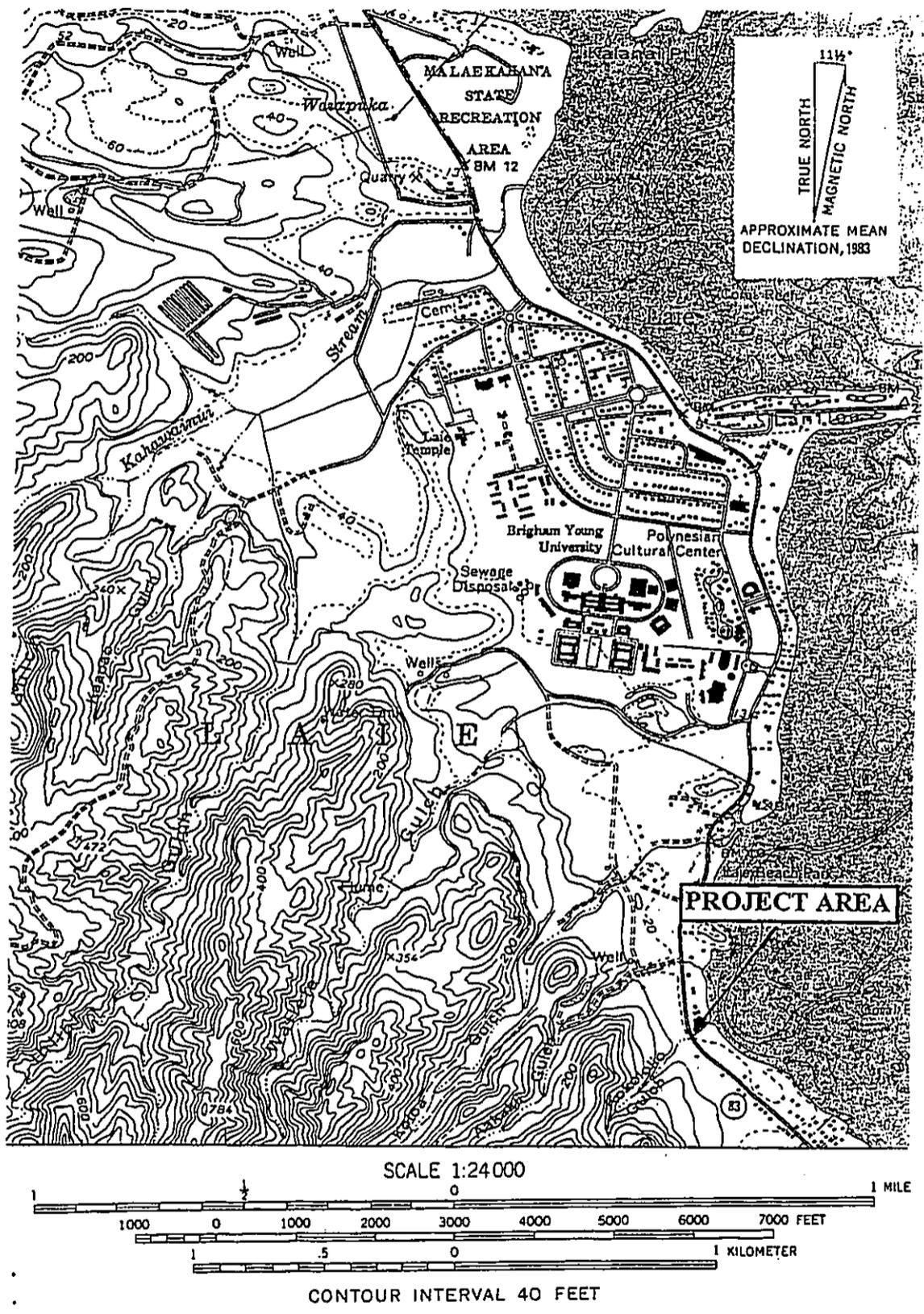


Figure 1 Portion of U.S.G.S. 7.5 Minute Series Topographical Map, Kahuku Quadrangle, Showing Location of Project Area

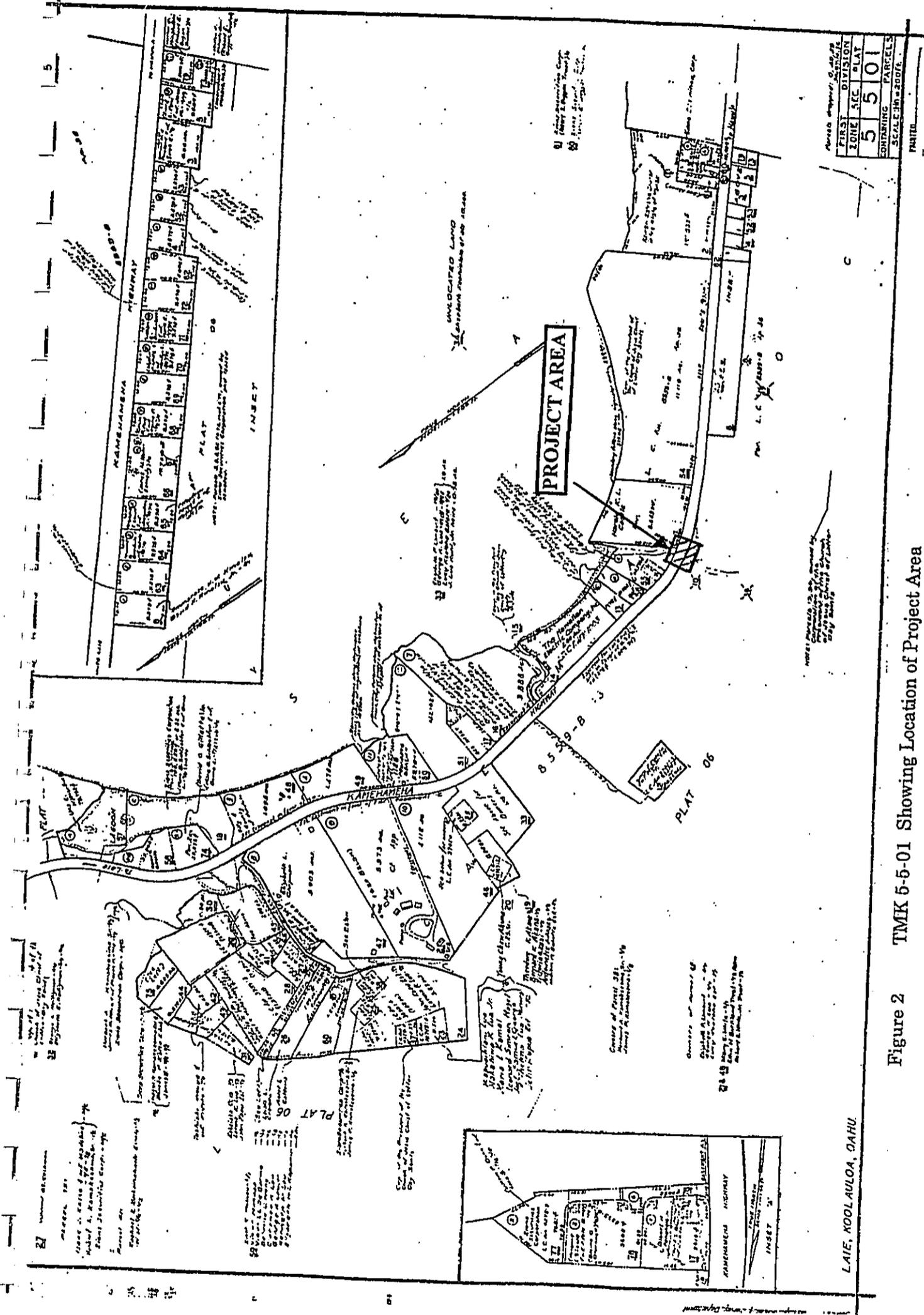


Figure 2 TMK 5-5-01 Showing Location of Project Area

C. Methods

The archaeological assessment for the proposed bridge replacement involved a surface survey of the project area by a Cultural Surveys Hawai'i archaeologist on April 13th and April 16th, 2002. Historical background research included study of archival sources, Land Commission Awards and historic maps as well as a review of past archaeological research in the vicinity to construct a history of land use. From these sources, a predictive model was developed to give a general idea of pre-contact and historic coastal land use patterns along the highway corridor in the vicinity of Kokololio Bridge.

D. Natural Setting

The project is situated along the narrow coastal plain of the north windward coast of O'ahu, in between the towns of Hau'ula (to the south) and Lā'ie (to the north) at an elevation of 10-15 feet A.M.S.L. The northeast margin of the Ko'olau Mountain Range in this vicinity is deeply dissected by numerous narrow and small gulches. The bridge replacement project spans Kokololio Stream debouching from one of these narrow gulches.

The project area receives 60-80 inches of rain annually, however the rainfall gradient increases rapidly to nearly 150 inches near the Ko'olau summit (Juvic and Juvic, 1998). Vegetation in the vicinity of the project area consists of mixed ground cover, *'ape*, *hau*, *opiuma*, as well as fruit trees such as banana and breadfruit.

Soils in the project area generally consist of Mokuleia loam and Keaau clays, both of which are common to lowlands and coastal plains and historically have been utilized for sugarcane and pasture (Foote *et al.* 1972). Just *makai* (NE) of Kamehameha Highway are Jaucus sands which are formed along beach zones and which in pre-contact times were often utilized for interment of the deceased.

II. HISTORICAL BACKGROUND

A. Mythological and Traditional Accounts

There are many legends associated with the *ahupua`a* of Lā`iemalo`o in the district of Ko`olauloa. These accounts describe the development and naming of landmarks, the origin and presence of marine resources, and the social life of the people. These accounts are briefly summarized below.

The *Romance of Lā`ie-i-ka-wai* (Kalākaua 1888:457-480; Beckwith 1970:526-528; Paki, 1972:52) tells of twin girls born in Lā`ie, raised separately in secrecy under *kapu* (to await marriage) by older relatives, and their entangled marriages. Paki (1972:52) places the focus of this story at the site of the Lā`ie Mormon Temple. Mary Kawena Pukui (1983, saying 1938) links the only identified poetical saying of Lā`ie - "*Lā`ie i ka `ēheu o nā manu*" (Lā`ie borne of the wings of birds) with this legend of the twin girls. Pukui notes: "Lā`ie is a gathering place for people" but whether this concept predates the Mormon purchase of 1865 is uncertain.

The legend of *Laniloa, the Mo`o* describes the origin of Laniloa Point (also known as Naniloa Point and Lā`ie Point) and five small islands offshore of Mālaekahana. As told by W. H. Rice (1923:124-126) and Armitage and Judd (1944:141), this point of land was once a *mo`o* which would kill anyone who approached. A demi-god named Kana destroyed the *mo`o*, cutting its head into five pieces which became offshore islands.

The *Legend of Manōnihokahi* (shark with one tooth), as noted in Rice (1923:111), takes place in Lā`ie and Mālaekahana. In this story, Manōnihokahi would often pass through a tunnel or water-hole in Lā`ie into the ocean in his shark form to kill lone fishermen. Once back in his mortal form, Manōnihokahi's deeds were discovered and he was put to death.

Pukui (in Sterling and Summers 1978:159) tells of a different shark with one tooth, an *akua* named *Ka-U-niho-kahi*, who protected the local community of Lā`ie. To warn people not to go further into the ocean, Ka-U-niho-kahi would nip like a *pāpa`i* (crab) and cut the person with just one tooth or he would appear in the form of a small fish.

Several legends concerning this region of Ko`olauloa center on the theme of fishing lore. The *Story of Punaaiikoe*, as told by Kamakau (Beckwith 1970:194), concerns a female *mo`o* named Kalamainu`u who resided within a cave at Makaleha in Lā`ie. Kalamainu`u hid her reptilian identity and romanced a handsome chief for several months until her relatives Hīnālea and Aikilolo told the chief that she was actually a *mo`o*. Enraged, Kalamainu`u pursued these informants to their hiding place in the sea, catching them with a basket trap. This trap subsequently came into use by the Hawaiians and Kalamainu`u became the *`aumakua* for catching *hīmālea* fish in this area.

The *Legend of Maikoha* (Fornander 1919, Vol 5:272-273; Beckwith 1970:100) tells of Ka-ihu-ku`una who became the wife of chief Laniloa at Lā`ie and then "changes into a famous fishing ground for mullet." Titcomb (1972:65) relates a similar version in which

Laniloa had a sister who took the form of the *`ama`ama* (mullet), a supernatural fish born to human parents. No *`ama`ama* lived in the waters of Lā`ie, and so Laniloa asked his sister to bring the fish. The sister came from her home at Honouliuli past Moku Manu to Lā`ie, followed by the fish, creating the current migration route of the *`ama`ama*. Thrum (1907:270-272) and Pukui (1960: 48-51) tell a similar story in which Lā`ie is lauded as a land of taro, sugar cane, bananas, sweet potatoes, shellfish, seaweed and ultimately a bay "silver with mullet". According to Thrum (1907:249) *`Ai`ai*, a god of fishermen, established a fish stone called *Kaihuku`una* at Lā`ie malo`o - the only such shrine he established between Waimea and Kou (Honolulu) on O`ahu.

A traditional account told by George Po`olua in 1919 (Sterling and Summers 1978:159) involves Kamehameha V and a man named Kauahi. Kauahi is described as a keen lawyer who lived on the island of Moku`auia with his two wives. Polygamy was against Hawaiian law, so Kamehameha V ordered his soldiers to arrest them, but Kauahi claimed "I am king of this island. Twelve of the islands are on the map, but this one is not." There is no indication as to whether or not Kamehameha's men ended up arresting the three people.

In summary, the identified legends with any geographic reference tend to focus further north within Lā`ie *Ahupua`a* in the vicinity of Laniloa Point and the present Mormon Temple. The legendary traditions describe an agriculturally rich land including cultivation of taro, sugar cane, bananas, and sweet potatoes but tend to focus on the sea and particularly the migratory mullet that came in great numbers to Lā`ie Bay.

B. Early Historic Period

Lā`ie was something of a backwater in the early 19th century with no reference made in many standard historical sources (Malo, Kamakau, `I`i, Kuykendall). The mission census of 1831/1832 recorded 452 people in Lā`ie seemingly the most populous *ahupua`a* in Ko`olauloa District (Schmitt 1973:19). By 1835 the reported population had dropped to 375, a 17% population drop over four years probably resulting primarily to introduced diseases and secondarily to out migration.

C. Mid-1800s (Land Commission Awards)

The Organic Acts of 1845 and 1846 initiated the process of the *Māhele* - the division of Hawaiian lands - which introduced private property into Hawaiian society. In 1848 the crown and the *ali`i* (aristocracy) received their land titles. The common people received their *kuleana* (individual parcels) in 1850. It is through records for Land Commission Awards (LCAs) generated at the *Māhele* that the first specific documentation of life in Lā`ie *Ahupua`a*, as it had evolved up to the mid-19th century, come to light.

Stewardship of Lā`ie passed from Kamehameha I to his half brother Kalaimamahū and on to his daughter Kekāuluohi and on to her son Lunalilo. In the *Māhele* of 1848 Lunalilo retained most of Lā`ie including the present project area under L.C.A. 8559-B

Kuleana awards for individual parcels within the *ahupua`a* were subsequently granted in 1850. These LCAs were presented to tenants - native Hawaiians, naturalized foreigners, non-Hawaiians born in the islands, or long-term resident foreigners - who could prove occupancy on the parcels before 1845. LCA documents recording these awards further clarify our understanding of the *`āina* from the perspective of the Hawaiian planter and fisherman in traditional times.

Over half of the claims included houselots and associated habitation features. Most of the claims included *lo`i* and many had *kula* lands. Also within the claims were scattered *`ili* in the mountains, fisheries, fishponds, *muliwai*, and even a place for drying tapa just south of the project area in Hau`ula. Historic influences can be seen in claims listing horse pastures and *pā* (a fenced area). Based on the LCA information, William C. Lunailo (LCA 8559-B) was awarded the entire area surrounding the current project area (Waihona `Aina, 2002). Other parcels awarded within Lā`ie *ahupua`a* however, indicate that much of the lowlands in the mid-1800's were being utilized for agriculture. Within the lowlands were many *lo`i*, irrigated by *`auwai* systems. The *lo`i* were interspersed with the *kula* lands fringing the foothills. All of the LCAs had associated agricultural plots except the two claims which do not represent individual *kuleana* awards (i.e. 8559-B to Lunailo). No *kuleana* claims were made in the vicinity of the present project area.

Agricultural activity was predominant and occurred in the lowlands and alluvial plains behind the coastal habitation zone. Within the lowlands lie the fields of *lo`i* irrigated by *`auwai* systems. The *lo`i* are interspersed geographically with the *kula* lands fringing the foothills and upland of the *lo`i*. In the *lo`i* and *kula* lands taro was the most prevalent crop. Other crops claimed included melon and watermelon, coffee, gourd, *`awa*, and *weuweu* (grasses). Clumps of *hau*, *hala*, *noni*, and *milo* trees were also grown in the *kula* lands. Further in the valleys where the cliffs become steep *lo`i* terraces continued along the streambanks and at the base of the steep valley walls.

D. Late 1800s and Early 1900s

The Mormon Mission bought extensive lands at Lā`ie in 1865 and soon began a sugar plantation. Whether lands adjacent to the present project area were planted in sugar or any other commercial crop is uncertain. In 1907 the Ko`olau Railway Company laid track just inland of the Government Road (predecessor of Kamehameha Highway) across Kokololio Stream and on south as far as Kahana Bay. An article in the *Pacific Commercial Advertiser* (January 1908 - cited in Condé, and Best 1973:309) notes:

From Lā`ie and on, especially between Hau`ula and Punalu`u the right of way of the little line had to be cut through miles of dense hau wood forests, the surveyors in running their preliminary lines having to practically tunnel their way. Going over the same ground today makes the statement hard to believe. The land on both sides of the line has been cleared off, grubbed out, and a considerable portion of it ploughed, and planted in rice and cane. Two thousand cords of *hau* have been shipped over the line to Kahuku Plantation during the year.

It is unclear whether the area around Kokololio Stream were cleared off and grubbed out but it seems likely this would have been in dense *hau* prior to 1907 and that clearing it would have involved significant ground impacts. The railroad went out of business in 1939.

The 1919 War Department Fire Control map (Figure 3) shows a railroad bridge crossing Kokololio Stream and one dwelling just to the northwest. The 1928-1930 USGS map of the area (Figure 4) appears to show a couple of more houses in the vicinity, an access road to the older house and possibly a new configuration of a bridge serving both the railroad and government road.

The State of Hawaii *Historic Bridge Inventory Island of Oahu* gives the following account of the Kokololio Stream bridge (also called the Laie Bridge) which was built in 1932:

The Laie bridge located across Kokolono [sic. "Kokololio"] stream on Kamehameha Highway .416 of a mile northwest of Kahikola [sic. Kahikole] Place was built in 1932. The contract was awarded to Moses Akiona who built three bridges between Hauula and Kahuku [Laieloa and Malaekahana bridges are the other two].

The bridge is a one span reinforced concrete deck girder structure 24' in total length, 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 Windward communities and around-the-island traffic.

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

The aesthetics are judged poor. (Thompson 1983:VII-77)

The more recent *State of Hawaii Historic Bridge Inventory and Evaluation* (May 1996, Spencer Mason Architects draft) does not identify this bridge as historically significant. The historic significance of this bridge was discussed with Ms. Tonia Moy, State Historic Preservation Division Architectural Historian, who indicated that the SHPD is not inclined to ask the Department of Transportation for preservation of the bridge but noted that the SHPD may desire further documentation (description and/or photographs) prior to destruction.

E. Modern Use

Currently, the project area consists of residential housing and a thicket of *hau* on the northeast and southeast (*maka'i*) side of the highway and stream gulch respectively. On the northwest side of the highway and stream gulch is an active farm (no housing structure) while on the southwest is a relatively untended pasture with abundant grasses and ground cover.

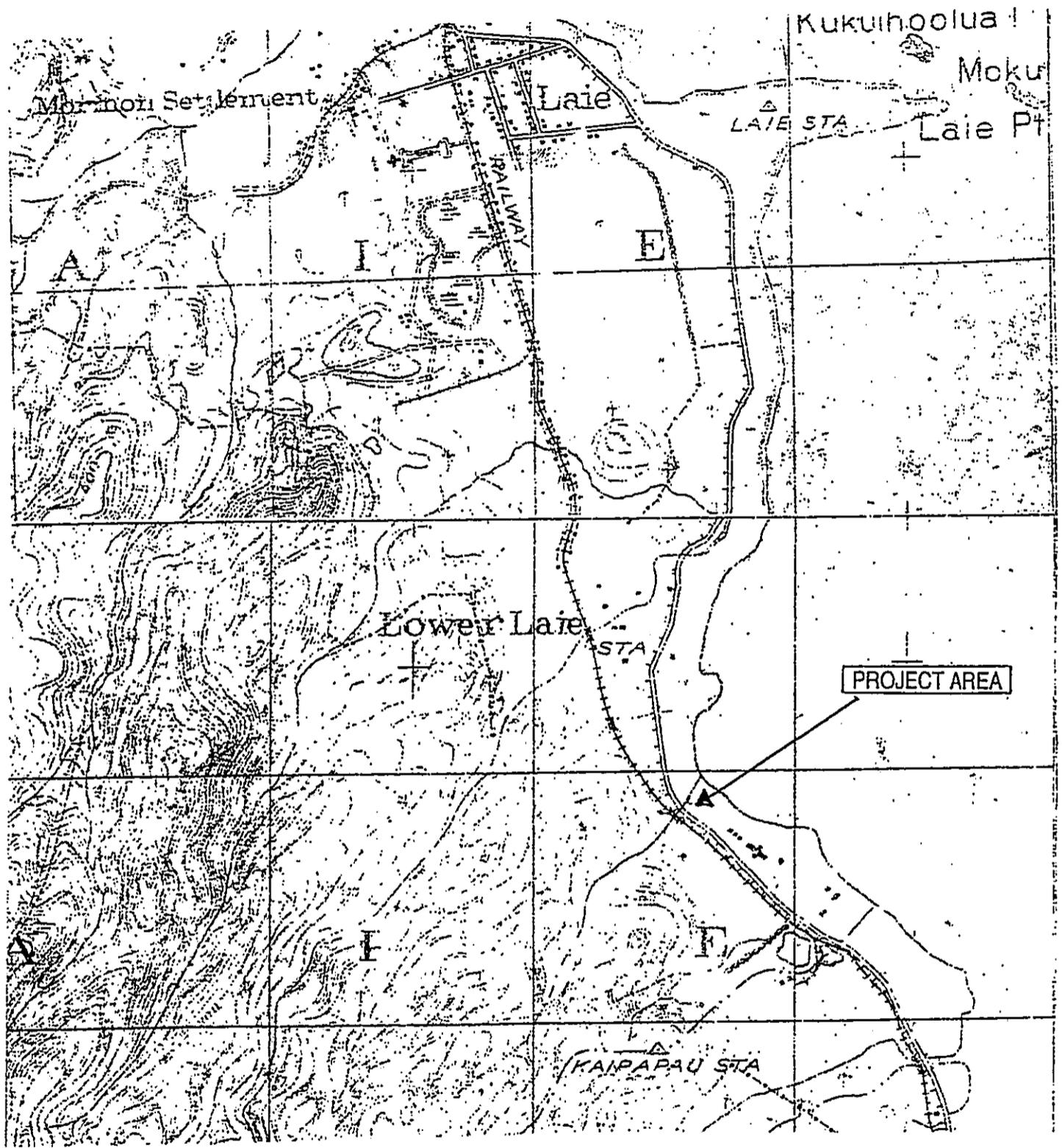


Figure 3 1919 War Department Fire Control Map Showing a Railroad Bridge Crossing Kokololio Stream (Note Dwelling to the Northwest)

III. PREVIOUS ARCHAEOLOGICAL RESEARCH

Twentieth century archaeological findings from reconnaissance surveys, inventory surveys, data recovery projects and inadvertent finds during development are the main source of our knowledge about the archaeological record in Lā'iemalo'o. Figure 5 shows the locations of the archaeological work in the last twenty years in the vicinity of the project area.

Numerous archaeological studies in the vicinity of Kakela Beach Park, Kokololio Beach Park and Kokololio stream gulch have recorded extensive cultural layers, subsurface features and human burials. The following offers a brief synopsis of previous archaeological research near Kokololio Stream followed by a table of previous archaeological work in Lā'iemalo'o and Lā'iewai *ahupua'a* (Table 1).

The earliest documented research in Lā'ie was completed by McAllister (1930) during his survey of O'ahu. Nine archaeological sites were recorded including Site 274, a fishing shrine; Site 276, a narrow and deep crevice with water at base; Site 277 Paeo Fishpond (dry); Site 278, location of the *akua* stone Kamehaikana was worshiped; Site 279, a tunnel with mythological ties to Manonihokahi; Site 281, Nioi *Heiau*, which has been the focus of subsequent investigations, primarily by Cachola-abad (1995) during the Lā'ie Wastewater Reclamation Facility study; Site 282, taro land (no longer cultivated); Site 283, Mochikili *heiau* (destroyed) and Site 285, Kauhukuuna Koa. In addition, one building (Site 5, Mormon Temple) was recorded.

An archaeological inventory survey and data recovery program were conducted on Kokololio Beach Park by Archaeological Consultants of the Pacific, Inc. (Kennedy, *et al.*, 1992). The study was conducted on a parcel approximately 100 m south of the current project area along the shoreline area *makai* of the highway. Three previously unrecorded sites including burials and fire pits were identified. Results from the data recovery program indicated that the sites were occupied as early as the 13th century.

In 1992-93 Cultural Surveys Hawai'i Inc. conducted archaeological monitoring from Hau'ula to Lā'ie for a new 14 inch watermain (Masterson, *et al.*: 1997). The waterline crossed the current project area where 2 sites (50-80-06-4797 and -4798) were encountered within 50 m of Kokololio Bridge. Site -4797 consisted of a buried cultural deposit with associated human burials approximately 70 m south of the bridge crossing. Site -4798 consisted of a buried cultural layer with associated human burials as well. A human burial was encountered approximately 65 m north of the bridge crossing.

A 1992 inventory survey identified over 121 features in the lands of Malaekahana and Lā'ie including a prehistoric agricultural complex (site -4463) and a pond field (site -4466) approximately 200 m west of the current project area (Dunn and Rosendahl, 1992).

Moore and Kennedy (1994) reported encountering seven human burials during archaeological monitoring at Kokololio Beach Park. The burials were designated State Sites 50-80-02-4830 through -4836.

Sarvak, *et al.* (1996) reported the inadvertent discovery of a human burial, slingstones and an *ulu maika* during archaeological monitoring at Kokololio Beach Park. The site was designated as State Site 50-80-02-5369.

Buffum and Dega (2001) conducted an archaeological inventory survey of 74 acres of land in Lā'ie approximately 600 m north of the project area, just south of the Polynesian Cultural Center. Seven sites were recorded including "two rock shelters (Sites -5866 and -5867), a series of six overhangs along a limestone cliff facing (Site 5868P, an historic *auwai* (Site 5869), a remnant historic bridge foundation (Site 5870), an historic ditch (Site 5871), and one retaining wall (Site 4474, Fe. D)" (Buffum and Dega, 2001:i).

Thus, in summary, the vicinity of the Kokololio Bridge has been notable for the number of archaeological finds. Approximately twenty burials have been reported (Bath 1988, Kennedy *et al.* 1992 a, b, Moore & Kennedy 1994, Sarvak *et al.* 1996, and Masterson *et al.* 1997) from the vicinity. While the work of Connolly III and Kennedy has emphasized that the Kokololio coastal area was the locus of temporary habitations with permanent coastal habitation focused further to the north within Lā'ie *Ahupua`a*, it seems inescapable that the Kokololio Beach Park was a significant area for burial. The archaeological monitoring report of work along Kamehameha Highway (Masterson *et al.* 1997) encountered cultural layers and associated burials within 100 m on either side of the bridge. The work of Dunn and Rosendahl (1992) has made it clear that a prehistoric agricultural complex was developed just 200 m to the west. Substantial Hawaiian activity in the immediate vicinity in pre-contact times is indicated

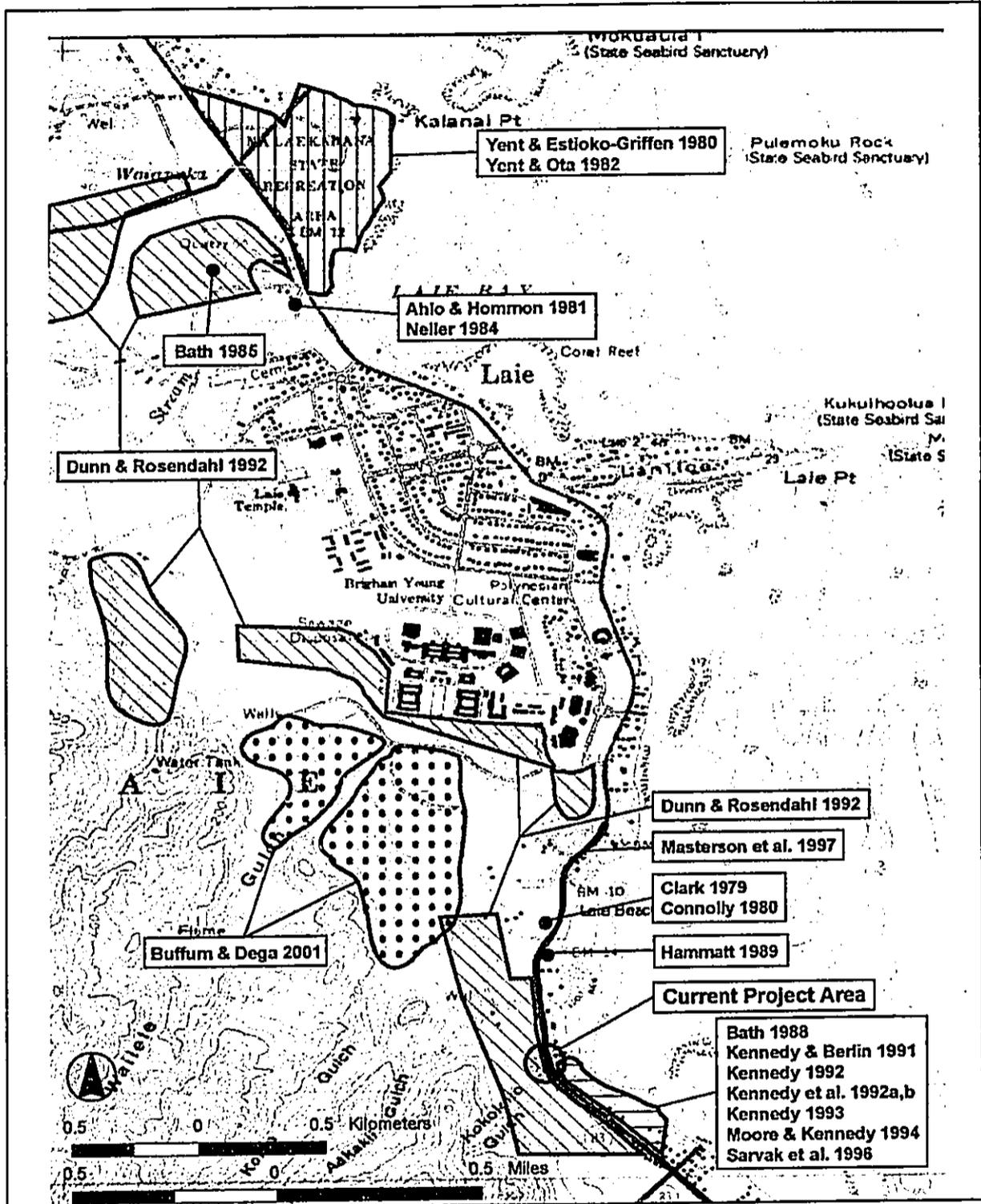


Figure 5 Previous Archaeology in the Vicinity of the Project Area.

Table 1. Previous Archaeological Research at Lā`ie

Date	Author(s)	Location of Study	Nature of Study	Results
1933	McAllister	Lā`ie Beach Park	Archaeology of O`ahu	Site 285- Kaihukuuna Ko`a
1979	Clark	Lā`ie Beach Park Site	Reconnaissance Survey	Discusses a mound and faced terrace
1980	Connolly, III	Lā`ie Beach Park Site	Subsurface Reconnaissance Survey	Ten test pits and auguring; emphasizes transitory short-term occupation
1981	Ahlo and Hommon	Kahawainui Stream, Lā`ie	Archaeological Survey	Reports no significant finds, but mentions remnant of a Shinto tori & a cemetery notes extensive land disturbance
1984 a	Barrera	Toe of ridge, Lā`ie	Archaeological Survey	Reports no significant finds
1984 b	Barrera	Wailele	Archaeological Survey	Reports no significant finds
1984	Neller	Lā`iewai Stream, Lā`ie,	Comments on the Kahawainui Stream Flood Control Study	Supplemental investigations to Ahlo and Hommon (1981) documenting Japanese cemetery & Shinto shrine, remains of a plantation camp, a railroad bed, sacred stone of Hauwahine, house ruins
1985	Bath	Kahawainui Stream, Lā`ie	Archaeological Testing (excavations, auger coring) and Mapping	Discusses 5 surface features incl. 2 graveyards, an alignment, a solution cave & a mound, Two "prehistoric" layers
1988	Bath	Kakela Beach Park	Burial Report	Recovered Bones

Date	Author(s)	Location of Study	Nature of Study	Results
1989	Hammatt	Point S. of Lā'ie	Reconnaissance Survey	Designates cave with burial and cultural material as Site -4705
1989	Kawachi	Pounder's Beach	Burial Report	Burial Removal
1990	Kawachi	55-202 Kam Hwy, Kikila	Burial Report	Human Burials
1990	Pietrusewsky	TMK 5-5-09	Burial Report	Report on Cranium Found
1991	Hammatt	Lā'ie Sewer Plant	Archaeological Survey	Reports no significant finds
1991	Kawachi	Pounder's Beach	Site Inspection	Investigation of Looted Rock Shelter
1991	Kennedy and Berlin	Kakela Beach Park	Data Recovery and Subsurface Testing	n/a
1992	Berge	Lā'ie Sugar Mill	Historical Archaeology	Lā'ie Sugar Mill 1868-1900
1992	Dunn, <i>et al.</i>	Malaekahana and Lā'ie	Inventory Survey	23 sites with 121+ component features
1992	Dunn and Rosendahl	Malaekahana and Lā'ie	Interim Report	Background, summary of findings
1992	Kennedy	Kakela Beach Park	Data Recovery	3 additional fire pits
1992	Kennedy, Denham & Moore	Kokololio Beach Park	Inventory Survey and Subsurface Testing	Identifies 3 human burials - sites 4476, -4477, -4478 and 12 fire pits, sites -4479, -4480, -4481, -4482
1992	Kennedy, Moore & Reintsema	Kokololio Beach Park	Data Recovery Report	Reports 4 burials, Sites -3744, -4476, -4477 & -4478 and 2 subsurface sites -4479 & -4480

Date	Author(s)	Location of Study	Nature of Study	Results
1993	Jourdane	Lā'ie	Burial Report	Inadvertent Discovery of Human Remains State Site# 50-80-02-4692
1993	Kennedy	Kakela Beach Park	Monitoring Report	Reports no significant finds
1994	McMahon	Hukilau Beach	Burial Report	Inadvertent Burial Discovery
1994	Moore & Kennedy	Kokololio Beach Park	Monitoring Report	Reports 7 burials, sites -4830 to -4836
1995	Cachola-abad	Lā'ie Waste Water Reclamation Facility	Evaluation of Sites 4460 and 4458	Study of Nioi Heiau
1995	Cachola-abad	Nioi <i>heiau</i> , Lā'ie Waste Water Reclamation Facility	Hawaiian Cultural Assessment	Study of Nioi <i>heiau</i>
1995	Collins	Lā'ie Waste Water Reclamation Facility	Field Visit	Human bone collected in three locales near Nioi <i>heiau</i>
1995	Halpern and Rosendahl	Lands of Malaekahana and Lā'ie	Archaeological Inventory Survey	Addendum for Lā'ie Master Plan project
1995	Jourdane	Lā'ie Elementary School	Burial Report	Inadvertent Burial Discovery
1995	Maly and Rosendahl	Lā'ie Waste Water Reclamation Facility	Cultural Assessment Study	Discusses Nioi <i>heiau</i> and other sites on immediately adjoining lands
1996	Sarvak, Moore and Kennedy	Kokololio Beach Park	Monitoring Report	Reports a burial, slingstones, <i>ulu maika</i> at Site -5369

Date	Author(s)	Location of Study	Nature of Study	Results
1996	Haun	Lā'ie Waste Water Reclamation Facility	Archaeological Inspection	Notes fencing & signage in place
1997	Masterson, Heidel, Pyle, Shideler & Hammatt	Kapaka to Lā'ie Waterline	Monitoring Report	2 sites designated within 50 m, -4797 & -4798 each consisting of a cultural deposit & human burials
2000	Elmore & Kennedy	N of Kokololio Gulch, <i>Mauka</i> of Hwy.	Burial report	Burial designated site -5798
2000	Moore & Kennedy	BYU Campus	Archaeological monitoring report	Reports human remains from McKay Auditorium (number of individuals uncertain)
2000	Sinoto & Titchenal	Lā'ie Beach Park	Archaeological Inventory Survey	9 backhoe trenches & 1 test unit - minimal findings
2001	Buffum & Dega	Toe of foot hills, S. of PCC	Archaeological Inventory Survey	Identifies 7 sites incl. rock shelters, overhangs, an <i>'auwai</i> , bridge foundation & ditch

IV. RESULTS OF FIELD CHECK

An archaeological field assessment of Kokololio Bridge was performed on April 16, 2002 by CSH archaeologist David Perzinski. All accessible areas in an approximate 100 m radius of the bridge were assessed for potential archaeological encumbrances associated with the demolition and construction of the bridge and temporary bypass to be constructed on the west (*mauka*) side of the highway. Figure 6 shows the location of the proposed temporary bypass relative to the existing bridge and stream.

Kokololio Bridge is located just north of Kokololio Beach Park and approximately 600 m south of Pounders Beach Park. The immediate area surrounding the bridge consists of a fenced-in open field with scrub vegetation and grasses on the west (*mauka*) side of the highway, a private residence (55-105 Kamehameha Highway) on the northeast side of the bridge and a dense stand of *hau* and a second residence (55-095 Kamehameha Highway) on the southeast side of the bridge. The current bridge is constructed of concrete with steel guard rails on either side. The bridge is approximately 8 m in length and spans across Kokololio Stream gulch which is 3 m below the road surface (Figure 7). The bridge appears as described in the State of Hawaii *Historic Bridge Inventory Island of Oahu* as:

a one span reinforced concrete deck girder structure 24' in total length, 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. (1983:VII-77)

The stream flows through the fenced area on the *mauka* side of the highway, passes beneath the bridge and flows between the two private residences.

Historic features noted during the assessment include a probable modern wall (less than 50 years old) and a drainage canal paralleling Kamehameha Highway on the *mauka* side. No surface traditional Hawaiian sites or features were observed during the assessment.

Extending north off of the Kokololio Beach Park entrance and driveway to the residence at 55-095 Kamehameha Highway is an approximately 50 m long cement mortared basalt boulder wall which comes within 15 m of the southeast side of the bridge. The wall is 40 cm in width and ranges in height from 20-70 cm. The wall does not appear to be over 50 years old. Based on the bridge replacement plan and temporary bypass, provided by Mitsunaga and Associates, Inc., there will be no alteration of this probable modern feature.

A drainage canal on the *mauka* side of the highway (Figure 8) roughly parallels the highway and empties into Kokololio Stream approximately 15 m inland of the Kokololio Bridge and was likely associated with historic agricultural activities (i.e. sugar cane cultivation). The canal has an average width of 5 m and depth of 2-3 m. This *mauka* drainage canal passes through a culvert lined with dressed and rough basalt boulders 50 m south of the Kokololio Bridge. The culvert allows passage over the drainage canal to a graded grassy former pasture on the *mauka* side of the highway. This may relate to the former Ko'olau Railway Company (1907) railroad which would have been in the immediate area. A portion of the canal is partially lined with basalt and concrete though this lining appears to have undergone extensive erosion. Only a sample (approximately 10 m) of the lining is still intact. Vegetation currently covers the base of the canal.

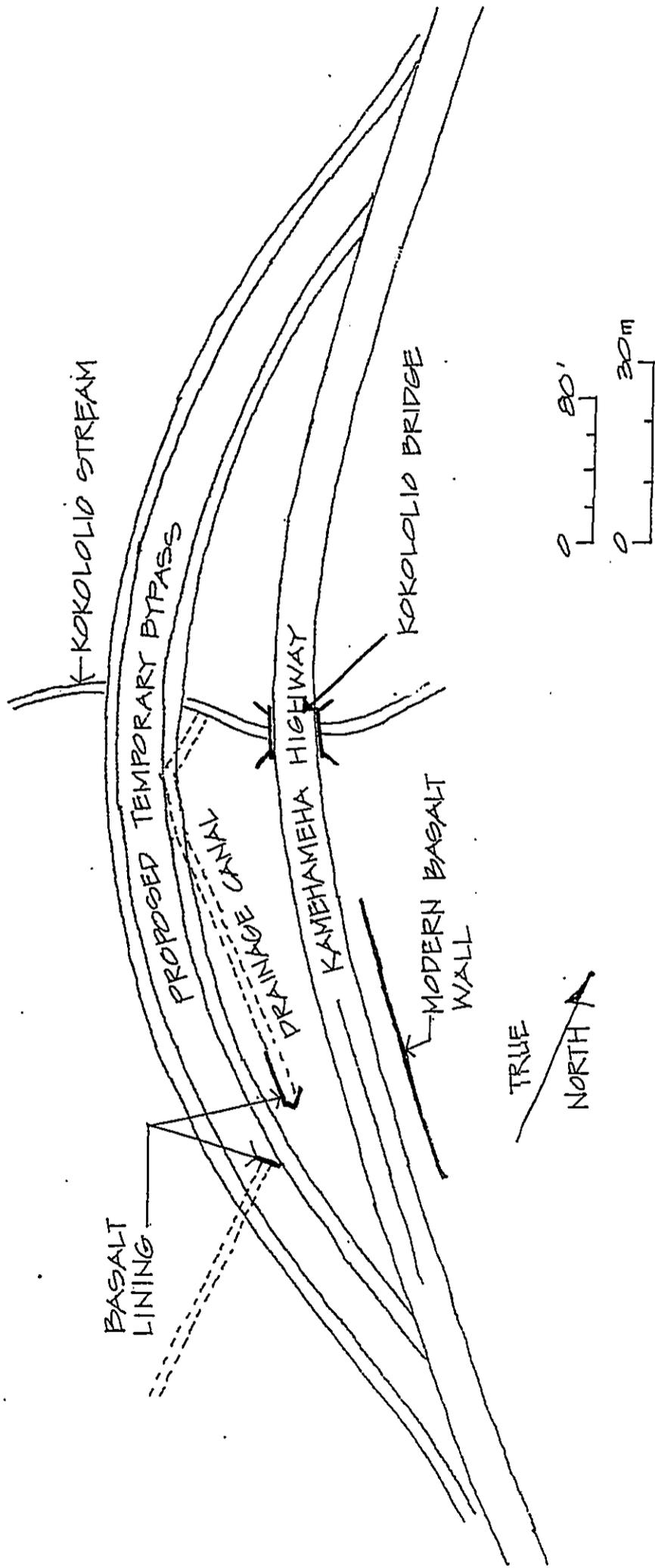


Figure 6 Plan View Map of Proposed Bridge Replacement and Location of Temporary Bypass

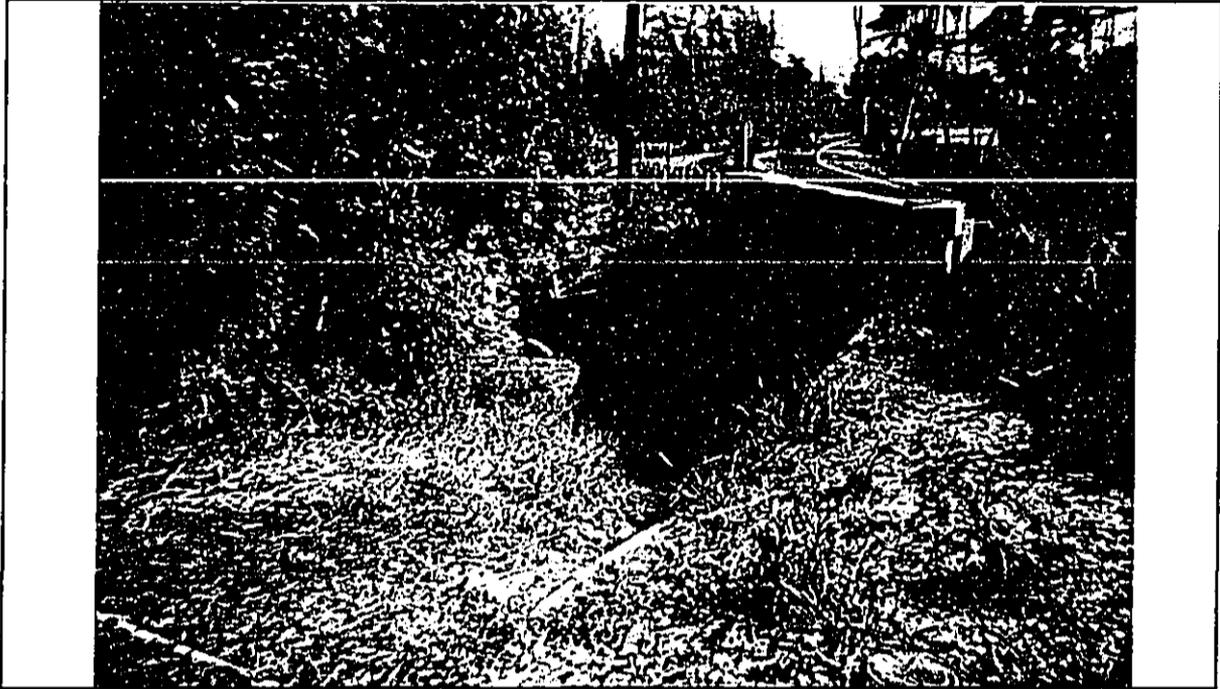


Figure 7 View North of Existing K okololio B ridge and Gulch.



Figure 8 View West of Basalt Lining in Drainage Canal Paralleling Kamehameha Highway.

Based on the proposed bridge replacement plan, the temporary bypass is to angle west off of Kamehameha Highway approximately 120 m south of Kokololio Bridge, cross the culvert, drainage ditch, pasture and stream and reach a maximum distance from the highway of approximately 30 m where it crosses Kokololio Stream. After crossing Kokololio Stream, the proposed temporary bypass will reconnect with Kamehameha Highway approximately 120 m north of Kokololio Bridge.

V. RECOMMENDATIONS

Historical background research including mythological accounts, LCA documentation, and previous archaeological research suggests that Lā'iemalo'o *Ahupua`a* including the area surrounding the present project area was a foci for cultural activity from pre-contact times to the present.

Previous archaeological research has recorded several human burials in the vicinity of Kokololio Stream. Seven human burials were reported from inventory survey and data recovery work at Kokololio Beach Park (Kennedy 1992 a, b). Seven additional burials were later recorded during archaeological monitoring at Kokololio Beach Park (Moore and Kennedy, 1994) and were assigned State Site #s -4830 to -4836. Elmore and Kennedy (2000) recorded a human burial just north of Kokololio Gulch, *mauka* of Kamehameha Highway. Several additional burials have been reported from Kakela Beach Park (Bath, 1988) located less than 1 km south of the present project area and from Pounder's Beach Park (Kawachi, 1989) which lies less than 1 km north of the present project area. Archaeological monitoring work (Masterson *et al.* 1997) associated with a sewer line project right along Kamehameha Highway encountered two sites, both including burials and cultural layers, each extending within 50 m of Kokololio Bridge. A human burial was encountered approximately 65 m north of the bridge crossing.

The Kokololio Bridge Replacement Project area lies in close proximity to documented cultural layers with associated human burials. Though the current land surface appears to have been extensively grubbed over the previous century, rendering it relatively free of surface archaeological resources, there is a strong indication that additional cultural layers and/or human burials may exist in the underlying substrate. Therefore, it is recommended that an archaeological monitoring program with on-site archaeological monitoring should accompany any significant subsurface excavation associated with the proposed bridge replacement and temporary bypass construction activities. The probability of burials or other significant subsurface finds does not, however, appear to necessitate prior subsurface inventory survey or monitoring of geotechnical testing studies which typically involves only a few five inch diameter holes. This recommendation for on-site monitoring would remain in effect unless the archaeologist, in consultation with the SHPD/DLNR, finds sufficient evidence (i.e. absence of subsurface cultural deposits, features, Jaucus sand, etc.) to halt on-site archaeological monitoring. Any departure from on-site monitoring would only follow the agreement of the SHPD. In the event that any human burials or other significant archaeological finds are encountered, all work should stop and the SHPD/DLNR be notified promptly.

The Kokololio Stream Bridge (also known as the Laie Bridge) was built in 1932. The *State of Hawaii Historic Bridge Inventory and Evaluation* (May 1996, Spencer Mason Architects draft) does not identify this bridge as historically significant. The historic significance of this bridge was discussed with Ms. Tonia Moy, State Historic Preservation Division Architectural Historian, who indicated that the SHPD is not inclined to ask the Department of Transportation for preservation of the bridge but noted that the SHPD may desire further documentation (description and/or photographs) prior to destruction. We thus recommend continuing consultation with the SHPD so that appropriate documentation is accomplished prior to destruction or substantial alteration.

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Cultural Impact Evaluation for the Kokololio Bridge Replacement Project

No formal Cultural Impact Assessment was carried out in support of this project. The rationale here was primarily that the replacement bridge will go in the same place as the existing bridge and that any impacts are thought likely to be temporary. The temporary bridge and access roads will traverse an area primarily in exotic grass pasture. The discussion below is intended to be a good faith evaluation of cultural impacts on the basis of available information.

A. Archaeological Resources and Burials

There are no known archaeological resources within the project area per se (Perzinski and Hammatt 2002). There were no *kuleana* claims within the project area.

The general vicinity of the project area has, however, been notable for the number of archaeological finds. Approximately twenty burials have been reported (Bath 1988, Kennedy *et al.* 1992 a, b, Moore & Kennedy 1994, Sarvak *et al.* 1996, and Masterson *et al.* 1997) from the vicinity. While the work of Connolly III (1980) and Kennedy has emphasized that the Kokololio coastal area was the locus of temporary habitations with permanent coastal habitation focused further to the north within Lā'ie *Ahupua`a*, it seems inescapable that the Kokololio Beach Park was a significant area for burial. The archaeological monitoring report of work along Kamehameha Highway (Masterson *et al.* 1997) encountered cultural layers and associated burials within 100 m on either side of the bridge. The work of Dunn and Rosendahl (1992) has made it clear that a prehistoric agricultural complex was developed just 200 m to the west. Substantial Hawaiian activity in the immediate vicinity in pre-contact times is indicated.

In order to address the prospect of cultural layers and associated burials an Archaeological Assessment in support of this project has recommended on-site archaeological monitoring.

B. Hunting

The foothills, interior valleys, and upper slopes of Hau`ula are understood to have "sparse" densities of pigs but wild pig populations are not shown to be in the coastal margins of Hau`ula (van Ripper and van Ripper III 1982:25).

C. Plant Resources

Vegetation in the vicinity of the project area consists of a mixed ground cover of mostly introduced species such as California grass, `ape, hau, *opiuma*, as well as fruit trees such as banana and breadfruit. It is not anticipated that the proposed temporary by-pass road will adversely effect the plant communities in the area in any significant way.

D. River Resources- Stream

Kokololio Stream is not a perennial stream (State of Hawaii and National Park Service 1990:30) and was not flowing into the sea at the time of our field work. There are no known riparian resources in the vicinity of the project area that would have been traditionally used. Kokololio Stream retained stagnant water at the time of assessment though steep erosion at the banks suggested that the stream is subject to flash flooding during periods of heavy rain

E. Sacred Sites

Sacred sites documented in the general vicinity include Nioi Heiau (Site -281), Mo`ohikili Heiau (Site 283), an *akua* stone known as Kamehaikana (Site 278) and fishing shrines (Sites 274 and Site 285 named Kauhukuuna Koa). None of these sacred sites is located within or near the area of likely impact.

F. Trails

It is understood that a traditional Hawaiian trail ran along the coast of Ko`olaupia District. Whether this followed the approximate alignment of Kamehameha Highway in the vicinity of the current project area or lay further *makai* right along the coast is uncertain. Kamehameha Highway and its margins affords access to the area.

G. Wahi Pana (Storied Places)

In addition to the sacred sites touched on above, identified *wahi pana* in the general vicinity include Laniloa Point and the off-shore islets (associated with Laniloa the *mo`o*), the site near the present Mormon Temple associated with the twins in the Lā`ie i ka wai story, the Mormon Temple itself, and Site -279 a tunnel with mythological ties to Manōnihokahi. None of these *wahi pana* is understood as near the present study area.

Conclusion

This good faith cultural impact evaluation concludes that the only potential for impact to cultural resources is the possibility of impacts to burials and/or archaeological resources. This would be mitigated through an archaeological monitoring program.

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Appendix E

Department of Land & Natural Resources
State Historic Preservation Division Correspondence

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII



STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

HISTORIC PRESERVATION DIVISION
KAKUHIHEWA BUILDING, ROOM 566
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HISTORIC PRESERVATION
LAND
STATE PARKS

September 9, 2002

Mr. David Shideler
Cultural Surveys Hawaii, Inc.
733 N. Kalaheo Avenue
Kailua, Hawaii 96734

LOGNO: 30692
DOC NO: 0209tm02
Architecture

Dear Mr. Shideler.

**SUBJECT: Kokololio Bridge Replacement
Kamehameha Highway, Laie, Oahu**

The Kokololio Bridge is not listed in the 1996 *Draft Historic Bridge Inventory and Evaluation*. As such, we will concur with the replacement of Kokololio Bridge with the stipulation that we receive photo-documentation using HABS/HAER standards. We would appreciate receiving photos of the approaches and the two side elevations. We understand that the Archaeology Branch is reviewing the assessment report.

Thank you for the opportunity to comment. Should you have further questions, please feel free to call Tonia Moy at (808)692-8030.

Aloha,

A handwritten signature in black ink, appearing to read "Don Hibbard".

DON HIBBARD, Administrator
State Historic Preservation Division

TM:jk

DOCUMENT CAPTURED AS RECEIVED



OF HAWAII

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

DEPUTIES
ERIC T. MIRANO
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DEPARTMENT OF LAND AND NATURAL RESOURCES

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BOATING AND OCEAN RECREATION
COMMISSION ON WATER RESOURCE
MANAGEMENT
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FORESTRY AND WILDLIFE
HISTORIC PRESERVATION
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October 21, 2002

Mr. David W. Shideler, O`ahu Office Manager
Cultural Surveys Hawaii
733 N. Kalaheo Avenue
Kailua, Hawaii 96734

LOG NO: 30981 ✓
DOC NO: 0210SC09

Dear Mr. Shideler:

SUBJECT: National Historic Preservation Act - Section 106 Compliance: Archaeological Assessment Prepared in Support of the Proposed Replacement of the Kokololio Bridge
La`iemalo`o, Ko`olauloa, O`ahu
TMK: (1)-5-5-001: 007 & 055; and 5-5-006: 011

This letter reviews this archaeological assessment which was received August 2, 2002, (Perzinski & Hammatt. 2002. *An Archaeological Assessment for the Proposed Replacement for Kokololio Bridge, La`ie (Malo`o) Ahupua`a, Ko`olauloa, O`ahu* TMK: 5-5-01: 7 and 55; and 06:11).

Despite the past land use history of cultivation and other agricultural development, we believe that there is a potential for significant historic sites, including human burials, to be encountered in the bypass road corridor. We note that, for example, the burial find reported in Elmore and Kennedy (2000) was in an existing agricultural field, and in a Jaucas Sands deposit underlying the alluvial cultivation layer. Thus, given the record of previous finds made in and around the area of the existing bridge, as you have documented, we believe that an inventory survey with subsurface testing should be conducted along the proposed corridor for the temporary bypass road prior to any construction work. Once the survey is completed, a report of findings should be submitted to our office for review. If significant historic sites are present, and if they will be adversely affected by the proposed bridge replacement, then mitigation plans will need to be developed in consultation with our office.

Should you have any questions about archaeology, please feel free to contact Sara Collins at 692-8026. Should you have any questions about burial matters, please feel free to contact Kai Markell at 587-0008.

Aloha

Gilbert Coloma-Agaran
State Historic Preservation Officer

SC:jk

c: Mr. A. Van Horn Diamond, Chair, O`ahu Island Burial Council
Mr. Kai Markell, Director, Burial Sites Program

DOCUMENT CAPTURED AS RECEIVED

LINDA LINGLIE
GOVERNOR OF HAWAII



GILBERT S. COLOMA-AGARAN, CHAIRPERSON
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December 3, 2002

James Fu
State of Hawaii Department of Transportation
Highways Division, Bridge Design
601 Kamokila Blvd, Room 611
Kapolei, Hawaii 96707

LOG NO: 31236 ✓
DOC NO: 0211EJ24

Dear Mr. Fu:

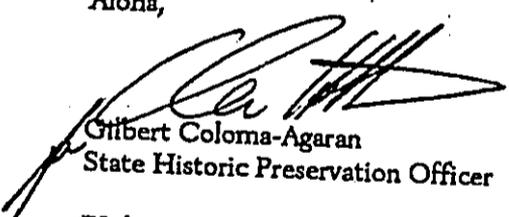
SUBJECT: National Historic Preservation Act Section 106 Review - Draft Environmental Assessment Kokololio Stream Bridge Replacement [Federal/FHWA]
La'iemalo'o, Ko'olaupua, O'ahu
TMK: (1) 5-5-001:007 & 055: 5-5-006:011

Thank you for the opportunity to comment on the DEA for the proposed Kokololio Stream bridge replacement project. We received the DEA on November 8, 2002, and provide the following comments.

We believe that the draft EA in Section 3.3.4 adequately summarizes our comments and discussions regarding the project's effect on significant historic sites. Our comments recommending that an archaeological inventory survey with subsurface testing be conducted within the graded areas only (not proposed filled areas), will be included in the final EA.

Should you have any questions about archaeology, please feel free to call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027. Should you have any questions about architectural matters, please feel free to contact Tonia Moy at 692-8030. Should you have any questions regarding burial matters please feel free to call Kai Markell at 587-0008.

Aloha,


Gilbert Coloma-Agaran
State Historic Preservation Officer

EJ:jk

c: OEQC
Leslie Kurisaki, Kimura International, Inc. 1600 Kapi'olani Boulevard, Suite 1610,
Honolulu, HI 96814
Mr. A. Van Horn Diamond, Chair, O'ahu Island Burial Council
Mr. Kai Markell, Director, Burial Sites Program