

DRAFT ENVIRONMENTAL ASSESSMENT

Hanapepe River Bridge Replacement, Kaumualii Highway, State Route 50, Island of Kauai, Hawaii

Project No. HI STP SR50(1)

TMKs: : [4] 1-9-007: 001 por. Hanapepe River, 013 por., and 034 por.,
and 1-9-010: 014 por., 015 por., 046 por., and 050 por.
Kaumualii Highway and Iona Road Rights-of-Way

Submitted Pursuant to Hawaii Revised Statutes, Chapter 343



State of Hawaii, Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, HI 96813

May 2016

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Prepared for:
State of Hawaii, Department of Transportation
Highways Division
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- Consultation Letter Requesting Species and Critical Habitat List (dated November 21, 2014)
- Hawaii Bridges Program Summary Map Set (Hanapepe River Bridge only)
- Correspondence from U.S. Fish and Wildlife Service (dated December 22, 2014)
- Correspondence from State of Hawaii Division of Aquatic Resources (dated January 9, 2015)
- Consultation Letters (dated February 23, 2016)
- Biological Assessment for the Proposed Hanapepe River Bridge Project, January 2016

D Draft Archaeological Inventory Survey Report for the Hanapepe River Bridge Replacement Project, Hanapepe Ahupuaa, Waimea District, Kauai, March 2016

E Historic Resource Inventory Form, Reconnaissance Level, March 23, 2016

F Cultural Impact Assessment Report, April 2016

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

- Legal Notice
- Letter Initiating Consultation (dated August 26, 2015)
- Area of Potential Effects (U.S. Geological Survey Map and Aerial Imagery)
- Correspondence from Office of Hawaiian Affairs (dated September 30, 2015)
- Kauai Historic Preservation Review Commission Minutes (Meeting on October 1, 2015)
- Correspondence from Historic Hawaii Foundation (dated December 9, 2015)
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Acronyms and Abbreviations

°F	degrees Fahrenheit
µg/m ³	micrograms per cubic meter
AASHTO	American Association of State Highway and Transportation Officials
ACM	asbestos-containing material
ADA	Americans with Disabilities Act
ADT	average daily traffic
AIS	Archaeological Inventory Survey
AMSD	approximate minimum search distance
amsl	above mean sea level
APE	Area of Potential Effects
ASTM	ASTM International
BA	Biological Assessment
BMP	best management practice
CAA	Clean Air Act
CAS	Certified Asbestos Supervisor
CE	Categorical Exclusion
CEQ	Council of Environmental Quality
CER	computerized environmental report
CFLHD	Central Federal Lands Highway Division
CFR	<i>Code of Federal Regulations</i>
CIH	Certified Industrial Hygienist
CO	carbon monoxide
CRM	concrete rubble masonry
CSH	Cultural Surveys Hawaii
CWA	Clean Water Act
CZM	Coastal Zone Management
DAR	State of Hawaii Division of Aquatic Resources
dBA	decibels (A-weighted scale)
DLNR	State of Hawaii Department of Land and Natural Resources
DOT	U.S. Department of Transportation
EA	Environmental Assessment
EDR	Environmental Data Resources
EIS	Environmental Impact Statement
ESA	Endangered Species Act
FEMA	Federal Emergency Management Agency
FFY	Federal Fiscal Year
FHWA	Federal Highway Administration
FWCA	Fish and Wildlife Coordination Act
FWPCA	Federal Water Pollution Control Act
HAR	Hawaii Administrative Rules

HDOH	State of Hawaii Department of Health
HDOT	State of Hawaii Department of Transportation
HEER	Hazard Evaluation and Emergency Response
HmA	Hanalei silty clay loam, 0 to 2 percent slopes
HOT	High occupancy toll
HOV	high occupancy vehicle
HRS	Hawaii Revised Statutes
JkB	Jaucus loamy fine sand, dark variant, 0 to 8 percent slopes
KIUC	Kauai Island Utility Cooperative
kV	kilovolt
LBP	lead-based paint
LRFD	Load and Resistance Factor Diagram
LUST	leaking underground storage tank
<i>makai</i>	oceanward
MAP-21	Moving Ahead for Progress in the 21st Century Act
<i>mauka</i>	mountainward
MBTA	Migratory Bird Treaty Act
MP	Milepost
mph	miles per hour
MSAT	mobile source air toxics
N/A	not applicable
NEPA	National Environmental Policy Act
NFA	No Further Action
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NO ₂	nitrogen dioxide
NOAA	National Oceanic and Atmospheric Administration
NOI	Notice of Intent
NPDES	National Pollutant Discharge Elimination System
NRHP	National Register of Historic Places
OEQC	Office of Environmental Quality Control
OP	Office of Planning
PdA	Pakala clay loam, 0 to 2 percent slopes
PM _{2.5}	particulate matter less than 2.5 microns
ppb	parts per billion
ppm	parts per million
ROW	right-of-way
SHPD	State Historic Preservation Division
SHPO	State Historic Preservation Officer
SHWS	State Hazardous Waste Site
SIHP	State Inventory of Historic Properties

SMA	Special Management Area
SO ₂	sulfur dioxide
SPCC	spill prevention, control and countermeasure
STIP	Statewide Transportation Improvement Program
SWCA	SWCA Environmental Consultants
TMDL	Total Maximum Daily Load
TMK	Tax Map Key
USACE	U.S. Army Corps of Engineers
U.S.C.	U.S. Code
USEPA	U.S. Environmental Protection Agency
USFWS	U.S. Fish and Wildlife Service
USGS	U.S. Geological Survey
WQC	water quality certification

Project Summary

Table PS-1 contains a description of the project and applicable land-use designations.

TABLE PS-1

Project Summary

Project Name	Hanapepe River Bridge Replacement, Kaunualii Highway, State Route 50, Island of Kauai
Proposing/Determination Agency	State of Hawaii Department of Transportation
Anticipated Determination	Finding of No Significant Impact under Hawaii Revised Statutes (HRS) Chapter 343
Tax Map Key(s)	[4] 1-9-007: 001 por. Hanapepe River, 013 por., and 034 por., and [4] 1-9-010: 014 por., 015 por., 046 por. and 050 por., Kaunualii Highway and Iona Road Rights-of-Way; see Figures 1-3, 1-4, and 1-5.
Existing Uses of the Project Corridor	Roadway through Hanapepe town
State Land Use	Urban District
Special Management Area	No
Kauai General Plan	Residential Community
Zoning	Commercial (C-G), Residential (R-4), Open (O)
Proposed Project	This project would replace the existing three-span structure with a slightly longer and wider three-span bridge that would accommodate two 12-foot travel lanes, two 8-foot shoulders, and two 5-foot sidewalks. A temporary two-lane bypass route would be provided on the <i>mauka</i> (mountainward) side of the highway throughout construction. The project also includes scour protection, supporting walls and slopes, utility relocations, and temporary staging areas. This project would improve mobility for highway users; address existing structural deficiencies; and meet current design standards for roadway width, load capacity, barrier railing and transitions, and approach roadways.
Anticipated Impacts	Short-term construction related impacts (noise, dust, and erosion) would occur, but the implementation of best management practices would minimize the effects to the environment. A traffic control plan would mitigate temporary traffic impacts. Protected seabirds and waterbirds, and the Hawaiian hoary bat, have the potential to occur within the project limits, but restrictions on the timing of construction and minimization of the project footprint would preclude any long term effects to the species. Effects to two historic architectural resources—the bridge and a portion of the levee/wall—would be minimized and mitigated through project design.

Preface

The proposed project involves replacing the Hanapepe River Bridge, which is located on Kaunualii Highway (State Route 50) in the Waimea District, island of Kauai. As the proposed project would involve the use of State funds and State lands (comprising the Kaunualii Highway rights-of-way, under the jurisdiction of State of Hawaii Department of Transportation, compliance with Hawaii Revised Statutes (HRS) Chapter 343 is required. This Draft Environmental Assessment (EA) has been prepared pursuant to HRS Chapter 343 (as amended), and Title 11, Chapter 200, Hawaii Administrative Rules.

The project would also use Federal funding provided by the U.S. Department of Transportation Federal Highway Administration (FHWA). Use of Federal funds subjects the project to environmental documentation requirements set forth under the National Environmental Policy Act (NEPA) of 1969; (42 U.S. Code Section 4321); the Council of Environmental Quality Regulations; 40 *Code of Federal Regulations* (CFR) Parts 1500-1508; and 23 CFR Parts 625, 640, 712, 771, and 790, Environmental Impact and Related Procedures. To comply with NEPA, FHWA is preparing environmental documentation that would be consistent with the findings of this EA.

Introduction

1.1 Proposing Agency and Action

The State of Hawaii Department of Transportation (HDOT) proposes to replace the Hanapepe River Bridge on the island of Kauai. This Draft Environmental Assessment (EA) has been prepared in compliance with Hawaii Revised Statutes (HRS) Chapter 343.

This project would replace the existing three span structure with a slightly longer and wider three-span bridge that would accommodate two 12-foot travel lanes, two 8-foot shoulders, and two 5-foot sidewalks. The project would improve mobility for all highway users; address existing structural deficiencies; meet current design standards for roadway width, load capacity, pedestrian and bicycle traffic, bridge railing and transitions, bridge approaches; and protect against scour.

1.2 Project Overview

The proposed Hanapepe River Bridge project is located at Milepost (MP) 16.6 on Kaumualii Highway (State Route 50 or highway) in the Waimea District on Kauai (see Figures 1-1 and 1-2). The bridge and highway are under the jurisdiction of HDOT. The land under the Hanapepe River is owned by Alexander and Baldwin, Inc. The bridge site is located approximately 0.35 mile upstream from the outlet to Hanapepe Bay. Tax Map Key (TMK) information for the affected properties is shown on Figures 1-3 through 1-5. Photos of the Hanapepe River Bridge are included on Figure 1-6.

The Hanapepe River Bridge, built in 1938, is a concrete tee-beam bridge with two piers and three arched spans. The bridge measures 275 feet long and 35 feet, 10 inches wide (from outside of rail to outside of rail). There are two 12-foot-wide travel lanes and two 5-foot-wide raised sidewalks on each side.

Kaumualii Highway is classified as an Urban Minor Arterial with a posted speed limit of 35 miles per hour (mph) at the project location. In 2010, HDOT recorded an average daily traffic (ADT) count of 15,700 vehicles along the section of Kaumualii Highway that includes Hanapepe River Bridge. The 2016 construction year ADT is projected to be 16,330, and the 2036 design year ADT is projected to be 18,435.

Although not on the National Highway System, Kaumualii Highway is the primary route to the Hanapepe-Eleele and Waimea areas. It provides the only regional access for Kauai's west-side communities, a route that is vital for economic development, emergency response and safety, and general welfare. The highway is essential for connectivity to other modes of transportation, including Lihue Airport and the harbors at Nawiliwili and Port Allen. It also provides the only land transportation access for the U.S. Pacific Missile Range Facility at Barking Sands, which is approximately 15 miles west, and the only public landfill on the island, Kekaha Landfill. In addition to being a regional highway, Kaumualii Highway is the main corridor for local circulation in the town of Hanapepe. When the highway was constructed in the 1930s, the alignment bypassed the historic commercial center and attracted the development of retail businesses and services, community facilities, and churches. Consequently, numerous travel destinations are located along the highway. In addition to motorists, the highway is used by bicyclists and pedestrians.

The project area boundary extends between the east and west approaches to Hanapepe River Bridge and approximately 300 feet upstream and downstream of the bridge for the temporary bypass route and streambank improvements for scour protection and erosion control. The proposed improvements constitute a stand-alone project that would address the bridge condition, regardless of whether other highway system improvements are undertaken.

1.3 Project Purpose and Need

The purpose of the proposed project is to improve the Hanapepe River Bridge and its roadway approaches to maintain the river crossing as a safe and functional component of the regional transportation system. Several deficiencies or existing problems have been identified and the project is intended to address the following needs.

The bridge is considered structurally deficient. The U.S. Department of Transportation (DOT) requires that bridges be inspected every 2 years. The National Bridge Inventory Standards inspection produces a sufficiency rating, which is a single number that can vary from a high score of 100 to a low score of 0; scores higher than 50 indicate that a bridge meets current engineering design standards. Based on the most recent 2013 bridge inspection report, the Hanapepe River Bridge has a sufficiency rating of 22.8 and is considered structurally deficient because of the following five conditions:

- The bridge is unable to accommodate heavy loads. The inventory load rating (daily carrying capacity) is 0.53, which is below the minimum standard of 1.0 (American Association of State Highway and Transportation Officials [AASHTO], 2012). As the bridge's condition worsens, the load rating will likely need to be lowered.
- The bridge deck and superstructure are in poor condition. Significant girder cracks are present and are continually monitored, as the cracks continue to worsen. Surface cracking of the roadway at the abutments are creating a pathway for water to infiltrate the substructure.
- The bridge substructure is in poor condition. Cracking and spall repairs are evident throughout the structure, and can be expected to increase in length and number because of the corrosive coastal environment.
- There are concerns with scour that have led to HDOT's identification of the Hanapepe River Bridge as a scour critical bridge. A Scour Critical Bridge Plan of Action was prepared in 2011. The 2011 bridge inspection report indicated that scour is occurring at both piers and at the Lihue-side abutment. Pier scour has exposed the untreated timber piles, which has caused upstream timber piles to deteriorate because of debris impact, microorganisms, and age-related wear.
- The bridge does not meet current seismic standards or conform to AASHTO Load and Resistance Factor Design (LRFD) Bridge Design Specifications (AASHTO, 2012). The current bearing assemblies will continue to be susceptible to seismic collapse as they are not designed for seismic loading.

The bridge is also considered functionally obsolete for two reasons:

- The bridge railing is deteriorating and, at 32 inches high, does not meet the standard 42-inch-minimum height for pedestrian and bicyclist safety. The existing railing also contains openings larger than allowed by the current design code.
- The bridge is too narrow. The existing structure is 35 feet, 10 inches from rail to rail, accommodating two, 12-foot-wide travel lanes and two raised 5-foot-wide sidewalks. The width does not provide for a standard 8-foot-wide shoulder over the bridge, as there are currently no shoulders. The shoulder standard is based on the roadway's Urban Arterial functional classification and the volume of traffic (over 16,000 average daily traffic in 2016). Shoulders are the portion of the roadway contiguous with the traveled way that accommodates stopped vehicles and emergency use. Without shoulders, many safety and operational guidelines are not available for the traveling public.

In addition, the bridge does not meet current crash test standards, with the following issues:

- The existing railing is not structurally capable of resisting the design loading – it is an unapproved, understrength concrete railing. If a vehicle were to impact the existing railing, it would fail and result in either the vehicle leaving the roadway or significant damage to the vehicle.
- End posts, the bridge railing ends, have deficient end treatments/transitions that result in blunt end treatments in the direction of traffic. If a vehicle were to engage the railing at the location of these end posts, the result would be severe damage to the vehicle because of the blunt nature of the railing in the direction of travel.

1.4 Purpose of the Environmental Assessment

This Draft EA discloses the environmental and cultural impacts that would result from the project's implementation, and commits to specific mitigation measures that would be implemented to avoid and/or minimize potential impacts. This Draft EA has been prepared to satisfy the requirements of HRS Chapter 343 and Hawaii Administrative Rules (HAR) Title 11, Chapter 200, Environmental Impact Statement (EIS) Rules, and other environmental compliance requirements. The proposed project triggered the need to comply with the rules and regulations for environmental review because the project would use State lands and State funds.

1.5 Public Comment on the Environmental Assessment

The Office of Environmental Quality Control (OEQC) notifies the public when a Draft EA is available for review in its bimonthly bulletin, the OEQC *Environmental Notice*. Official announcement by the OEQC initiates a 30-day review and comment period.

Request for Comments

Interested members of the public are invited to submit written comments on the Draft EA to:

Name: J. Michael Will, P.E.: Project Manager / Construction Operations Engineer Federal Highway Administration Central Federal Lands Highway Division
Address: 12300 W. Dakota Avenue, Suite 380; Lakewood, CO 80228
Email Address: michael.will@dot.gov

1.6 Permits, Approvals, and Compliance Required or Potentially Required

The following requirements must be met to implement the proposed project:

1.6.1 Federal

- Department of the Army Permit (Section 10 of the Rivers and Harbors Act; Section 404 of the Clean Water Act [CWA]), U.S. Army Corps of Engineers (USACE)
- Section 408 Approval (Rivers and Harbors Act Section 14 and codified in 33 U.S. Code [U.S.C.] 408), USACE
- Section 106 Consultation (National Historic Preservation Act [NHPA]), State of Hawaii Department of Land and Natural Resources (DLNR), State Historic Preservation Officer (SHPO)
- Section 7 Consultation (Endangered Species Act), U.S. Fish and Wildlife Service; National Marine Fisheries Service
- Essential Fish Habitat Consultation (Magnuson-Stevens Fishery Conservation and Management Act), National Marine Fisheries Service

- Fish and Wildlife Coordination (Fish and Wildlife Coordination Act), U.S. Fish and Wildlife Service
- Section 4(f) (U.S. Transportation Act), Federal Highway Administration (FHWA)

1.6.2 State

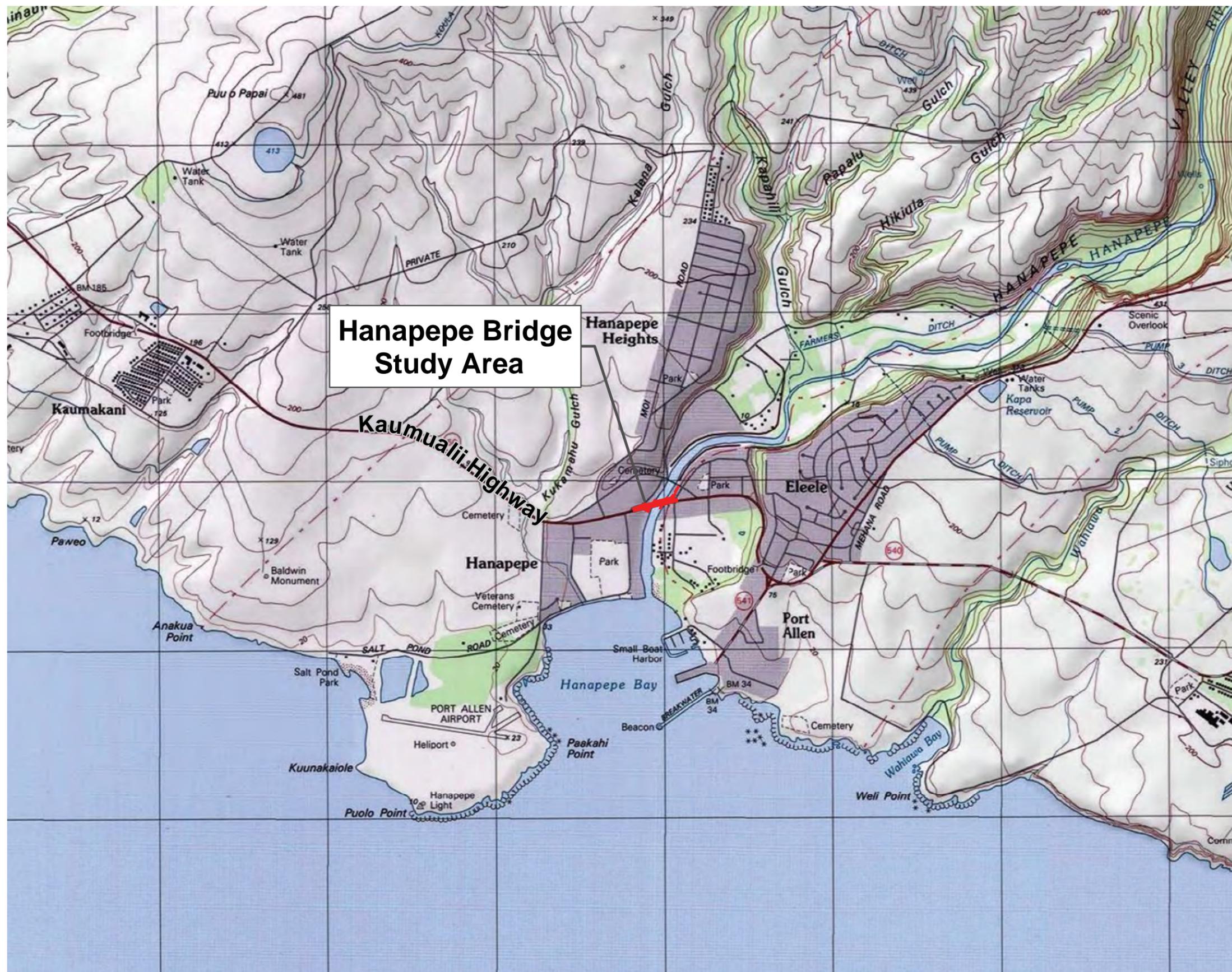
- Section 401 Water Quality Certification, Clean Water Branch, State of Hawaii Department of Health (HDOH)
- National Pollutant Discharge Elimination System (NPDES) Permit, HDOH
- Stream Channel Alteration Permit, DLNR, Commission on Water Resource Management,
- Coastal Zone Management Act Consistency Review, Office of Planning, State of Hawaii Department of Business, Economic Development, and Tourism
- Historic Preservation Review (HRS, Chapter 6E), DLNR, State Historic Preservation Division
- Americans with Disabilities Act (ADA) Review (HRS, §103-50), Disability and Communication Access Board, HDOH
- Occupancy and Use of State Highway Right of Way Permit, HDOT
- Community Noise Permit/Variance, HDOH

1.6.3 County

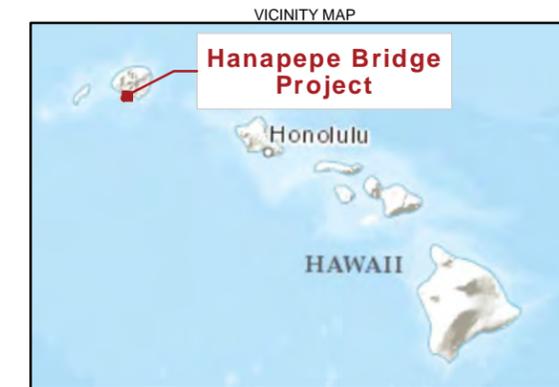
- Compliance with floodplain management requirements, Kauai Department of Public Works
- Grading, Grubbing, and Stockpiling Permits, Kauai Department of Public Works

1.7 References

American Association of State Highway and Transportation Officials (AASHTO). 2012. *Implementation for Load and Resistance Factor Rating of Highway Bridges, 6th Edition*.



Hanapepe Bridge Study Area



LEGEND

█ Study Area

Notes:
1. Imagery Source: ESRI USA Topographic Maps

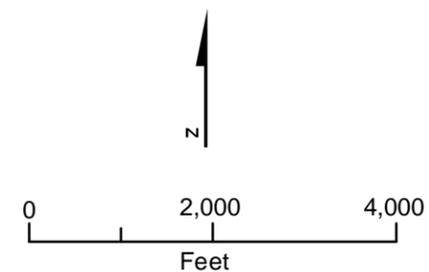
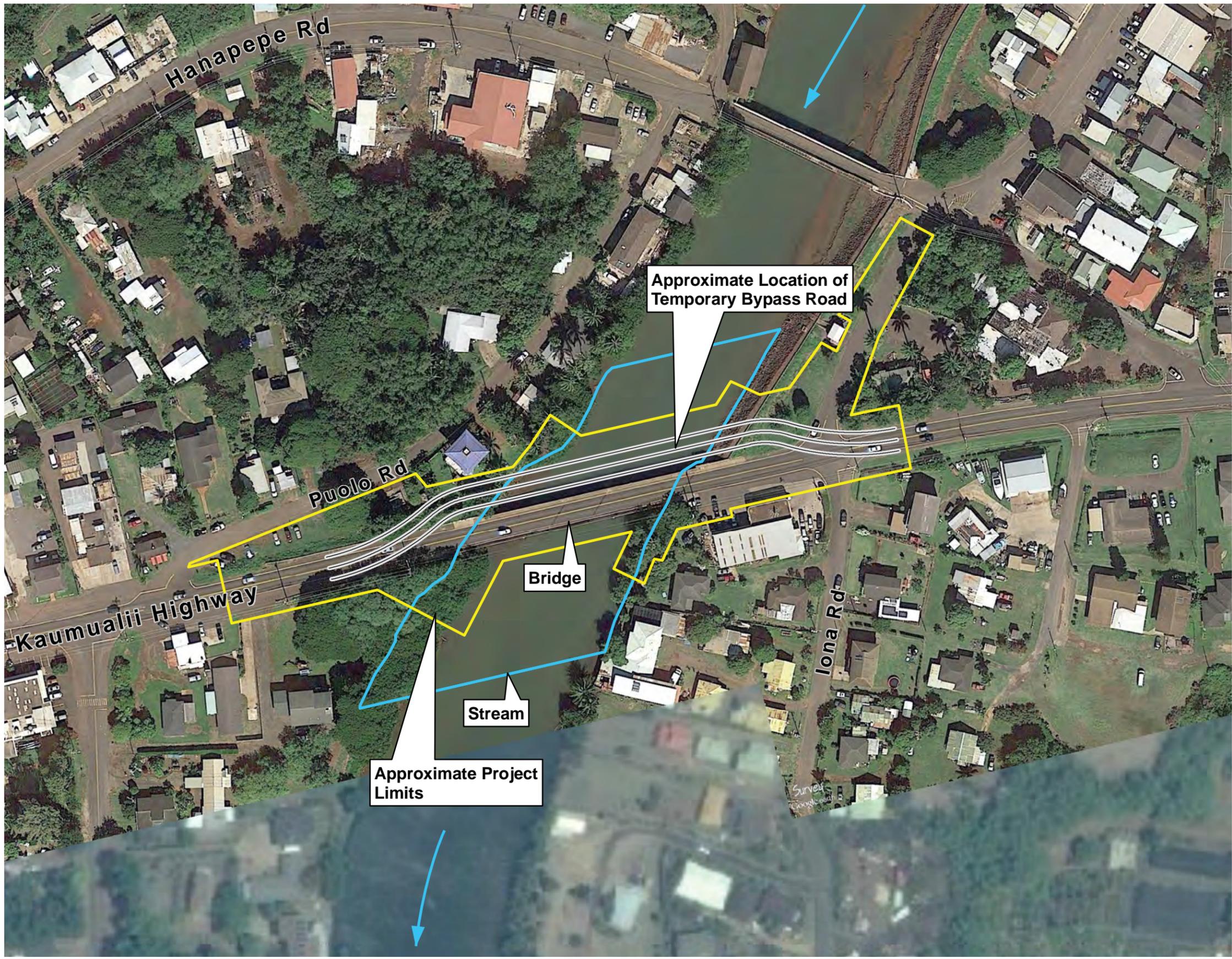


FIGURE 1-1
Project Location
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



Notes:

1. High-Res Imagery Source: Google Earth 12/16/2013
2. Low-Res Imagery Source: Digital Globe 08/26/2011
3. Imagery base map is not orthorectified; therefore project features may not properly align with the imagery.

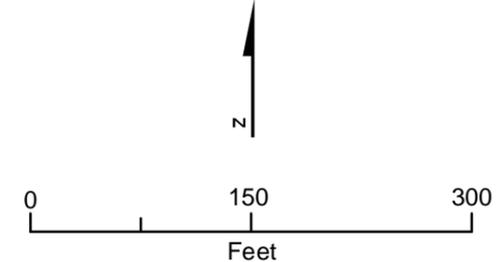
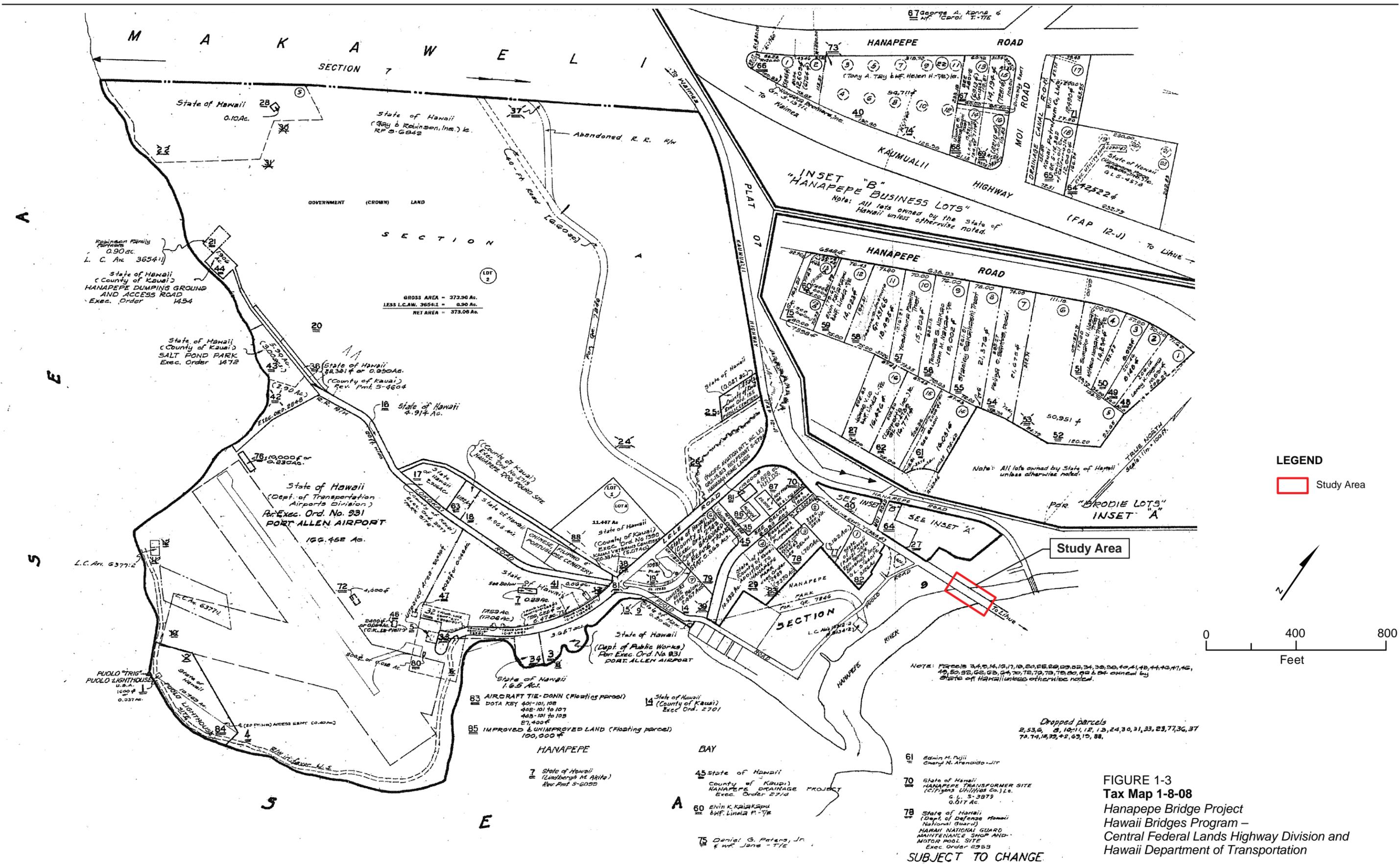
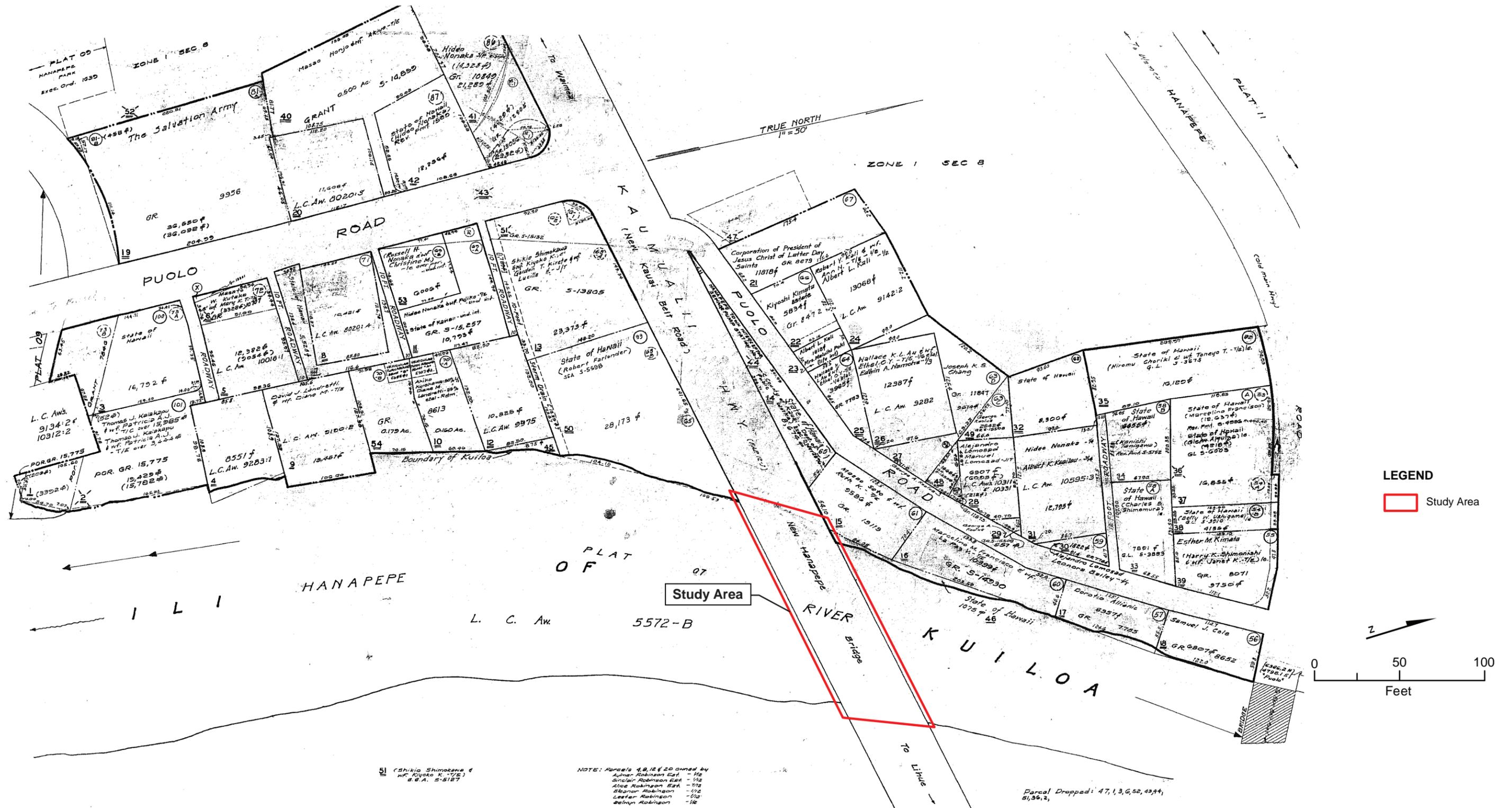


FIGURE 1-2
Project Limits
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation





PORTION OF HANAPEPE TOWN LOTS (1st Series) WAIMEA, KAUAI

SUBJECT TO CHANGE

FIGURE 1-5
Tax Map 1-9-10
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation



Deck of Hanapepe River Bridge, looking east.



West end of Hanapepe River Bridge, looking west.

FIGURE 1-6a
Project Area Photos
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



Upstream side of Hanapepe River Bridge, looking west.



Substructure of Hanapepe River Bridge, view from east bank.

FIGURE 1-6b
Project Area Photos
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



Bridge railing close up.



From bridge deck looking east toward levee on east bank.

FIGURE 1-6c
Project Area Photos
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation

Project Description

2.1 Project Location

The project is located in the heart of Hanapepe town at MP 16.6 on Kaunualii Highway (State Route 50). The highway, classified as an Urban Minor Arterial, is the primary access to and connection between the island's west side communities. The Hanapepe River Bridge is under the jurisdiction of HDOT.

2.1.1 Surrounding Land Uses

The project is on the coastal plain in the southwestern portion of Kauai. Hanapepe River is a perennial water way which conveys substantial flows beneath the highway bridge.

The project area is relatively flat and moderately developed. A County sewer pump station is located on the *mauka* (mountainward) side of the highway near the western approach. On the *makai* (oceanward) side of the highway near the eastern approach is a gas station and auto repair shop. Adjacent development on other privately owned lands include residences and small retail businesses and eating establishments. Nearby public and community facilities include a fire station and church.

USACE completed flood control improvements to the east and west banks of the river in 1959 and 1963, respectively. On the east (Lihue side) bank, the improvements include a floodwall atop a levee 2,200 feet long and an I-wall 185 feet long from Hanapepe Bridge upstream to the cliffs at the northeastern corner of Hanapepe Town. On the west (Waimea side) bank, there is a riprap-lined earth fill levee 4,465 feet long starting at the County-owned Hanapepe Road Bridge and extending upstream to high ground.

2.1.2 Other Nearby State and County Projects

There are no other State projects in the Statewide Transportation Improvement Program (STIP) in the immediate vicinity of the Hanapepe River Bridge project. The County of Kauai Public Works Department has identified Hanapepe Road for resurfacing. The entire length (5,400 feet) is planned to be resurfaced in 2017. The Hanapepe River Bridge project is adjacent to the planned resurfacing project. However, the construction areas are not expected to overlap. The County of Kauai Public Works Department also has a project to repair and/or rehabilitate the existing Hanapepe Road Bridge. The project is currently in the environmental review phase and is anticipated to be completed after the Hanapepe River Bridge project.

2.2 Existing Conditions along the Project Corridor

2.2.1 Right-of-Way and Surrounding Elevations

The right-of-way (ROW) for the Hanapepe River Bridge and associated approaches is approximately 80 feet wide. The bridge is at an elevation of 12.75 feet above mean sea level (amsl). Approximately 300 feet east of the bridge, the elevation is 8.4 feet amsl, and approximately 300 feet west of the bridge, the elevation is 9.3 feet amsl.

2.2.2 Bridge Structure and Approaches

Constructed in 1938, the existing Hanapepe River Bridge is a reinforced concrete tee-beam bridge approximately 275 feet long and 35 feet, 10 inches wide. The roadway atop the bridge carries two lanes of Kaunualii Highway, with one 12-foot lane in each direction and 5-foot sidewalks and bridge rails on each side. The bridge crosses the river at an oblique angle. This results in an approximately 45 degree skew between the alignment of the roadway and the two supporting bridge piers. The center span of the bridge is 114 feet long and includes a suspended center section supported on expansion bearings by cantilever sections extending toward the center from each of the bridge piers. The two outer spans, between the piers and each abutment, are 78 feet. The roadway approach has approximately 8-foot shoulders on the west side, and 5-foot shoulders on the east side.

The Hanapepe River fills the entire span of the bridge. Upstream of the Hanapepe River Bridge, the riverbank is stabilized on the east bank with a sloping riprap embankment about 12 feet high topped by a 2 feet, 6 inches high concrete levee wall. The upstream west bank is mostly concealed by thick vegetation, but a short exposed portion adjacent to the bridge is a lava rock rubble and concrete mortar retaining wall approximately 5 feet high that extends about 30 feet before disappearing into the vegetation. It appears that the remainder of the upstream west bank to the County's Hanapepe Road Bridge is either a retaining wall or an earthen bank. Both banks downstream of the bridge are also concealed by vegetation and appear to be either earthen bank or retaining wall. On both downstream banks and the west upstream bank, there are house lots that run down to the river. The east upstream bank, over the levee wall, has a grassy slope toward Iona Road.

2.2.3 Utilities

Providers with utilities or services within the project area include the following:

- Sandwich Isles Communications – Fiber Optic
 - Underground ducts with fiber optic cable on the *mauka* side of the bridge
- Hawaiian Telecom – Telecommunications
 - Overhead lines on the *makai* side that run parallel to the bridge
- Oceanic Time Warner Cable – Cable
- County of Kauai, Department of Water – Water
 - 12-inch waterline suspended on the *makai* side of the bridge
- County of Kauai, Department of Public Works, Wastewater Management Division– Sewer
 - 12-inch forcemain attached to the *mauka* side of the bridge
- HDOT – Street Lighting
 - Pole mounted lights on the east and west sides of the bridge

2.3 Proposed Project

The proposed project is to replace Hanapepe River Bridge to address the structural and functional deficiencies described in Section 1.3, Project Purpose and Need. Figure 2-1 shows typical sections. The project limits extend beyond the Hanapepe River Bridge to include the approach roadways and potential staging areas, approximately 1,000 feet along Kaumualii Highway and approximately 25 feet beyond the existing ROW. Where the Hanapepe River crosses beneath the bridge, the project area would extend 300 feet upstream and downstream of the bridge to include a temporary bypass route and encompass stream bank improvements related to scour protection and erosion control.

The project area encompasses a total area of 2.7 acres, which consists of 1.9 acres of permanent impact area and 0.8 acres of temporary impact area. The proposed permanent improvements would be within the existing HDOT ROW. Properties that would be affected by the project are discussed in Section 2.3.3. There would be no improvements or changes to the travel lanes or shoulders beyond the project limits.

HDOT and AASHTO standards and regulations govern the design criteria and construction methods and procedures for the proposed project. The design would meet or exceed both HDOT and AASHTO criteria (see Table 2-1). The posted speed limit of 35 mph on Kaumualii Highway would remain. The replacement bridge would not meet the HDOT Manual (HDOT, Highways Division 1980) criteria of 2 feet of freeboard (or clearance above flood waters); therefore, a design exception would be required.

TABLE 2-1
Project Design Criteria

Design Criteria	Existing Conditions	Standards		Proposed
		AASHTO	State	
Design Speed	Posted speed – 35 mph	45 mph	Urban 25 to 45 mph	Design speed = 45 mph Posted speed - 35 mph
Travel Way Width (feet)	12	11	12	12
Shoulder Width (feet)	N/A	8	10	8
Sidewalk Width (feet)	5	N/A	N/A	5
Bridge Width (feet)	35 feet, 10 inches	Match approach roadway width	N/A	52

Notes:

N/A = not applicable

HDOT’s *Design Criteria for Bridge and Structures* (2014) and AASHTO’s *Implementation for Load and Resistance Factor Rating of Highway Bridges* (6th Edition) (2012, including all subsequent revisions) would be followed for structure design.

The project would use HDOT’s *Design Criteria for Highway Drainage* (HDOT, 2010) to govern the hydraulic evaluation, analysis, and design. The project would consider incorporating low-impact development concepts, such as directing stormwater drainage into grass swales adjacent to the bridge and highway.

The approach travel lanes and shoulders would be designed to AASHTO and HDOT guidelines (*A Policy on Geometric Design for Highways and Streets* [AASHTO, 2011] and *Hawaii Statewide Uniform Design Manual for Streets and Highways* [HDOT, Highways Division, 1980], and all subsequent amendments).

2.3.1 Replacement Bridge Structure

The proposed project would replace Hanapepe River Bridge in its existing location. The new structure would be a three-span, shallow arch, girder bridge which reflects the aesthetics and historic character of the existing structure (see Figure 2-2). The new bridge would be longer than the existing bridge—increasing in length from 275 feet to 308 feet. It would also be wider than the existing bridge—increasing in width from 36 feet to 52 feet. Like the existing bridge, the replacement would accommodate two 12-foot wide travel lanes, but the shoulders would be widened to 8 feet. The new bridge would continue to provide 5-foot wide raised sidewalks on each side and the bridge railings would measure 1-foot thick.

The proposed bridge design includes shallow arched wide flange girders and a cast-in-place deck slab. Bridge railings and transitions would meet crash test requirements. The proposed railing (Texas Aesthetic Balustrade) is a concrete, parapet-style crash-tested rail with similarities to the existing bridge railing and would be 42 inches high for bicyclists’ safety (see Figures 2-3 and 2-4). Concrete end posts would be provided for the length of the approach slab as a transition from the bridge railings to the roadway metal guardrails.

Existing piers and pier caps (existing exposed timber piles) would be cut at the mudline and removed. The replacement bridge would be supported by deep foundations bearing on, or embedded within, competent soils beneath the soft soils. The foundation type for the bridge would likely consist of driven piles or drilled shafts. A driven pile foundation could have constructability issues associated with obstructions from boulders during driving, but is technically feasible. If drilled shafts are used, a large diameter shaft would be considered to minimize the potential for drilling difficulty because of cobbles and boulders in the alluvium. A larger diameter shaft, such as 60 inches, could be completed with augers and the greater diameter would

allow for boulders to be removed on the auger flights. Drilled shafts with a diameter that is smaller than the likely boulder size may encounter refusal. Foundation type would be selected during final design.

The existing vertical bridge abutments are currently located within the main channel. The existing abutments would be demolished and removed. New abutments would be constructed behind the location of the existing abutments and set back from the main channel, thereby avoiding interference with the existing foundation. This design also provides greater hydraulic capacity. By removing the existing abutments, the stream would be widened under the bridge to match the existing upstream and downstream channel profile and allow for additional conveyance of flood waters. A new sloped concrete rubble masonry (CRM) lining would be constructed to protect the underside of the new drilled shaft stub abutment and river banks from scour. The new northeast abutment would require removal of approximately 7 feet of the existing levee along the east bank with a new tie-in to the replacement bridge. At the abutments, wingwalls would cantilever behind the abutments for 20 feet on each side. On the east side, the wing walls would be extended by a concrete barrier wall supported on spread footings.

The proposed horizontal and vertical roadway alignments would closely match existing conditions as roadway profile changes would impact the adjacent properties along the roadway approaches to the bridge. Two retaining walls are expected on the west end of the bridge. Based on preliminary design, the wall on the *mauka* side would measure approximately 110 feet long, and the wall on the *makai* side approximately 55 feet long.

Highway lighting would remain unchanged and there is no plan to install lights on the replacement bridge itself. Two existing light poles on either side of the bridge would be replaced and may require modest relocation to accommodate the slightly wider footprint of the new bridge.

2.3.2 Construction Activities

Staging of personnel and equipment would occur within the project limits. A potential staging area is identified along the east (Lihue side) bank, above the levee and between the highway bridge and County bridge. Because the temporary detour road is located on the *mauka* side of the bridge, equipment access would likely approach the construction zone from the *makai* side (see Figure 2-5). Specific construction means and methods would be determined by the contractor, who is not yet selected. However, general options would include equipment stationed on a barge or floating platform, or temporary trestle structure with a work platform.

Construction would occur both during normal work hours and on weekends. To minimize impacts to the surrounding residential areas, night work is not anticipated. The Hanapepe River Bridge would be closed to normal traffic for the duration of the project. During construction, a two-way temporary bypass and temporary bridge would be constructed on the *mauka* side of the existing bridge. The temporary bypass would provide two 10-foot lanes (one in each direction), 2-foot shoulders on each side, and barriers as needed. The posted speed of the temporary bypass road would be 15 mph.

There are currently sidewalks on the existing bridge for pedestrians to cross the Hanapepe River. During construction, the temporary bypass road would not accommodate bicyclists and pedestrians. However, bicyclists and pedestrians would be able to cross the river by using the County bridge north of the existing highway bridge (see Figure 2-6).

Utilities attached to the existing bridge, as well as overhead lines, would need to be temporarily relocated to the bypass bridge during construction. Affected utilities include telecommunications, water, sewer, and street lighting. The temporary bridge would need to support the weight of utility lines, as well as telecommunication conduits and cables currently supported by the existing span.

The temporary bypass does not fit in the existing ROW and would require a construction parcel. A sewage pump station and private residence on the west, *mauka* side of the bridge require that temporary retaining

walls be constructed. On the east, *mauka* side of the bridge, there is a flood control levee wall that would be spanned to minimize construction impact.

2.3.3 Properties Affected by the Project

The land under the Hanapepe River is owned by Alexander and Baldwin, Inc. (TMK: 1-9-007:001). Parcels adjacent to the bridge abutments are owned by various public and private owners. The proposed project would not require the permanent acquisition in fee of private property outside of the existing ROW. However, as shown in Table 2-2, approximately 0.49 acres of land would be needed for permanent access and/or maintenance easements and approximately 0.64 acres of land would be needed for temporary easements to accommodate bridge construction and paving improvements.

TABLE 2-2
Right-of-Way Requirements

Tax Map Key	Land Use	Estimated Area Needed (Acres)	Project Requirement
(4) 1-9-007: 001	Urban	0.11	Permanent easement for maintenance and rip rap access
(4) 1-9-007: 001	Urban	0.06	Permanent easement for maintenance and rip rap access
(4) 1-9-007: 001	Urban	0.13	Permanent easement for maintenance and rip rap access
(4) 1-9-007: 001	Urban	0.18	Construction parcel
(4) 1-9-007: 013	Urban	0.12	Permanent easement for maintenance and rip rap access
(4) 1-9-007: 013	Urban	0.20	Construction parcel for temporary roadway bypass and staging
(4) 1-9-007: 034	Urban	0.03	Permanent easement for maintenance access
(4) 1-9-010: 014	Urban	0.20	Construction parcel for temporary roadway bypass and staging
(4) 1-9-010: 015	Urban	0.06	Construction parcel for temporary roadway bypass
(4) 1-9-010: 050	Urban	0.04	Permanent easement for maintenance access
Total	10 Parcels	1.13 Acres	

2.4 No Action Alternative

The no action alternative would retain the existing bridge with no changes. There would be no effort to repair or replace the bridge to meet current design standards for roadway width and load capacity. Deficiencies in bridge railings, transitions, and bridge approaches would not change.

Under the no action alternative, environmental impacts resulting from bridge replacement activities would be averted and bridge replacement costs would not be incurred by HDOT. However, the existing bridge would continue to deteriorate, and require regular inspection and increasing maintenance to maximize its useful lifespan. Eventually, the bridge may no longer provide a safe support for vehicle, bicycle, and pedestrian traffic and could face restricted use or closure. The No Action Alternative was eliminated from further consideration because it does not meet the purpose and need of maintaining Kaumualii Highway as a safe and functional component of the regional transportation system.

2.5 Bridge Alternatives Considered and Dismissed

2.5.1 Rehabilitation of the Existing Bridge

As described in Section 1.3, the existing bridge is classified as functionally obsolete, has a substandard load carrying capacity, does not meet current seismic requirements, and is scour critical. The existing bridge rails are decaying and do not meet current crash test requirements. Inspection of existing timber piles identified

possible marine borer infestation and decay which may compromise load carrying capacity. In March 2012, an underwater inspection of the Hanapepe River Bridge was performed to evaluate the ongoing scour and undermining conditions of the bridge piers. It was assessed that the exposed timber piles are in very poor condition — one pile has completely deteriorated from the concrete footing, another has lost at least 80 percent of its cross section, and others can be penetrated easily with a knife. Furthermore, it is unknown if a similar condition is effecting the unexposed piles still buried below grade. Monitoring of top of pier elevations or top of deck elevations occurs on a regular basis to ensure that the loss of support is not causing any settlement of the pier.

For rehabilitation to meet current design requirements, the existing bridge would require installing drilled shafts with new foundations and strengthening the existing girders in the substructure. The existing sidewalks would need to be demolished to extend the width of the deck (overhang slab) and construct bridge rails that meet crash test requirements. Additional upgrades would be needed for seismic loading. The extent of these improvements would essentially result in dismantling a substantial portion of the existing bridge.

Rehabilitation of the existing bridge was evaluated, but dismissed from further consideration based on the age and deteriorated condition of the existing bridge. The lifespan of a new bridge is estimated at 75 years. In comparison, rehabilitation could extend life expectancy by 40 to 50 years, but uncertainties about the existing foundations would affect what can be accomplished through design. Some of the unknowns would remain until the foundations were exposed during actual rehabilitation work. Because deteriorated bridge components will need to be replaced anyway and the complications of working around remaining components, the cost of rehabilitation could be 2 to 3 times higher than that of replacement.

2.5.2 Bridge Replacement (Two-span Girder Bridge)

This alternative consists of replacing the existing three-span structure with a wider, two-span precast post-tensioned bridge (see Figure 2-7). The new bridge would have wide flange girders and a cast-in-place concrete slab bridge deck. This design would be the most economical to construct. However, it would have a modern streamlined appearance that would not replicate the arched shape of the existing bridge and retain its aesthetic and historic character. Input received at a September 17, 2015, public meeting reflected a desire to move forward with an alternative that more closely resembles the existing bridge. This alternative was dismissed because it did not incorporate the aesthetics and historic character of the existing bridge.

2.5.3 Replication of the Existing Bridge

The replication alternative would involve rebuilding the existing bridge to its current configuration. The existing configuration is assumed to be all aspects of the bridge that are visually apparent. Foundation elements necessary to support the structure, internal steel reinforcing details, and substructure elements underground or underwater would not be part of the replication design and, therefore, could be modified to meet current loading requirements. Design elements intended to match the existing bridge would include rail type, girder shape and spacing, and cross section profile.

An analysis of replication and its ability to meet the project purpose and need was conducted. Although there are elements of a bridge replication that can be accomplished, there would be several deficiencies that would fail to address the project purpose and need, creating continued operational and safety concerns. The primary existing deficiencies that would persist include the inability for bearing replication to meet seismic standards, rails and end posts that do not meet crash testing requirements or guidelines for vehicle and pedestrian/bicyclists' safety, and a continued lack of shoulder, which creates an unsafe condition for vehicles and pedestrians, limits the route's functional operations when a stalled or maintenance vehicle is present, limits sight distance for safe traffic movements, and lacks room for emergency evasive maneuvers. Because this alternative failed to meet the project purpose and need, it was dismissed from further consideration.

2.5.4 Bridge Construction on a New Alignment

This alternative proposes retaining the existing Hanapepe River Bridge, but closing it to vehicular traffic in light of structural and functional deficiencies and restricting its use to pedestrians and bicycles. A replacement bridge for motor vehicles would be constructed off alignment. This alternative was dismissed because of the substantial adverse impacts and high costs involved in realigning the highway for a new river crossing. The Hanapepe coastal plain between the hillsides and the ocean is relatively narrow. Shifting the highway further *mauka* would cause disruptions to Hanapepe Town, while shifting the highway further *makai* would encroach on residences and parklands and be closer to coastal resources. Existing highway-oriented businesses would be affected by the loss of street traffic. At the same time, the existing bridge structure will continue to age and require public expenditures for operations and maintenance.

2.5.5 Construction Period Alternatives

2.5.5.1 Phased Construction with One-Lane Temporary Bypass

This alternative proposes a phased approach to constructing the replacement bridge. One lane would remain open to traffic on the existing highway bridge while demolition and construction of part of the new bridge takes place. A one-lane temporary bypass bridge would be constructed adjacent to the Hanapepe River Bridge on the *mauka* side to carry traffic in the other direction. Temporary walls would be needed to reduce impacts to adjacent *mauka* properties, and a construction parcel (temporary easement) would be needed for work outside the ROW.

The phased construction approach was dismissed because it would extend the preliminary construction schedule by 6 months, thereby extending the timetable from 24 months to 30 months.

2.5.5.2 Phased Construction with Use of County Bridge

This alternative proposes a phased construction approach in conjunction with use of the County bridge on Hanapepe Road upstream of Kaumualii Highway. The first phase would leave the eastbound lane on the existing highway bridge open and the single-lane County bridge would be used for the other direction of travel. Once the westbound half of the highway bridge was constructed, eastbound traffic would be moved over to the completed section, while the County bridge would be used for westbound traffic.

This alternative was dismissed because the County bridge is in poor condition with a low load limit that is inadequate for regional highway traffic. The County is currently planning to rehabilitate the bridge, but that work has not begun. Furthermore, this alternative would require that highway traffic be diverted to narrow local roads, such as Hana and Hanapepe Roads, thereby affecting adjacent residences.

2.5.5.3 Use of the Hanapepe Road Bridge and Construct Adjacent Temporary One-way Bridge

This alternative proposes that the Hanapepe Road Bridge be used for traffic in one direction and a new temporary bypass bridge be constructed adjacent to the County bridge for traffic in the other direction. The new temporary bypass would need to be constructed on the *makai* side of the County bridge because of an existing structure approximately 10 feet from the *mauka* side of the bridge which leaves insufficient space for a temporary bridge. While there is greater clearance on the *makai* side, there are other constraints, including existing stairs and walls on the west side, and the steep levee slope on the east side. A significant disadvantage of this alternative is the absence of a temporary crossing near Kaumualii Highway on which utilities could be hung during the construction period. As with the alternative described in Section 2.5.3.2, there would also be increased traffic on local residential roads and the County bridge has structural limitations. As such, this alternative was dismissed.

2.5.5.4 Two-lane Temporary Bypass on the *Makai* Side of Hanapepe River Bridge

This alternative proposes construction of a temporary two-lane bypass road and bridge on the *makai* side of the existing highway bridge. It was considered, but dismissed because of impacts on businesses and residences located adjacent to the proposed bypass alignment.

2.6 Statewide Transportation Improvement Program

The Hawaii Statewide Transportation Improvement Program (STIP) provides a multiyear listing of State and County transportation projects and identifies those projects slated for Federal funding. It is a multimodal transportation improvement program that is developed using existing transportation plans and policies, as well as current highway, transit, and transportation programming processes. The STIP delineates the funding categories and the Federal and local share required for each project. Although projects are on the STIP, that does not necessarily mean those projects will be planned, designed, or constructed within the fiscal period because of unforeseen occurrences such as project readiness or project priorities.

The current STIP, which covers the period from Federal Fiscal Year (FFY) 2015 to FFY 2018, was published by HDOT on October 27, 2014. The Kaumualii Highway (State Route 50) Hanapepe River Bridge project is listed on the STIP as a system preservation project.

2.7 Preliminary Cost Estimate and Schedule

In 2015, the estimated construction cost for the proposed project is approximately \$23 million. This includes surveying and staking, relocating utilities, temporary bypass road and bridge, new bridge, and associated roadway elements. Excluded are land acquisition fees. Construction of this project would occur after the project's design is completed and necessary entitlements are obtained.

The project is anticipated to start construction in year 2016 and end in 2018 with an estimated duration of 24 months.

2.8 References

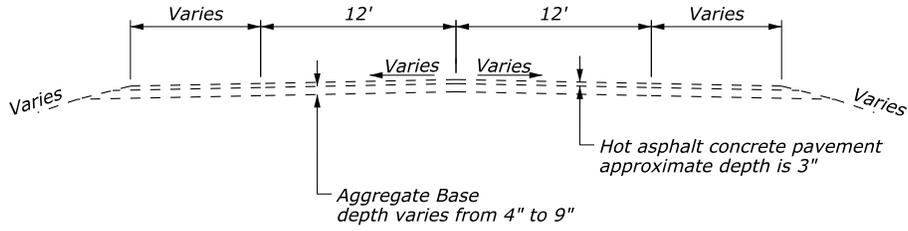
American Association of State Highway and Transportation Officials (AASHTO). 2011. *A Policy on Geometric Design for Highways and Streets*.

American Association of State Highway and Transportation Officials (AASHTO). 2012. *Implementation for Load and Resistance Factor Rating of Highway Bridges, 6th Edition*.

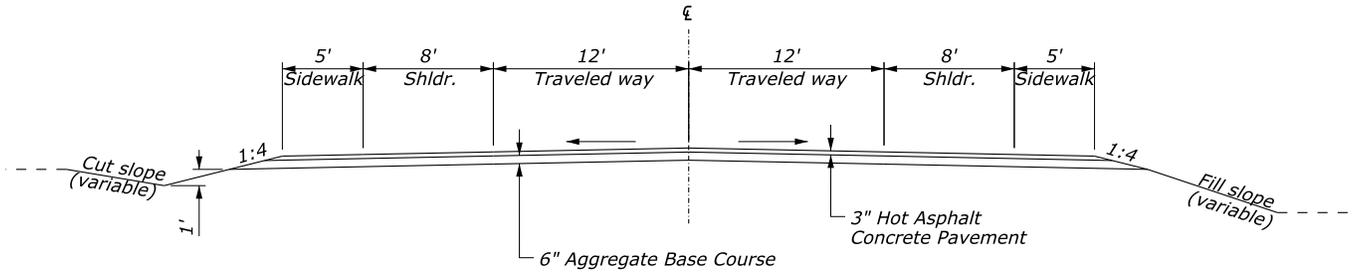
State of Hawaii Department of Transportation (HDOT), Highways Division. 1980. *Hawaii Statewide Uniform Design Manual for Streets and Highways*. October.

State of Hawaii Department of Transportation (HDOT). 2010. *Design Criteria for Highway Drainage*. October 1.

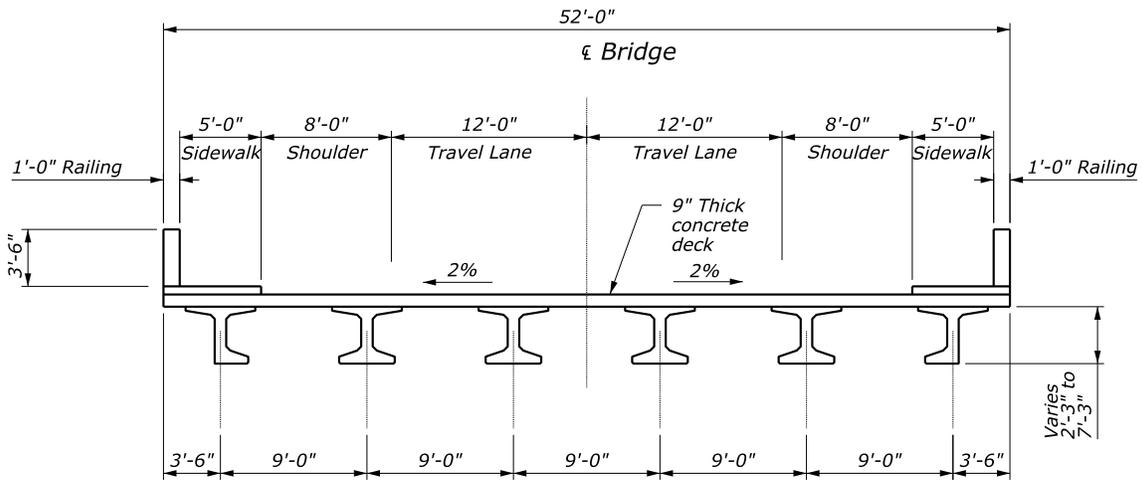
State of Hawaii Department of Transportation (HDOT). 2014. *Design Criteria for Bridge and Structures*. January 7.



EXISTING TYPICAL SECTION

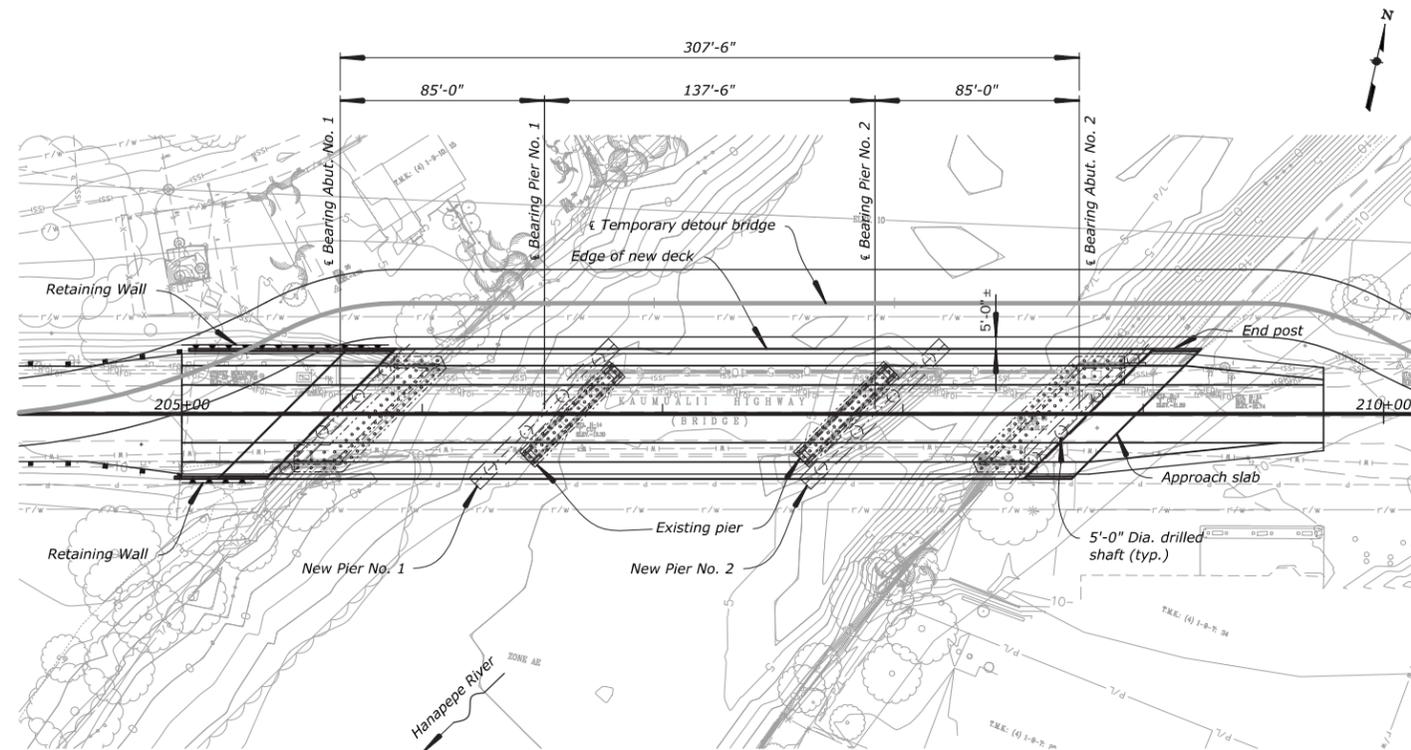


PROPOSED APPROACH TYPICAL SECTION

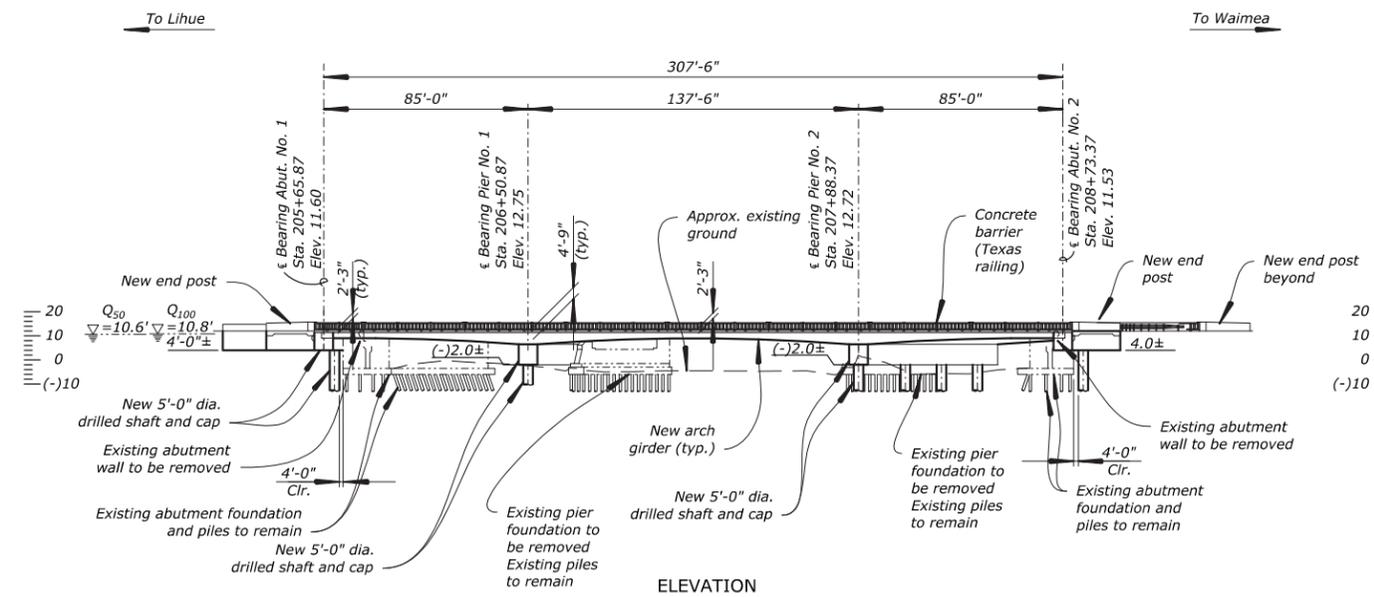


PROPOSED BRIDGE TYPICAL SECTION

FIGURE 2-1
Typical Sections
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation



PLAN



ELEVATION

FIGURE 2-2
Bridge Design (Preliminary)
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation

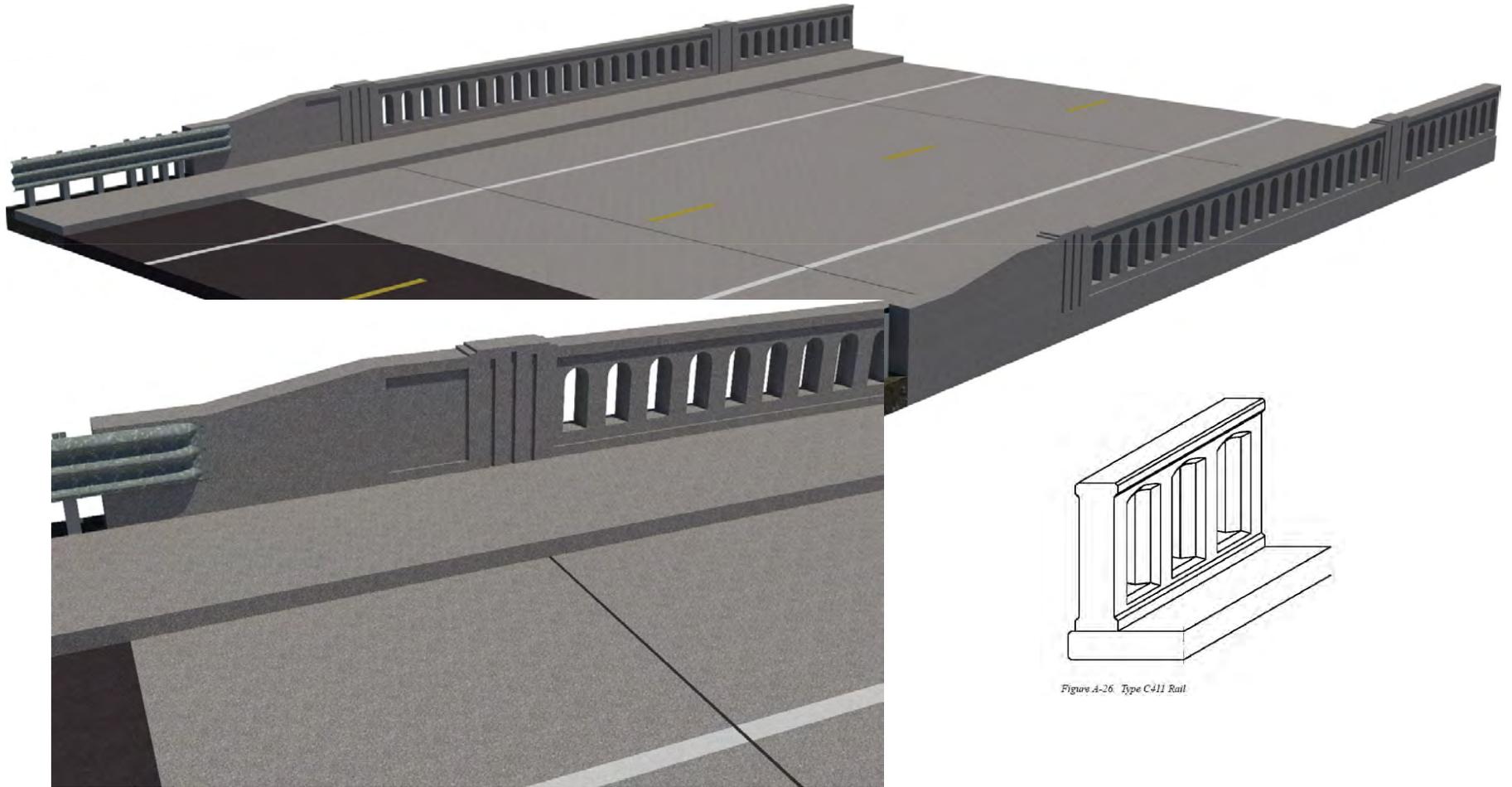
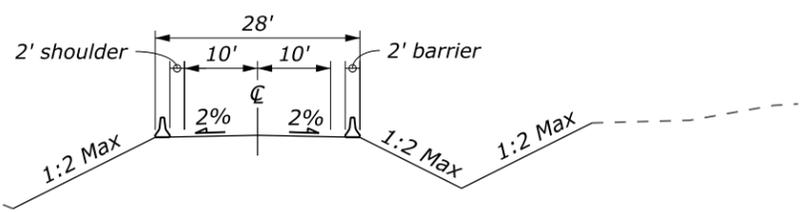
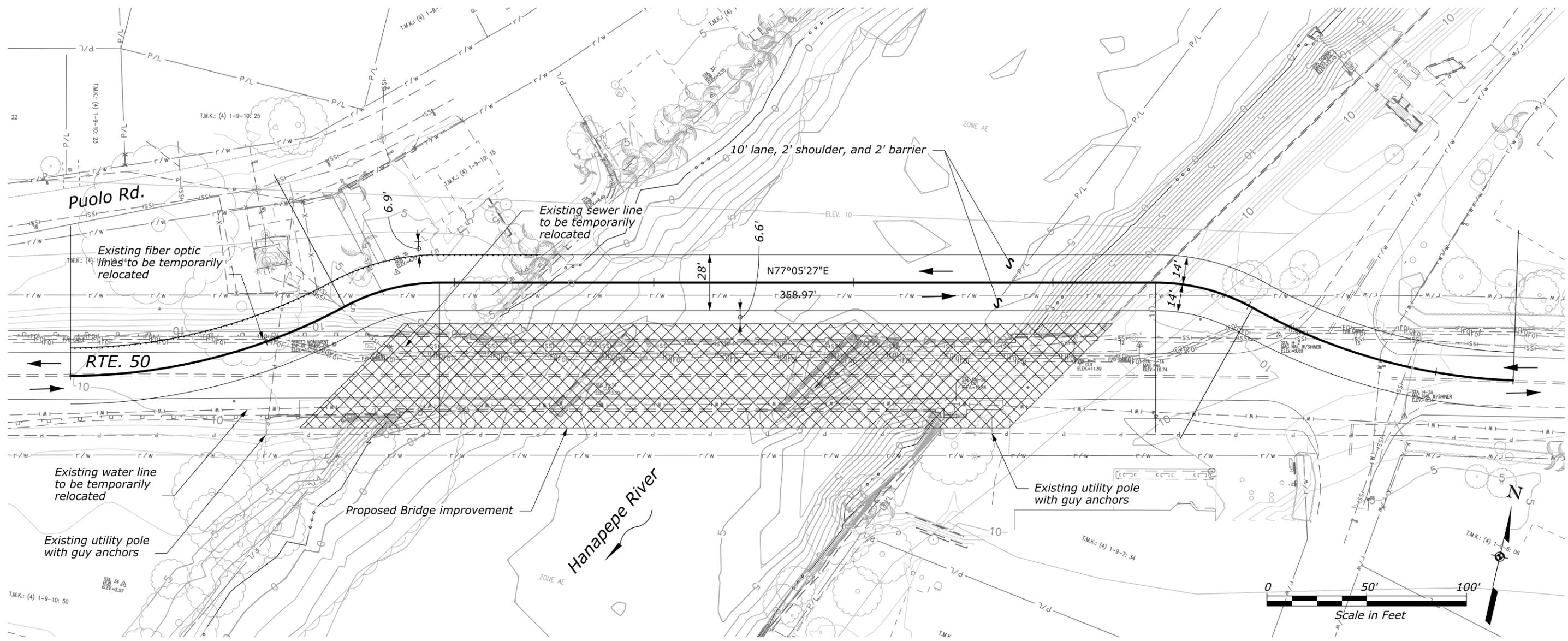


Figure A-26 Type C411 Rail

FIGURE 2-4
Proposed Bridge Rails and End Posts
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



TYPICAL SECTION

FIGURE 2-5
Temporary Vehicular Bypass
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation

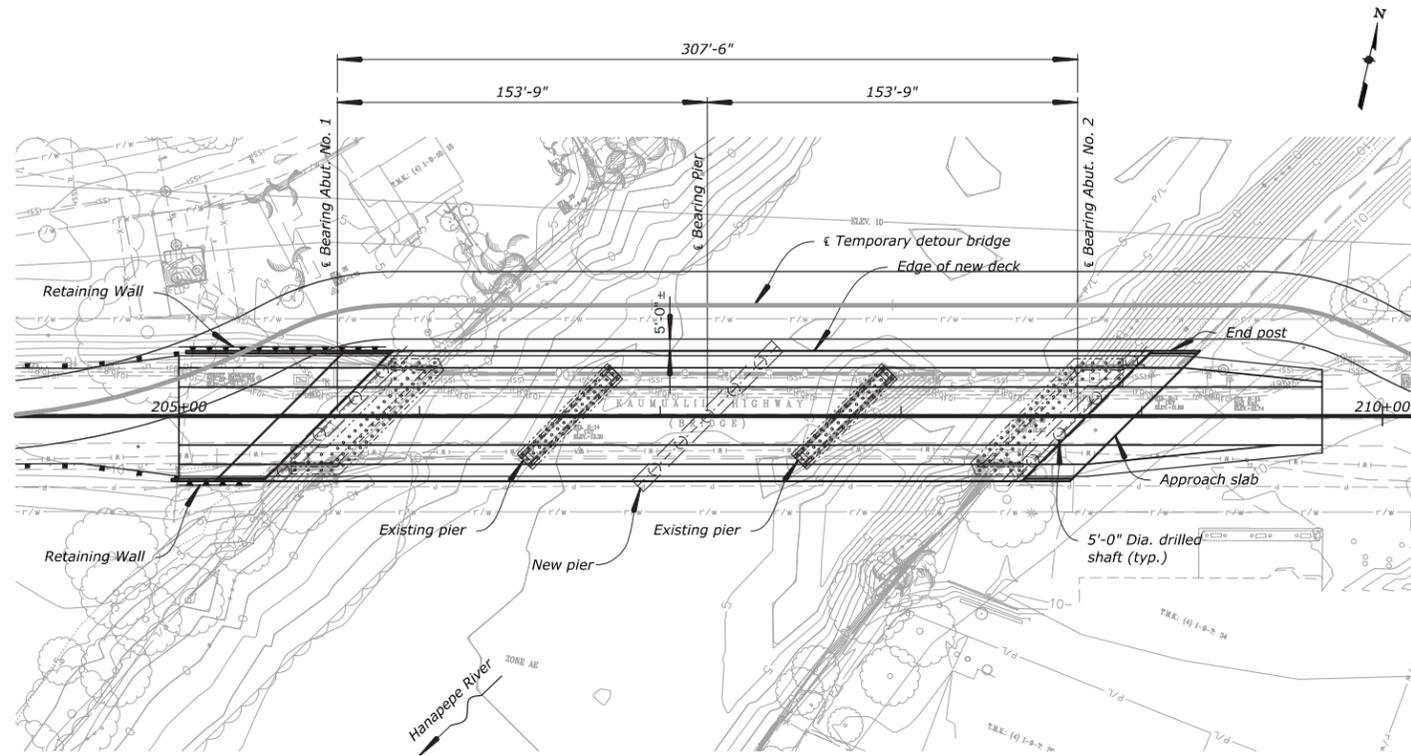


Aerial image courtesy of Google™ Earth, Image ©2015 Google.

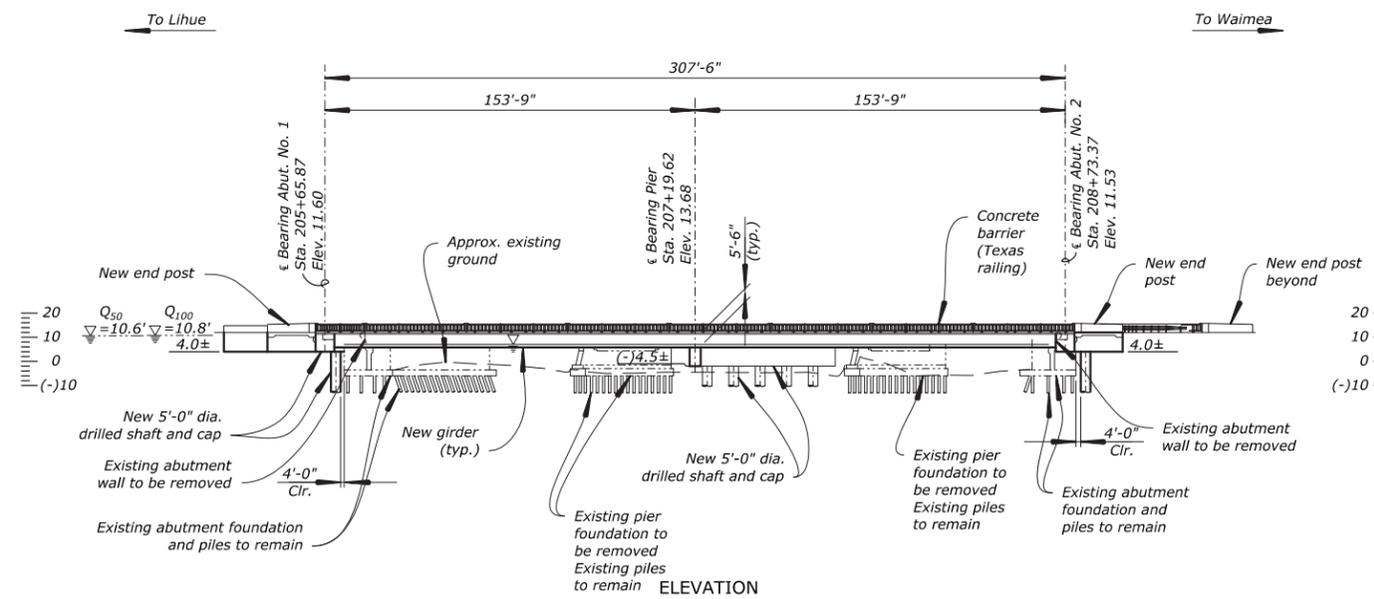
LEGEND

 Temporary Bicycle and Pedestrian Bypass Route

FIGURE 2-6
Temporary Pedestrian Route
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



PLAN



ELEVATION

FIGURE 2-7
Bridge Alternative: Two-span Uniform Flange Girder Bridge (Preliminary)
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation

Affected Environment, Impacts, and Mitigation

3.1 Topography, Geology, and Soils

3.1.1 Existing Conditions

The geology of Kauai consists of a single great shield volcano, deeply eroded, and partly veneered with much later volcanics that rises 17,000 feet above the surrounding sea floor. At the top of the shield is a caldera 10 to 12 miles across. The southern flank of the shield collapsed to form a fault-bounded trough or depression some 4 miles wide. Lava erupted in the caldera and gradually filled it, except on the higher northwestern side, and eventually spilled over its low southern rim into the trough and down into the sea (Macdonald and Abbott, 1970). Hanapepe is to one side of the collapsed shield. Hanapepe Bay and the nearby Puolo salt flats may be the result of the overflow at the edge of the infilling.

Elevations surrounding the proposed project range from sea level to approximately 12.75 feet amsl. The terrain is generally flat.

The Natural Resources Conservation Service identifies the following three soil types in the project area (Foote et al., 1972; National Resources Conservation Service, 2014) (see Figure 3-1):

- Jaucus loamy fine sand, dark variant, 0 to 8 percent slopes (JkB). This soil occurs near the ocean in areas where the water table is relatively high and salts have accumulated. It is somewhat poorly drained in depressions, but excessively drained on knolls. The depression normally contains a layer of silty alluvial material with a high concentration of soluble salts. The water table is normally within a depth of 30 inches. These soils are classified in hydrologic soil group A, which are soils with a high infiltration rate (low runoff potential) with a high rate of water transmission.
- Hanalei silty clay loam, 0 to 2 percent slopes (HmA). This series consists of somewhat poorly drained to poorly drained soils on bottom lands on the islands of Kauai and Oahu, and developed in alluvium derived from basic igneous rock. They are gently sloping. Elevations range from nearly sea level to 300 feet amsl. These soils are classified in hydrologic soil group B, which are soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well-drained, or well-drained soils that have moderately fine texture to moderately coarse texture.
- Pakala clay loam, 0 to 2 percent slopes (PdA). This series consist of well-drained soils on alluvial fans and bottom lands on Kauai. These soils developed in alluvium. They are nearly level to moderately sloping. Elevations range from nearly sea level to 400 feet amsl. These soils are classified in hydrologic soil group B, which are soils having a moderate infiltration rate when thoroughly wet. These consist chiefly of moderately deep or deep, moderately well-drained or well-drained soils that have moderately fine texture to moderately coarse texture.

Six geotechnical borings were drilled at locations corresponding to the bridge abutments, piers, and approaches. Near surface soils were denser or stiffer, but transitioned to softer soils at lower depths. Groundwater was encountered at depths ranging from about 6.5 feet to 13.3 feet below ground surface.

3.1.2 Potential Impacts and Mitigation Measures

The proposed project is not constrained by geological and topographic site conditions, nor would it affect any unique geological formations. To address the presence of soft subgrade soils found in geotechnical investigations and the potential for settlement, deep foundations would be installed to support the proposed replacement bridge. Construction materials would include clean gravel and well-graded granular structural fill as backfill for excavations. Roadway sections would be designed to standard HDOT specifications that consist of asphalt and base course over sub-base course material.

Construction of the bridge and roadway approaches would involve land disturbance that could result in soil erosion. However, the erosion potential is relatively low given the small area of disturbance (approximately 2.3 acres). To minimize the potential for construction-related erosion impacts, best management practices (BMPs) would be developed as part of the project's engineering and design in accordance with the Kauai County Code for grading, grubbing, and stockpiling (Kauai County Code, Chapter 22, Article 7). Other mitigation measures would be specified as part of applicable water quality permits obtained from HDOH. See Section 3.2, Climate and Air Quality, and Section 3.3, Hydrology and Water Quality, for a list of applicable BMPs.

3.2 Climate and Air Quality

3.2.1 Existing Conditions

Climate in the area of the proposed project is moderated by the coastal location and prevailing northwest tradewinds. The average maximum daily temperature is approximately 80 degrees Fahrenheit (°F), with an average minimum of 60°F. Mean annual rainfall at the project location is approximately 26.6 inches. Rainfall is typically highest in November and December and lowest in June (Giambelluca et al., 2013).

Kauai, like the rest of the State, is in attainment with Federal and State air quality standards.¹ HDOH operates a network of air quality monitoring stations at locations around the State. The only monitoring station on Kauai is in the Niumalu subdivision, near Lihue. As reported in the Annual Summary of Air Quality Data for 2013 (HDOH, 2014c), the pollutants monitored at the Niumalu station are particulate matter less than 2.5 microns (PM_{2.5}), nitrogen dioxide (NO₂), and sulfur dioxide (SO₂). Carbon monoxide (CO) monitoring was shut down by HDOH as of April 25, 2013. The readings at this location show that criteria pollutant levels were below State and Federal ambient air quality standards (see Table 3-1).

TABLE 3-1
Kauai Air Monitoring Station (Niumalu) Data (2013)

Pollutant	Annual Mean	Federal Air Quality Standard (Primary)	State Air Quality Standard
PM _{2.5} (24-hour)	3.9 µg/m ³	35 µg/m ³	None
NO ₂ (Annual)	0.002 ppm	53 ppb	0.04 ppm
SO ₂ (1-hour)	0.001 ppm	75 ppb	None
SO ₂ (3-hour)	0.001 ppm	0.50 ppm ^a	0.50 ppm
SO ₂ (24-hour)	0.001 ppm	None	0.14 ppm
CO (1-hour)	0.5 ppm ^b	35 ppm	9 ppm

Source: HDOH. 2014c.

Notes:

^a. Federal secondary standard

^b. Station (CO) shut down April 25, 2013; incomplete year

µg/m³ = micrograms per cubic meter

ppb = parts per billion

ppm = parts per million

¹ Exceedances of SO₂ and PM_{2.5} have been reported on Hawaii Island, but these are associated with the volcano which is considered a natural, uncontrollable event. Therefore, the State is requesting exclusion of these exceedances from attainment/nonattainment determination (HDOH, 2014c).

3.2.2 Potential Impacts and Mitigation Measures

Short-term, Construction-related Emissions

Short-term impacts on air quality may result from project construction. BMPs would be employed to minimize emissions. As further discussed below, impacts could be associated with the following two types of pollutants: (1) fugitive dust from vehicular movement and soil disturbance, and (2) exhaust emissions from onsite construction equipment. Overall air quality impacts are expected to be insignificant because the construction period is of limited duration and impacts would be minimized with the implementation of BMPs for dust control and exhaust emissions.

Fugitive Dust. Construction activities would incorporate fugitive dust emission control measures in compliance with provisions of HAR Chapter 11-60.1, "Air Pollution Control," Section 11-60.1-33 on Fugitive Dust and Kauai County Code, Chapter 22, Article 7. Measures that are expected to be used to control airborne emissions include the following:

- Use water, dust fences, disturbance area limitations, and re-vegetation to minimize dust emissions
- Stabilize all disturbed areas with erosion control measures
- Cover open-bodied trucks whenever hauling material that can be blown away
- Revegetate disturbed area as soon as practical after construction
- Stabilize construction entrances to avoid offsite tracking of sediment
- Stabilize sites that would not be redisturbed for 21 or more days with grass or gravel

Exhaust Emissions. Emissions from engine exhausts of onsite mobile and stationary construction equipment could also affect air quality. Emission impacts would be minimized by requiring the Contractor to use vehicles that are properly maintained. Nitrogen oxide emissions from diesel engines can be relatively high compared to emissions from gasoline-powered equipment. However, the standard for nitrogen oxide is set on an annual basis and is unlikely to be violated by emissions from short-term use of construction equipment. CO emissions from diesel engines are low and are expected to be negligible compared to vehicular emissions generated on the highway.

Long-term Impacts on Air Quality

This project would not result in any changes in traffic volumes, vehicle mix, location of the existing facility, or any other factor that can cause an increase in emissions. As such, this project would generate no changes in air quality impacts for CAA criteria pollutants and would not be linked with any special mobile source air toxics (MSAT) concerns.

The U.S. Environmental Protection Agency (USEPA) regulations for vehicle engines and fuels would cause overall MSAT emissions to decline significantly over the next several decades. Based on regulations now in effect, an analysis of national trends with USEPA's Motor Vehicle Emission Simulator model forecasts a combined reduction of over 80 percent in the total annual emission rate for the priority MSAT from 2010 to 2050. Vehicle miles of travel are projected to increase by over 100 percent. This would both reduce the background level of MSAT and possibly generate minor MSAT emissions from this project.

3.3 Hydrology and Water Quality

3.3.1 Surface Water and Groundwater

The Hanapepe River is in the Hanapepe Watershed which has a drainage area of approximately 27 square miles and drains the southwest summit slopes of Mount Waialeale (FEMA, 2010). The drainage area is relatively long and narrow, approximately 11.5 miles long by 2.5 miles wide. The upper reach flows through agricultural lands. The lower reach flows through urbanized land through Hanapepe Town.

The National Wetlands Inventory program identifies one wetland/water type within the survey area: Riverine, Lower Perennial, Unconsolidated Bottom, Permanently Flooded.

3.3.2 Waters of the U.S.

Biologists with SWCA Environmental Consultants (SWCA) conducted fieldwork as needed to delineate Waters of the U.S. on September 29, 2014 (see Appendix A). The biologists used methods for determining the presence of wetlands as prescribed by the USACE Wetlands Delineation Manual (USACE, 1987) and the Supplement for the Hawaii and Pacific Islands Region (USACE, 2012). Based on these documents, jurisdictional wetlands are identified using the following three criteria:

- Hydric soils—soils permanently or seasonally saturated by water
- Hydrophytic vegetation—plants adapted to life in water or waterlogged conditions
- Wetland hydrology—areas periodically inundated or have soils saturated to the surface at some time during the growing season

The single sampling point evaluated by SWCA did not meet the three-criterion test indicative of wetland conditions pursuant to the USACE Wetlands Delineation Manual (USACE, 1987) and the Supplement for the Hawaii and Pacific Islands Region (USACE, 2012). Although the point was dominated by hau (*Hibiscus tiliaceus*), a facultative species, no hydric soil indicators or wetland hydrology were observed. The remaining areas outside of the river are composed of pavement, concrete, residential yards, and ornamental landscaping. Because of the lack of hydrophytic plants seen in these areas, no additional sampling points were assessed in the survey area.

3.3.3 Non-wetland Waters

A single perennial non-wetland water (Hanapepe River) was identified in the survey area (see Figure 3-2). The original drainage course appears modified (as indicated by riprap and vertical concrete walls) and the river is surrounded by urban development.

The stretch of Hanapepe River in the project area was determined to be tidally influenced because of the presence of marine/estuarine fish (striped mullet [*Mugil cephalus*] and great barracuda [*Sphyraena barracuda*]) observed during fieldwork. The high tide line was determined at the line of debris and vegetation. The Mean High Water line is 0.59 feet amsl, and the Mean Higher High Water is 1.017 feet amsl (NOAA, 2014). Downstream of the survey area, the Hanapepe River flows south and eventually empties into Hanapepe Bay roughly 0.35 mile from the survey area.

3.3.4 Water Quality

The Federal CWA requires states to collect and review surface water quality data and related information, and to prepare and submit biennial lists of waterbodies that are impaired (that is, not meeting State water quality standards) to USEPA. The current list is included in the 2014 State of Hawaii Water Quality Monitoring and Assessment Report (HDOH, 2014d). Hanapepe River is listed as a 303(d) Impaired Waterbody because the standard for turbidity is not met.

For all impaired waters, HDOH is required to develop the Total Maximum Daily Load (TMDL), which is the maximum amount of a pollutant (from point and nonpoint sources) that a waterbody can receive and still meet water quality standards, and to establish an allocation of that amount to the pollutant's sources. Because there is a large demand for TMDL calculations, HDOH has assigned a priority of low, medium, or high to each of the impaired waters listed based on the severity of pollution and how the water is used. The Hanapepe River has been assigned a low priority and limits have not been established.

3.3.5 Potential Impacts and Mitigation Measures

Short-term Construction Impacts

The project would involve demolition, excavation, grading, and construction in the stream and on the streambanks. Temporary impacts to Waters of the U.S. are anticipated to comprise approximately 0.17 acre.

Impacts because of in-water construction would be minimized and mitigated through BMPs including, but not limited to, the following:

- Construct and maintain barriers to isolate and confine in-water work areas to prevent sediment, petroleum products, chemicals, and other liquids and solids from entering Waters of the U.S.
- Remove and properly dispose of barrier collected material

Erosion would be reduced by implementing BMPs during construction. Because new disturbances would exceed 1 acre, an NPDES permit (Notice of Intent [NOI] Form C) would be obtained under CWA Section 402. An approved Storm Water Pollution Prevention Plan would be held onsite. BMPs to protect water quality include the following:

- Sedimentation via onsite drainage would be minimized through BMPs and/or erosion control devices
- Stabilize all disturbed areas with erosion control measures
- Revegetate disturbed area as soon as practical after construction
- Stabilize construction entrances to avoid offsite tracking of sediment
- All project-related materials and equipment placed in the water should be free of pollutants
- Fueling of land-based vehicles and equipment should take place at least 50 feet away from the water, preferably over an impervious surface

Accidental spills or releases of hazardous materials during construction could degrade the quality of stormwater runoff and reach the Hanapepe River. Temporary stormwater control measures would be implemented to protect water quality in the stream. The potential for accidental spills or releases is low and, if they did occur, would be cleaned up immediately.

Federal (Section 404/401) and State (Stream Channel Alteration) permits would be needed for discharges or fill in regulated waters. Dewatering operations would be conducted in accordance with applicable permit requirements.

Overall, implementation of BMPs would reduce the potential for sediment and/or pollutants to reach downstream waters. Small plumes of sediment could occur, primarily as a result of construction and/or removal of the dewatering/isolation structures; however, any turbidity released as a result of construction activities would be minimal and expected to dissipate quickly.

Long-term Impacts on Waters of the U.S. and Water Quality

Permanent impacts to Waters of the U.S. would result from installation of the replacement bridge structure. Approximately 0.77 acre of Waters of the U.S. would be permanently impacted. These impacts would be included as part of the request for Federal and State authorization for discharge in regulated waters, as discussed above.

Under existing conditions, the roadway is generally crowned and runoff sheet-flows off the pavement, over landscaped areas adjacent to paved shoulders, and into the stream. The bridge replacement project would not change the drainage pattern of stormwater flows. The project would increase the amount of impervious area by approximately 5,501 square feet (0.13 acres), which includes a wider structure surface than the existing bridge and connections to the highway. Because the proposed project is surrounded by rural development, the slight increase in impervious surface area would not have an adverse effect on stormwater runoff entering the river, nor are any other long-term impacts on water quality anticipated.

3.4 Natural Hazards

3.4.1 Flooding

The Hanapepe River Bridge is located within the Federal Emergency Management Agency (FEMA)-regulated floodway of the Special Flood Hazard Area (Zone AE), as shown in Community Panel No. 1500020287F, dated November 26, 2010 (see Figure 3-3). The existing 275-foot-long, arched bridge has an 11- to 13-foot clearance between the channel bottom and the point of the bridge superstructure. Two of the piers are located in the active waterway. The 100-year storm event is expected to overtop the roadway at the bridge. The existing bridge experiences pressure flow during the 100-year storm event.

3.4.2 Seismic Activity

The AASHTO LRFD Bridge Design Specifications (2014) provide minimum design criteria to address potential damages from seismic disturbances. The recommended seismic response parameters for use in design represent ground motion corresponding to an exceedance probability of approximately 7 percent in 75 years for an earthquake with an approximate 1,000-year return period. The AASHTO LRFD Bridge Design Specification scale is from Seismic Zone 1 through 4, where 1 is the lowest level for potential seismic induced ground movement. Kauai is designated Seismic Zone 1.

3.4.3 Tsunami

Tsunamis potentially destructive to the Hawaiian Islands may originate anywhere around the Pacific Rim or may be locally generated by earthquakes in or near the island chain. Approximately 50 tsunamis have been reported in the Hawaiian Islands since the early 1800s. The Hawaii Emergency Management Agency (State Civil Defense) established tsunami evacuation zones and maps for all coastal areas in Hawaii. The Hanapepe River Bridge project area is located within the tsunami evacuation zone (NOAA, 2015).

3.4.4 Potential Impacts and Mitigation Measures

Widening the bridge without raising it would still result in the roadway being overtopped in a 100-year storm event. The roadway would have to be raised substantially—a minimum of 4 feet—to achieve the required freeboard, a 2-foot vertical distance above flood level. Achieving such a clearance would result in significant impacts to adjacent roadways, driveways, and intersections. Therefore, the structure would not be raised as part of the proposed project, but replaced at the existing elevation. To address potential flooding, the proposed bridge would be longer than the existing bridge with bridge abutments located behind the existing abutments. This means that the width of the river channel would not be narrowed. The proposed bridge would meet or exceed the capacity of the existing bridge to convey stormwater flows and would meet the FEMA requirement of no rise in the 100-year water surface elevation within a floodway, documented by a No-Rise Certification.

The new bridge would also be designed to meet current standards for seismic performance. Therefore, no significant impacts relative to seismic activity are anticipated with implementation of the proposed project.

In the event of a tsunami warning, all construction would stop and personnel would evacuate to the safe zone on higher ground *mauka* of Kaumualii Highway. By observing the tsunami warning and moving into the safe zone, the risk to workers in the project area would be minimized. The proposed project would not impact the geology of the region and, therefore, would not increase the tsunami risk to the surrounding area.

3.5 Noise

3.5.1 Existing Conditions

The Hanapepe River Bridge is located in a rural town where noise receptors in the immediate environment include a mix of residences, businesses, and community facilities. Traffic on Kaumualii Highway is the primary noise generator.

A noise analysis was not performed because the project does not meet State criteria for when a noise analysis is needed, based on the Highway Noise Policy and Abatement Guidelines (HDOT and FHWA, 2011). Specifically, the proposed project is not a Type I project.

Type I projects are defined as a highway project with one of the following characteristics:

- (1) The construction of a highway on new location
- (2) The physical alteration of an existing highway where there is either:
 - (i) Substantial Horizontal Alteration. A project that halves the distance between the traffic noise source and the closest receptor between the existing condition to the future build condition
 - (ii) Substantial Vertical Alteration. A project that removes shielding, therefore, exposing the line-of-sight between the receptor and the traffic noise source. This is done by either altering the vertical alignment of the highway or by altering the topography between the highway traffic noise source and the receptor
- (3) The addition of a through-traffic lane(s). This includes the addition of a through-traffic lane that functions as a high-occupancy vehicle (HOV) lane, high-occupancy toll (HOT) lane, bus lane, or truck climbing lane
- (4) The addition of an auxiliary lane, except for when the auxiliary lane is a turn lane
- (5) The addition or relocation of interchange lanes or ramps added to a quadrant to complete an existing partial interchange
- (6) Restriping existing pavement for the purpose of adding a through-traffic lane or an auxiliary lane
- (7) The addition of a new or substantial alteration of a weigh station, rest stop, ride-share lot, or toll plaza

3.5.2 Potential Impacts and Mitigation Measures

Construction-related Noise

Construction noise impacts are unavoidable, but would be temporary. Noise levels produced during construction would be a function of the methods employed during each stage of construction. Equipment likely to be used includes the following: drill rig, crane, excavator, backhoe, front-end loader, grader, forklift, semi-trucks, dump trucks, concrete trucks, compactors, paving equipment, and compressors. Construction Noise Model User's Guide (FHWA, 2006) indicates that the loudest equipment generally emits noise in the range of 80 to 90 decibel(s) (A-weighted scale) (dBA) at a distance of 50 feet, which exceeds permissible levels.

Per HAR §11-46-3, the project area is located in the Class A zoning district which includes all areas equivalent to lands zoned residential and open, and the Class B zoning district which includes lands zoned business and commercial. For mixed zoning districts, HAR §11-46-4(d) states that the primary land use designation will be used to determine the applicable zoning district class and the maximum permissible sound level. Based on the County's zoning map (see Section 4.3.2), surrounding land use designations are nearly evenly divided between residential and open on the *makai* side of Kaumualii Highway and business and commercial on the *mauka* side. Given this distribution, Class A would provide a more conservative characterization of the existing environment. Under Class A, the maximum permissible sound levels are 55 dBA during the daytime (7 am to 10 pm) and 45 dBA during the nighttime (10 pm to 7 am), where maximum permissible sound level for impulsive noise is 10 dBA above the maximum permissible sound levels.

Construction noise is expected to exceed the State's "maximum permissible" property line noise levels, and a Community Noise Permit would be required from HDOH under HAR Chapter 11-46, Community Noise Control. For HDOH to issue a noise permit, the application would need to describe construction activities for the project.

Standard permit restrictions for construction projects include the following:

- No permit will allow construction activities creating excessive noise before 7 am and after 6 pm of the same day.
- No permit will allow construction activities that emit noise in excess of 95 dBA except between 9 am and 5:30 pm of the same day.
- No permit will allow construction activities that exceed the allowable noise levels on Sundays and on certain holidays. Pile driving and other activities exceeding 95 dBA would be prohibited on Saturdays.

The HDOH noise permit generally does not limit the noise level generated at the construction site, but rather the times at which high-volume construction can take place. Before issuing the permit, however, HDOH may require noise mitigations to be incorporated into construction plans (for example, maintenance and proper muffling of construction equipment and onsite vehicles that exhaust gas or air). HDOH may also require the Contractor to conduct noise monitoring. In addition to the noise permit, a noise variance may be requested from HDOH for specific occasions when work hours need to be extended into the evenings and/or on weekends to implement the overall construction schedule.

Long-term Noise Impacts

Replacing the Hanapepe River Bridge would not change highway capacity, traffic counts or operational conditions (that is, the posted speed limits). Therefore, noise levels after the project is completed are expected to be unchanged.

3.6 Hazardous Materials

3.6.1 Existing Conditions

A regulatory database computerized environmental report (CER) was acquired in the form of an Environmental Data Resources (EDR) Radius Map Report with GeoCheck®. The CER is an evaluation of select Federal and State standard source environmental databases that identifies sites within the approximate minimum search distance (AMSD) prescribed by ASTM International (ASTM) E1527-13. CH2M reviewed the sites listed in each environmental database to determine whether the identified sites are suspected to represent a material negative environmental impact to the subject property. The review focused on sites with documented releases that either had contamination left in place or had not been determined to be protective of human health and the environment with regulatory concurrence of no further action required. The CER is included in its entirety within Appendix B.

The CER identified a total of 19 sites within the AMSD of the proposed project site. All but one of the sites were identified as sites of potential concern of a material negative environmental impact for the proposed project. Six of the 19 listed sites appeared in multiple databases and were evaluated as 1 site. Table 32 summarizes the CER findings and the likelihood each site would affect the proposed construction in the project area. Proximity of the sites of potential concern range from a minimum of 0.09 mile (property at the eastern end of the bridge) to a maximum of 0.51 mile.

The bridge spans a tidally influenced section of the river, where six of the evaluated sites are located in a net cross or downgradient direction of the project area and, therefore, are unlikely to affect the proposed project. Five of the remaining sites listed have received regulatory concurrence of a No Further Action (NFA) determination or have no regulatory involvement. However, a leaking underground storage tank (LUST) site located at the eastern end of the bridge (Western Motors Service) received an NFA status determination with documented soil contamination in place. The closure report for the LUST removal showed soil contamination remaining in the bottom of the tank hold and the four side wall samples were non-detect. Groundwater was encountered in the base of the excavation and no groundwater sampling data was available (IES, 1994).

The remaining listed site (Sakoda Garage, Inc.), with a release and active remediation, was identified within 0.5-mile upgradient of the proposed project. However, the property is distant enough that the proposed project is unlikely to impact contaminated soil on the site.

TABLE 3-2
Computerized Environmental Report Records Findings

Property Name/Address	Distance (Miles)/ Direction	Elevation Relative to Subject Property	Database	Regulatory Status	Likelihood to Affect Proposed Project
Western Motors Service, Inc. 1-3680 Kaumualii Highway, Hanapepe, HI 96716	0.09/East	Higher	LUST, UST	<ul style="list-style-type: none"> • Site listed as NFA (4/19/2001) • Two USTs currently in use • Four USTs permanently out of use 	Property is located at the east end of bridge abutment. LUST received NFA with soil contamination left in the base of the former tank hold near the depth to groundwater. Groundwater data was not available. Site has potential to impact the proposed project if subsurface work were to extend onto the adjacent property.
Girards Quality Cleaners 3716 Hanapepe Road, Hanapepe, HI 96716	0.1/ Northeast	Higher	EDR US Historic Cleaners	<ul style="list-style-type: none"> • No releases or regulatory involvement reported for the property 	While the property is located close to the subject property at a higher elevation, no releases or regulatory involvement is reported. As such, it is unlikely this site would impact the proposed project on the subject property.
Former Hanapepe Repair Shop 4540 Hana Road, Hanapepe, HI 96716	0.13/ East-northeast	Higher	LUST, UST	<ul style="list-style-type: none"> • Site listed as NFA (3/12/2002) • Two USTs permanently out of use 	While the property is located close to the subject property at a higher elevation, the site is NFA according to HDOH records (HDOH, 2014a). The site is also upgradient of the Western Motors Service site and would be unlikely to impact the proposed project on the subject property.
Trademark Collision Call and G&K Auto Repair Shop 3716 Hanapepe Road, Hanapepe, HI 96716	0.17/ Northeast	Higher	EDR US Historic Auto Station	<ul style="list-style-type: none"> • No releases or regulatory involvement reported for the property 	While the property is located close to the subject property at a higher elevation, no releases or regulatory involvement is reported. As such, it is unlikely this site would impact the proposed project on the subject property.
Cilia's Service Station 1-3509 Kaumualii Highway, Hanapepe, HI 96716	0.19/ West	Higher	LUST, UST	<ul style="list-style-type: none"> • Site listed as NFA (6/22/2005) • Two USTs permanently out of use 	According to HDOH records, the site is NFA (HDOH, 2014a). In addition, the site is located west of the subject property and presumed to be crossgradient. As such, it is unlikely this site would impact the proposed project on the subject property.

TABLE 3-2
Computerized Environmental Report Records Findings

Property Name/Address	Distance (Miles)/ Direction	Elevation Relative to Subject Property	Database	Regulatory Status	Likelihood to Affect Proposed Project
Organizational Maintenance Shop 5 1-3460 Kaumualii Highway, Hanapepe, HI 96716	0.21/ West-southwest	Higher	LUST, UST	<ul style="list-style-type: none"> Site listed as NFA (12/9/1998) One UST permanently out of use 	According to HDOH records, the site is NFA (HDOH, 2014a). In addition, the site is located west-southwest of the subject property and presumed to be crossgradient. As such, it is unlikely this site would impact the proposed project on the subject property.
Longie's Cracked Seed – 3508 Hanapepe Road, Hanapepe, HI 96716	0.22/ West	Higher	LUST, UST	<ul style="list-style-type: none"> Site listed as NFA (10/30/2008) Two USTs permanently out of use 	According to HDOH records, the site is NFA (HDOH, 2014a). In addition, the site is located west of the subject property and presumed to be crossgradient. As such, it is unlikely this site would impact the proposed project on the subject property.
Denny's Repair and Service 4545 Kona Road, Hanapepe, HI 96716	0.28/ East-northeast	Higher	LUST	<ul style="list-style-type: none"> Site listed as NFA (12/29/1998) Two USTs permanently out of use 	According to HDOH records, the site is NFA (HDOH, 2014a). While this property is located at a higher elevation and upgradient/upstream of the subject property, and given the proximity of the site to the river as compared to the proximity of the site to the subject property of the proposed project, the site is more likely to impact the river and not the soil on the subject property. In addition, contamination from the river onto the subject property is not likely to affect the proposed project on the subject property.
Sakoda Garage, Inc. P.O Box 143/3954 Hanapepe Road, Hanapepe, HI 96716	0.32/ East-northeast	Higher	SHWS, LUST	<p>LUST</p> <ul style="list-style-type: none"> Site listed as NFA (9/16/2008) Three USTs permanently out of use <p>SHWS</p> <ul style="list-style-type: none"> Lead: HEER Hazard priority: Low Controls required to manage contamination Contamination not reported Response ongoing 	While this property is located at a higher elevation and upgradient/upstream from the subject property, given the proximity of the site to the river compared to the proximity of the site to the subject property of the proposed project, the site is more likely to impact the river and not the soil on the subject property. In addition, contamination from the river onto the subject property would not be likely to affect the proposed project on the subject property.

TABLE 3-2
Computerized Environmental Report Records Findings

Property Name/Address	Distance (Miles)/ Direction	Elevation Relative to Subject Property	Database	Regulatory Status	Likelihood to Affect Proposed Project
Hanapepe Base Yard 4380 Lele Road, Hanapepe, HI 96716	0.42/ West	Higher	LUST	<ul style="list-style-type: none"> • Site listed as NFA (9/23/1999) • Two USTs permanently out of use 	According to HDOH records, the site is NFA (HDOH, 2014a). In addition, the site is located downstream/ downgradient of the subject property. As such, it is unlikely this site would impact the proposed project on the subject property.
UST Release at Port Allen 4353 Waialo Road, Eleele, HI 96705	0.51/ Southeast	Higher	SHWS	<ul style="list-style-type: none"> • Lead: HEER • Total petroleum hydrocarbons, diesel-range organics in soil • No hazard present for Unrestricted Residential Use • NFA with unrestricted use (9/6/2006) 	According to HDOH records, the site is NFA (HDOH, 2014b). In addition, the site is located downstream/ downgradient of the subject property. As such, it is unlikely this site would impact the proposed project on the subject property.
Port Allen Bulk Petroleum Storage Terminal 4350 Waialo Road, Port Allen, HI 96716	0.51/ Southeast	Higher	SHWS	<ul style="list-style-type: none"> • Lead: HEER • Hazard undetermined and contamination not reported • Closed – documentation inadequate to evaluate risk (8/23/2004) 	According to HDOH records, the site is closed (HDOH, 2014b). In addition, the site is located downstream/ downgradient of the subject property. As such, it is unlikely this site would impact the proposed project on the subject property.

Notes:

HEER = Hazard Evaluation and Emergency Response
 SHWS = State Hazardous Waste Site

There is also potential for the bridge to contain asbestos-containing material (ACM) and lead based paint (LBP). Potential ACM on bridge structures includes abutment forms, waterproof membranes between the deck and the paving, geo-textiles, asbestos cement pipes and conduits, textured surfaces, and asbestos concrete. LBP may be present in paint chips or waste generated during removal of paint from bulk material, including striping paint grindings from asphalt pavement.

3.6.2 Potential Impacts and Mitigation Measures

Construction-related activities would require the removal, demolition, and rehabilitation of existing bridge structures. A survey would be performed at the existing structure to determine whether ACM, LBP, or both are present. If asbestos is present or suspected, an Asbestos Abatement Plan will be prepared to establish the appropriate protocols for abatement. If LBP is identified, work practices (in accordance with applicable State and Federal regulations) would be implemented before LBP removal to contain debris, control airborne dust, and properly dispose of materials with LBP.

Construction-related activities would also require the use of hazardous materials which may include lubricants of various weights and viscosities, hydraulic fluid for transit and construction equipment, cleaning products, and materials used for corrosion protection such as paint or other coatings on exposed steel. Based on the results of the CER, only one site has a likely potential for petroleum or lead to be encountered

within the proposed project area. Proposed projects in the project area would not impact the identified sites of potential concern.

In accordance with the *Standard Specifications for Construction of Roads and Bridges on Federal Highway Projects - FP-14* (FHWA, 2014), a Spill Prevention, Control, and Countermeasure (SPCC) plan would be developed, if required, at least 2 days before the beginning of work. If a SPCC is not required, a hazardous spill plan would be developed at least 2 days before the beginning of work which would describe preventative measures including the location of refueling and storage facilities, and the handling of hazardous materials. Furthermore, the hazardous spill plan would describe actions to be taken in case of a spill.

The contents and requirements of the hazardous materials spill plan would include the following measures:

- Equipment fluid leaks would be repaired immediately.
- Absorbent material manufactured for containment and cleanup of small hazardous materials spills would be kept at the project site.
- In the event of a large hazardous materials spill, or if unanticipated hazardous materials are encountered within the project site, the HDOH HEER Office will be contacted immediately.

Hazardous waste generated as a result of removal, demolition, and rehabilitation activities would be managed to the highest and best end use, and in a manner to ensure the protection of human health (workers, visitors to the site, and the general public) and the environment in accordance with applicable laws, rules, and regulations.

A hazardous waste determination for all anticipated waste would be prepared to determine whether the waste is classified as hazardous waste, universal waste, excluded waste, waste water, or solid waste. Before commencement of removal, demolition, and rehabilitation activities related to ACM or LBP, all applicable permits would be obtained from and notifications be provided to the Federal, State and local permitting and regulatory agencies with jurisdiction over this work. These permits and notifications would be documented in the project files.

If ACM is present, a State of Hawaii Certified Asbestos Supervisor (CAS) would be designated to supervise the asbestos removal and to ensure that the handling and removal of asbestos is accomplished by certified asbestos workers, pursuant to HDOH standards. Furthermore, the removal and disposal of asbestos would be performed such that it meets the requirements of USEPA regulation 40, *Code of Federal Regulations* (CFR) Part 61, local health department regulations, and all other applicable regulations.

If LBP is present, a Certified Industrial Hygienist (CIH) would be designated to provide continuous onsite monitoring of LBP removal. The CIH would ensure all appropriate labor, materials, and equipment are furnished and maintained to identify and implement safe removal/remediation, proper handling, transportation and disposal of LBP in compliance with all applicable regulatory requirements such as, but not limited to, ASTM D3335, 40 CFR Part 260, 40 CFR Part 261, 40 CFR Part 262, 40 CFR Part 263, 40 CFR Part 264, and 40 CFR Part 265.

3.7 Flora

3.7.1 Existing Conditions

SWCA biologists conducted field reconnaissance surveys of the project area on September 17 and 29, 2014 (see Appendix C). A pedestrian survey was conducted to record common plant species and vegetation types, as well as rare or listed species. No Federally or State-listed threatened, endangered, or candidate plant species were recorded in the survey area. Three Native Hawaiian plants were observed: uhaloa (*Waltheria*

indica), milo (*Thespesia populnea*), and hau (*Hibiscus tiliaceus*).² These species are indigenous (found in Hawaii and elsewhere) and are common in disturbed areas.

The vegetation in the survey area is composed of the following three main vegetation types:

- **Ruderal Vegetation:** This vegetation type is dominated by a mix of ruderal plant species—weedy, non-native grasses and herbaceous plants—that are abundant in heavily disturbed areas and along the edges of roads. Common species are swollen fingergrass (*Chloris barbata*), Guinea grass (*Urochloa maxima*), buffelgrass (*Cenchrus ciliaris*), Burmuda grass (*Cynodon dactylon*), wire grass weed (*Eleusine indica*), false ragweed (*Parthenium hysterophorus*), morning glory (*Ipomoea obscura*), khaki weed (*Alternanthera pungens*), lion’s ear (*Leonotis nepetifolia*), and common wireweed (*Sida acuta*). Ruderal trees and shrubs are less common and include koa haole (*Leucaena leucocephala*), opiuma (*Pithecellobium dulce*), and African tulip (*Spathodea campanulata*) seedlings. Mexican creeper (*Angigonon leptopus*) is climbing in trees along Kaumualii Highway.
- **Ornamental Landscaping:** Landscaped areas are characterized by ornamental trees and shrubs scattered in mowed weedy areas. A few royal Poinciana (*Delonix regia*) are planted with Macarthur palms (*Ptychosperma macarthurii*) along Kaumualii Highway. Other ornamental plantings include monkeypod trees (*Samanea saman*), mango (*Mangifera indica*), wedelia (*Sphagneticola trilobata*), hibiscus (*Hibiscus* spp.), bird of paradise (*Strelitzia reginae*), bauhinia (*Bauhinia* spp.), and mock orange (*Murraya paniculata*).
- **Mixed Riparian Forest:** A thick forest of mixed riparian trees is present along the Hanapepe River. Red mangrove (*Rhizophora mangle*) is the most abundant species, particularly along the water’s edge. The indigenous hau also forms monotypic stands along the river. Coconut trees (*Cocos nucifera*), milo, and kiawe (*Prosopis pallida*) are scattered in the area.

3.7.2 Potential Impacts and Mitigation Measures

Construction of the proposed project would require trimming and/or removing vegetation. Overall, the vegetation is disturbed from previous and current land use activities and is typical of urbanized areas. No threatened or endangered plants were found. In addition, no designated plant critical habitat occurs nearby. Nevertheless, the following BMPs related to botanical resources would be implemented:

- Natural vegetation, especially grass, would be retained where possible.
- Construction traffic would be routed to avoid existing or newly planted vegetation.
- Removed vegetation would not be deposited along the banks of any watercourse.
- All removed vegetation would be disposed of away from the site within 3 months of being removed.
- The Federal Seed Act, the Federal Noxious Weed Act, and applicable State and local seed and noxious weed laws would be conformed to.
- Dirt, plant, and foreign material would be removed from vehicles and equipment before mobilizing to the project site to prevent introduction of noxious weeds and non-native plant species into the work site.

Based on the lack of sensitive botanical resources and implementation of BMPs, the proposed project is not expected to have a significant adverse impact on botanical resources.

² The plant names used in this assessment follow Wagner et al. (2012), Wagner and Herbst (2003), and Wagner et al. (1999).

3.8 Fauna

SWCA biologists investigated the presence of known or suspected threatened, endangered, or candidate wildlife species during the September 2014 field surveys (see Appendix C). Fauna surveys consisted of a pedestrian survey before 11 am or after 4 pm when wildlife was most likely to be active. Visual and auditory observations were made.

In addition to the field survey, the U.S. Fish and Wildlife Service (USFWS) provided a listing of species that may occur on Kauai along with recommended measures that USFWS believes will reduce impacts on each species (USFWS, 2014). Conservation measures have been incorporated into Section 3.8.6, below.

3.8.1 Avifauna

The bird species observed in and near the project limits are species typically found in disturbed lowland areas. In all, nine bird species were documented: Cattle egret (*Bubulcus ibis*), Common myna (*Acridotheres tristis*), domestic chicken (*Gallus*), Hwamei (*Garrulax canorus*), and Japanese white-eye (*Zosterops japonicas*), Northern cardinal (*Cardinalis cardinalis*), Rock pigeon (*Columbia livia*), Spotted dove (*Streptopelia chinensis*), and Zebra dove (*Geopelia striata*). All of the species were introduced to the Hawaiian Islands. The cattle egret and northern cardinal are non-native birds protected under the Migratory Bird Treaty Act (MBTA). The native migrant Pacific golden-plover (*Pluvialis fulva*) could also exist in the survey area.

During the SWCA survey, no listed waterbirds were observed. However, four waterbird species listed as endangered under the Federal Endangered Species Act (ESA) and State of Hawaii Endangered Species list could potentially occur in the area because suitable loafing and foraging habitat is available: Hawaiian gallinule or alae ula (*Gallinula galaeata sandvicensis*), Hawaiian coot or alae keokeo (*Fulica alai*), Hawaiian stilt or aeo (*Himantopus mexicanus knudseni*), and Hawaiian duck or koloa maoli (*Anas wyvilliana*). Suitable nesting habitat for the duck, coot, and gallinule is also present.

The Federally and State-listed endangered Hawaiian goose or nene (*Branta sandvicensis*) could also browse within the ruderal vegetation along the river banks on occasion. However, suitable nesting habitat for nene is not present.

Seabirds of concern include the Hawaiian petrel (*Pterodroma sandwichensis*) listed as endangered under the ESA and by the State of Hawaii, the Newell's shearwater (*Puffinus auricularis newelli*) listed as threatened under the ESA and by the State of Hawaii, and the band-rumped storm-petrel (*Oceanodroma castro*) a proposed endangered for listing species under the ESA and listed as endangered by the State of Hawaii. These birds may fly over the project at night while travelling to and from the ocean and upland nesting sites in the mountainous interior of Kauai. No suitable nesting sites for these species are present in the project area.

3.8.2 Mammalian Species

Hawaiian Hoary Bat

The Hawaiian hoary bat or opeapea (*Casiurus cinereus semotus*) is listed as an endangered species under the ESA and the State of Hawaii's Endangered Species List. It is the only native terrestrial mammal species that is still present within the Hawaiian Islands. A survey specifically for Hawaiian hoary bats was not conducted, but suitable habitat for roosting and foraging was noted during the biological survey. These animals are insectivores and are regularly observed foraging over streams, reservoirs, and wetlands up to 300 feet offshore. The river corridor in the survey area would be considered suitable bat foraging habitat.

Hawaiian hoary bats typically roost in dense canopy foliage or in subcanopy when canopy is sparse, with open access for launching into flight. Hawaiian hoary bats have been observed roosting in coconut and mango trees, which are present in the survey area. Other trees in the survey area that have dense canopy foliage and could also be suitable roost trees include milo, red mangrove, and hau.

Other Terrestrial Mammals

Dogs (*Canis familiaris*) and cats (*Felis catus*) are likely to enter the area because of nearby residences. Other mammals that can be expected onsite include mice (*Mus musculus*), rats (*Rattus spp.*), and mongoose (*Herpestes javanicus*).

Hawaiian Monk Seal

The Hawaiian monk seal (*Neomonachus schauinslandi*) is listed as endangered under the ESA and is listed on the State of Hawaii Endangered Species List. It is also protected by the Marine Mammal Protection Act of 1972. Hawaiian monk seals spend most of their life at sea, but also rely on land habitat for resting, molting, pupping, nursing, and avoiding marine predators. The seals are considered foraging generalists that generally hunt outside of the immediate shoreline in waters 60-300 feet deep. There are also accounts of seals traveling up rivers and streams, particularly on Hawaii Island and Kauai to feed and rest.

3.8.3 Terrestrial Invertebrates

No reptiles or amphibians were seen during the survey. None of the terrestrial reptiles or amphibians in Hawaii are native to the islands.

3.8.4 Aquatic and Marine Fauna

SWCA made surface observations of fishes and compiled a list of fishes and aquatic invertebrates for the project area from the Hawaii Division of Aquatic Resources (DAR) Watershed Atlas (Parham et al., 2008). The lists may be found in the Biological Assessment (BA) (Appendix C). The assessment notes that some of the fish—notably four species of endemic oopu (or gobies) — are typically found in the estuarine region of the river, but are included in the list because they are amphidromous and pass through the Hanapepe River Bridge area during two periods of their life cycle.

Sea Turtles

The green sea turtle (*Chelonia mydas*) is listed as threatened under ESA and by the State of Hawaii. The hawksbill sea turtle (*Eretmochelys imbricate*) is listed as endangered under ESA and by the State of Hawaii. Both species share similar habitat requirements and biological characteristics.

Green sea turtles are the most common sea turtle found in the Hawaiian archipelago. They are genetically distinct from other green sea turtle populations. Green sea turtles are generally common along all coastlines of the main Hawaiian islands. Individuals have been observed transiting Hawaii rivers up to two miles inland.

Hawksbill sea turtles are known to exhibit high site fidelity, returning to the same resting spot night after night. They can be found near rock outcrops and high energy shoals, which are optimum sites for sponge growth, a preferred food source. Hawksbill turtles are not regularly reported from Kauai.

3.8.5 Critical Habitat

No designated or proposed critical habitat for threatened or endangered species occurs in the project area.

3.8.6 Potential Impacts and Mitigation Measures

3.8.6.1 Seabirds

The project area does not provide suitable nesting or foraging habitat for the protected seabirds. However, breeding individuals may fly over the area at night while traveling between upland nesting and ocean foraging sites. Disorientation and fall out as a result could occur to individuals attracted to nighttime lighting. The following conservation measures are proposed to minimize the potential for light attraction.

- Construction activity would be restricted to daylight hours during the seabird peak fallout period (September 15 to December 15), thereby avoiding the use of nighttime lighting that could attract seabirds. To minimize impacts to the surrounding residential areas, night work is not anticipated.
- All outdoor lights would be shielded to prevent upward radiation.

- Outside lights not needed for security and safety would be turned off from dusk through dawn during the peak fallout period (September 15 to December 15).

Highway lighting would remain unchanged and there is no plan to install lights on the replacement bridge itself. Two existing light poles on either side of the bridge would be replaced and may require modest relocation to accommodate the slightly wider footprint of the new bridge.

Because all impacts on the Hawaiian petrel and Newell's shearwater would be discountable, the proposed project may affect, but is not likely to adversely affect individuals or populations of these species.

Because all impacts on the band-rumped storm petrel would be discountable, the proposed project is not likely to jeopardize the continued existence of individuals or populations of the species.

3.8.6.2 Waterbirds

Permanent removal of foraging and nesting habitat would constitute a long-term direct impact. Of the 1.9 acres identified as the project's permanent impact area, only a small portion constitutes foraging habitat for waterbirds, given that much of the project area is roadway. Temporary vegetation removal would be restored following construction. This impact would be discountable because of the small area of impact and availability of nearby foraging and nesting habitat for displaced waterbirds to use.

Short-term direct impacts to waterbirds could occur if human activity, noise, and vegetation removal disrupt nesting adults, cause abandonment of nests, ducklings, and/or chicks, which in turn increase the likely of nest failure, exposure, or trauma. However, short-term direct impacts are unlikely to occur because of the following conservation measures.

- Although there is a lack of suitable nesting habitat within the project area, if a waterbird nest with eggs or chicks/ducklings is discovered in the project area during construction, work will cease within 100 feet of the nest until the chicks/ducklings have fledged.
- Waterbird nests, chicks, or broods found in the area before or during construction will be reported the USFWS within 48 hours.
- If an endangered Hawaiian waterbird is present or lands in the area during ongoing activities, all activities within 100 feet of the bird will cease, and the bird will also not be approached. Work may continue after the bird leaves the area of its own accord.

Because all impacts on the Hawaiian coot, Hawaiian gallinule, Hawaiian stilt, and Hawaiian duck would be discountable or insignificant, the proposed project may affect, but is not likely to adversely affect individuals or populations of these species.

3.8.6.3 Nene

Removal of foraging habitat for the staging area north of the bridge would remove a potential food source, and negatively impact nene that may forage near the bridge. This impact would be short term and would only occur for the duration of construction. Although reducing the amount of available forage could impact the health of individuals, the small area removed would not be likely to affect nest success or population growth. Furthermore, abundant foraging habitat is available adjacent to the project area into which the nene could move.

Implementation of the proposed improvements would not increase the potential for vehicle strike because the replacement bridge will have two 12-foot-wide travel lanes like the existing bridge and the posted speed limit will remain at 35 mph.

The following conservation measures would be taken to reduce or eliminate project-related impacts.

- All regular on-site staff will be trained to identify nene and the appropriate steps to take if nene are present.

- If a nene is found in the project area, all activities within 100 feet of the bird will cease, and the bird will not be approached. If a nest is discovered, USFWS will be contacted. If a nest is not discovered, work may continue after the bird leaves the area of its own accord.

Because all impacts on the nene would be discountable, the proposed project may affect, but is not likely to adversely affect individuals or populations of the species.

3.8.6.4 Hawaiian Hoary Bats

Bats may roost in trees present in the project limits, or they may forage throughout the area. Direct impacts to bats would occur only if a juvenile bat too small to fly, but too large to be carried by a parent, was present in a trimmed or cut down tree. The possibility of adversely affecting Hawaiian hoary bats as a result of the proposed project is small. However, the following measures would be taken to avoid impacts.

- Any fences erected as part of the project would have barbless top-strand wire to prevent entanglements of the Hawaiian hoary bat on barbed wire. No fences in the survey area were observed with barbed wire. However, if fences are present within the project limits, the top strand of barbed wire would be removed or replaced with barbless wire.
- No trees taller than 15 feet would be trimmed or removed as a result of this project between June 1 and September 15 when juvenile bats not yet capable of flying may be roosting in the trees. However, if a limited number of trees would need to be cleared during that time period, a qualified biologist would use appropriate protocols to survey for bats prior to trimming or cutting.

Because all impacts on the Hawaiian hoary bat would be discountable or insignificant, the proposed project may affect, but is not likely to adversely affect, individuals or populations of the species.

3.8.6.5 Hawaiian Monk Seal

The project area is upstream from the ocean in an area that is not ideal for Hawaiian monk seal basking or pupping. However, Hanapepe River within the study area could provide habitat for feeding and resting. Monk seals could be temporarily displaced from foraging within the project area during construction. Displacement would not have a significant impact on monk seals because foraging individuals could find similar resources upstream or downstream from the construction site or return to marine habitats.

The following conservation measures would reduce or eliminate project-related impacts and avoid adverse effects.

- Construction activities will not occur if a Hawaiian monk seal is in the construction area or within 150 feet of the construction area. Construction will resume after the animal voluntarily leaves the area. If a monk seal/pup pair is present a 300-foot buffer will be observed. If the species is noticed after work has already begun, that work may continue only if, in the best judgement of the project supervisor, there is no way for the activity to adversely affect the animal(s).
- Any construction-related debris that may pose an entanglement threat to monk seals will be removed from the construction area at the end of each day and at the conclusion of the construction project.
- Workers will not attempt to feed, touch, ride, or otherwise intentionally interact with any monk seal.

Because all impacts on the Hawaiian monk seal would be discountable or insignificant, the proposed project may affect, but is not likely to adversely affect individuals or populations of the species.

3.8.6.6 Sea Turtles

In the short term, construction activities (specifically noise and light) could temporarily impact sea turtles by displacing individuals from riverine habitats and alter an individual's typical foraging patterns. However, displacement from Hanapepe River would not have a significant impact on sea turtles because foraging individuals could find similar resources upstream or downstream from the construction site or return to marine habitats.

Human-related disturbance (such as harassment) and mortality (for example, impact from boat propellers, gill net entanglement, and fishing activities) are not likely to increase as a result of the proposed project. Implementation of the following conservation measures would reduce project-related impacts.

- Construction activities will not occur if a sea turtle is in the construction area or within 150 feet of the construction area. Construction will resume after the animal voluntarily leaves the area. If the species is noticed after work has already begun, that work may continue only if, in the best judgement of the project supervisor, there is no way for the activity to adversely affect the animal(s).
- Any construction-related debris that may pose an entanglement threat to sea turtles will be removed from the construction area at the end of each day and at the conclusion of the construction project.
- Workers will not attempt to feed, touch, ride, or otherwise intentionally interact with any sea turtle.

Because all impacts on sea turtles would be discountable or insignificant, the proposed project may affect, but is not likely to adversely affect individuals and populations of the species.

3.8.6.7 Fish and Aquatic Invertebrates

The following conservation measures to protect water quality would be implemented to reduce potential impacts to aquatic and marine resources. The applicability of these conservation measures will depend on the site-specific construction means and methods chosen.

- New permanent and temporary structures would be designed and installed to avoid interfering with fish passage.
- Disturbed streambanks would be revegetated or stabilized as soon as practical to reduce erosion.
- Turbidity and siltation from project-related work would be minimized and contained through the appropriate use of erosion control practices, effective silt containment devices, and the curtailment of work during adverse weather/flow conditions.
- A contingency plan to control toxic materials would be developed.
- Appropriate materials to contain and clean potential spills would be stored at the worksite and be readily available. All project-related materials and equipment placed in the water would be free of pollutants.
- Daily pre-work equipment inspections would be performed for cleanliness and leaks. All heavy equipment operations will be postponed or halted should a leak be detected, and they will not proceed until the leak is repaired and the equipment is cleaned.
- Fueling of land-based vehicles and equipment would take place at least 50 feet from the water, preferably over an impervious surface. Fueling of vessels would be done at approved fueling facilities.
- A plan would be developed to prevent debris and other wastes from entering or remaining in the marine environment during the project.
- Erosion and sediment control measures would be in place before initiating earth-moving activities. Functionality would be maintained throughout the construction period.
- No project-related materials (for example, fill, revetment rock, or pipe) will be stockpiled in the water (for example, intertidal zones, reef flats, stream channels, or wetlands) or on beach habitats.
- No contamination (for example, trash or debris disposal, invasive species introductions, or attraction of non-native pests) of adjacent habitats (for example, reef flats, channels, open ocean, stream channels, wetlands, beaches, or forests) shall result from project-related activities.

- Any soil exposed near water as part of the project shall be protected from erosion (with plastic sheeting, filter fabric, or similar) after exposure and stabilized as soon as practicable (with native or non-invasive vegetation matting, hydroseeding, or similar).
- All debris removed from the aquatic environment shall be disposed of at an approved site.

3.9 Archaeological Resources

3.9.1 Existing Conditions

The project area is located in the Hanapepe Ahupuaa on the southwest side of Kauai within the district of Waimea. It is bounded by the ahupuaa of Hoanuanu and Makaweli to the north and Wahiawa to the south.

From the first contact with peoples of the western world, it appears that native people of Hanapepe were strongly impacted. Hanapepe was the site of introductions of new plants and animals at the time of Captain Cook. The Russians later brought maize, cotton, tobacco, and sheep. Rice and sugar are both part of the Hanapepe Valley history of agricultural crops and techniques. New industrial developments, such as railroading and shipping, affected land use and livelihoods in Hanapepe.

The earliest settlements were along the coast since it provided fishing resources and sufficient land to grow taro. During the period of expansion (11th through 13th centuries), the coastal populations moved inland to create more arable land for taro and sweet potato, to seek feathers and ieie vines for making capes and helmets, and other goods needed to support the development of the alii class. While it appears slightly removed from the centers of power, Hanapepe was close enough to participate in social and economic changes occurring island wide. Today, large landholdings in and around the Hanapepe River Valley are in the possession of the Robinson family trust and Alexander and Baldwin, Inc., both linked to the region's once flourishing sugar plantation economy.

An Archaeological Inventory Survey (AIS) was completed by Cultural Surveys Hawaii (CSH) (see Appendix D). The fieldwork included a 100 percent pedestrian inspection and subsurface testing. The pedestrian inspection, conducted on September 17, 2014, included identification and documentation of cultural resources within the project area and a description of ground visibility of cultural resources, visual cues of modern use or disturbance, and vegetation. Subsurface testing occurred on June 13 and 14, 2015, and consisted of two backhoe-assisted test trenches.

Five cultural resources were identified during the AIS. However, one of the resources (State Inventory of Historic Properties [SIHP] # -2284³, erosion control wall) was determined to be outside the project's Area of Potential Effect (APE). The remaining four resources are shown on Figure 3-4. Because these are architectural resources, they are discussed in Section 3.10.

Subsurface Testing Results

Two test trenches were excavated along the shoulder of Kaumualii Highway—one on the east side of the river and one on the west side. The observed stratigraphy from the east trench consisted of various layers of fill. On the west side of the bridge, the observed stratigraphy consisted of fill, native soil, and sedimentary deposits. No traditional Hawaiian cultural material was observed. Two historic artifacts were observed in the fill and identified as a pressed glass fragment and metal pull tab from a can or food container.

3.9.2 Potential Impacts and Mitigation Measures

Given the lack of subsurface artifacts discovered during testing, no further archaeological fieldwork is proposed for this project. If cultural resources or human remains are inadvertently discovered during construction, the contractor would comply with State law and administrative rules for handling them.

³ Note that all SIHP numbers should be preceded by "50-30-09."

3.10 Historic Architectural Resources

3.10.1 Existing Conditions

Mason Architects, Inc. prepared a Historic Resources Inventory Form (July 2015) for two of the four resources within the APE eligible for listing on the National and Hawaii State Registers of Historic Places: Hanapepe River Bridge (SIHP #50-30-09-2280) and flood control levee (SIHP #50-30-09-2283). Locations are shown on Figure 3-4. Other historic resources not eligible for listing or located outside of the APE have been identified and are summarized in the Historic Resource Inventory Form (see Appendix E).

Hanapepe River Bridge (SIHP #50-30-09-2280)

The Hanapepe River Bridge, constructed in 1938, was partially funded by Federal Aid money (sometimes called Post Road Funds). Bridges were a special concern of the Federal highway system, and the Territorial Highway Department began to straighten out the belt roads and replace narrow bridges as occurred in re-routing the highway to bypass the town and the Hanapepe Road Bridge. New bridges constructed with Federal Aid dollars, such as the Hanapepe River Bridge, were generally larger and more decorative than county financed bridges.

The highway bridge retains sufficient integrity to convey its significance and eligibility for listing on the National and Hawaii State Historic Registers. Integrity of setting is somewhat reduced by construction in the vicinity of the bridge. Integrity of design, materials, and workmanship are reduced by alterations, but the major design elements, construction materials and their craftsmanship are evident.

The following are primary historic character-defining architectural features of the bridge:

- Setting is urban, low rise residential and small businesses
- Channelized river upstream of the bridge with hardened (levee) left bank protects historic Hanapepe Town
- Concrete bridge construction with Greek cross openings in the parapet
- Parapet stanchions with rectangular light fixtures facing the roadway
- End stanchions are L-shaped in plan with inscriptions and radiused end posts
- Basket arch profile stringers spanning between piers and pier/abutments
- Pedestrian walkways

Secondary historic character-defining architectural features include the following:

- Three-span design
- Concrete abutments and wing walls

The Hanapepe River Bridge was assessed for significance (pursuant to HAR §13-13-275-6) and determined to be eligible for listing in the National and Hawaii Registers pursuant to 36 CFR 60.4 and HAR §13-198-8, respectively. Eligibility was based on the following significance criteria:

Criterion “A” (associated with events that have made a significant contribution to the broad patterns of our history) — for association with the development of Kauai’s Belt Road system and the significant role the bridge played in the history of Hanapepe Town.

Criterion “C” (embodies the distinctive characteristics of a type, period, or method of construction, or that represents the work of a master, or that possesses high artistic values, or that represents a significant and distinguishable entity whose components may lack individual distinction) — as an excellent example of later developments in concrete bridge construction on Kauai and for representing the “work of a master,” William R. Bartels, Chief Highway Bridge Engineer for the Territorial Highway Department.

Flood Control Levee (SIHP #50-30-09-2283)

The levee is an earthen and riprap berm approximately 380 feet long between the Hanapepe River Bridge and the Hanapepe Road Bridge. It is about 12 feet high, topped by a 3-foot-high concrete wall. The east bank level extends further upstream from the County bridge, out of the project area, for a total distance of about

2,200 feet. There is also a west bank levee, which extends upstream from the County bridge for a distance of about 4,465 feet. Both were engineered by USACE, Honolulu District. The east bank level was built around 1959 and the right bank was completed in August 1963. In 1965, the USACE Honolulu District called for an additional 3 feet of height to both levees. This modification presumably was the 3-foot-high wall atop the east bank berm, which was completed in November 1966. This levee has been evaluated as eligible for the National Register of Historic Places (NRHP) under Criterion A for its association with community planning and development of Hanapepe, as well as with Federal flood control projects.

3.10.2 Potential Impact and Proposed Mitigation Measures

Construction access and staging would occur within the APE, but are not expected to have a permanent adverse impact on the setting of historic resources.

Replacement Bridge

Demolition and replacement of the historic Hanapepe River Bridge will result in an Adverse Effect on the Hanapepe River Bridge (SIHP #50-30-09-2280) in accordance with Federal regulations (36 CFR 800.5) and an Effect, with Agreed Upon Mitigation Commitments in accordance with HAR §13-13-275-7. The undertaking does not meet the Secretary of the Interior's Standards for the Treatment of Historic Properties; (36 CFR 800) which calls out an adverse effect as physical destruction of, or damage to, all or part of the property; and HAR §13-275-7, where an effect of potential harm may include partial or total destruction or alteration of the historic property.

To mitigate removal of the historic Hanapepe River Bridge, the proposed replacement structure is a three-span bridge with span lengths and arches similar to the existing bridge. New concrete railings would have similar style openings to reflect the aesthetics and historic character of the existing railing.

Left-bank Levee

When the wider bridge is built, its northeast abutment will remove about 6 feet, 9 inches of the overall length of the levee. A temporary two-lane bypass road is proposed to be installed just *mauka* of the existing bridge using a temporary bridge structure to span the river. The bypass bridge will not affect the levee. The contractor will be required to bridge over the levee and not impact it. Other than the 6-foot, 9-inch length of levee to be removed, the existing bank of the levee and the concrete topping walls will be retained and protected in place. Any incidental damage to the levee will be repaired using salvaged, original material to the extent possible, and repaired in kind.

The levee is eligible for the NRHP for its association with community planning and the development of Hanapepe under Criterion A. It is not considered eligible under Criterion C because it lacks significance associated with engineering distinction. Because this eligibility is based on the association with an event, rather than engineering or structural qualities, the removal of a short, 6-foot, 9-inch length of the levee from its overall total length of 2,200 feet would not adversely affect a characteristic that qualifies it for inclusion in the NRHP. Therefore, removing a portion of the historic levee would result in No Adverse Effect on the levee (SIHP #50-30-09-2283) in accordance with Federal regulations (36 CFR 800.5) and an Effect, With Agreed Upon Mitigation Commitments in accordance with HAR §13-13-275-7.

For any cultural resources evaluated as eligible for listing on the National and Hawaii Registers of Historic Places and impacted by this project, architectural recordation would occur before construction. Implementation of these mitigation measures is expected to reduce the adverse impacts to less than significant levels.

3.11 Cultural Resources

3.11.1 Existing Conditions

Act 50, Session Laws of Hawaii, 2000, requires that a proposed project's impact on the community's cultural practices be disclosed in the environmental review process. Consistent with this requirement, CSH conducted a cultural impact assessment for the Hanapepe River Bridge project. The assessment included archival research of relevant background history, *kaao* (legends), traditional *mooolelo* (stories), *wahi pana* (storied places), *olelo noeau* (proverbs), *oli* (chants), *mele* (songs), traditional subsistence and gathering methods, and ritual and ceremonial practices. Ethnographic interviews were also conducted with persons knowledgeable about cultural resources, practices, and beliefs relevant to the study area. Specifically, CSH conducted three interviews for the project: Kamanaopono Crabb, *Ka Pouhana* at the Office of Hawaiian Affairs (OHA); Rhoda Libre, founder of Kauai Westside Watershed Council; and Frank and Abbey Santos, traditional saltmakers in Hanapepe. The findings of the Cultural Impact Assessment are summarized below. A copy of the cultural impact assessment is provided in Appendix F.

Hanapepe literally translates to "crushed bay," possibly referring to the frequent landslides of the area. The name is thought to have derived from the appearance of the cliffs as viewed from the sea. Hanapepe is also the name of a honeycreeper known as the nuku puu on the other Hawaiian Islands.

Mahele documentation indicates Hanapepe Ahupuaa was rich in agricultural resources. Approximately 92 claims were filed for the area; however, only 66 claims were awarded. The majority of land was being planted in *loi kalo* (taro terrace). In addition, house sites, *kula* lands (used for dryland crops such as sweet potatoes), *moo* (small land plot) with unspecified usage, pasture, gardens, *loko* (pond), salt lands, and a pigpen were documented in Land Commission Award claims. Trails could be found along the shorelines, streams, and leading to the uplands of Hanapepe Ahupuaa. Before the twentieth century, the Hanapepe River needed to be forded when traveling between Waimea and east Kauai. Trails could also be found going to Mount Waialeale and beyond.

Foreign interests began to invest in the surrounding lands of Hanapepe, including Eleele and Wahiawa during the mid- to late nineteenth century. The development of large-scale agricultural ventures stimulated by the Reciprocity Treaty of 1875 allowed for certain goods, such as sugar, to be exported duty-free to the United States. The Hawaiian Sugar Company located on the west side of lower Hanapepe Valley and the McBryde Sugar Company in Wahiawa were two major sugar companies in the area. In 1906, the plantation-sponsored Kauai Railway was constructed. The rail line built a bridge across the Hanapepe River extending to Eleele Landing. Eleele Plantation had its own mill and landing, popularly known as Port Allen. The Kauai Railway liquidated in 1941.

According to previous archaeology, several burial sites can be found *mauka* and *makai* of the current project area. *Mauka* of the project area are three burials: SIHP #50-30-09-607, a burial in Japanese Cemetery; SIHP # -0497, a burial in First United Church Cemetery; and SIHP # -1710, a coffin burial and several fragments of human burials. *Makai* of the project area are several burials, including SIHP # -0608, burial within Filipino Cemetery; SIHP #s -0704 and -0705, two human burials found in the vicinity of a historic cultural deposit; SIHP # -0604, burial in Veteran's Cemetery; SIHP # -0651, burial in Japanese Cemetery; and a cluster of burials found within Bennett's Site 53 (burial ground northwest of Hanapepe Bay) including SIHP #s -0053 and -01987.

3.11.2 Potential Impacts and Mitigation Measures

Mahele documents indicate the vicinity was once under habitation and cultivation by Native Hawaiians. Previous archaeology conducted *mauka* and *makai* of Hanapepe River Bridge yielded *iwi kupuna* (ancestral bones), including three burials found within a 0.5-mile radius of the current project area. No archaeological projects have been conducted within the current project area. Based on these findings, there is a possibility *iwi kupuna* may be present or in the vicinity of the project area and that land-disturbing activities during construction may uncover presently undetected burials or other cultural finds. Should burials (or other

cultural finds) be encountered during ground disturbance or via construction activities, all work would cease immediately and the appropriate agencies notified pursuant to applicable law, HRS §6E.

A community concern was expressed regarding the effects of construction on the “historic look” of the bridge which is seen as iconic to historic Hanapepe Town. In addition to preserving the historic look, there was a recommendation to maintain the view plane from the bridge, referring to an unobstructed view of the ocean. To address the appearance of the bridge, the replacement structure will be designed with railing openings and an arched substructure that reflects the existing structure. The bridge railing will be raised to a height of 42 inches in accordance with the current standard for bicyclists’ safety. This height and the rail openings will not significantly change makai views available to motorists under current conditions.

Another community concern related to impacts of construction on the water quality and ecosystem health of Hanapepe River, whereby disturbance to river quality may impact cultural practitioners such as fishermen and/or paddlers. As discussed in Sections 3.3.5 and 3.8.6, BMPs will be implemented to maintain water quality in accordance with State standards.

During the construction period, cultural practices and gathering activities near the proposed project (should any occur) would be temporarily restricted for safety reasons. All permitted activities would resume once the improvements have been completed.

3.12 Population and Demographic Factors

3.12.1 Existing Conditions

There are four census tracts in the southern and western areas of Kauai:

- Census Tract 406, Koloa-Poipu
- Census Tract 407, Kalaheo-Eleele
- Census Tract 408, Hanapepe
- Census Tract 409, Waimea-Kekaha

Approximately 35 percent of the island’s population resides within the four census tracts (see Table 3-3). For this region, the U.S. Census counted a combined population of 23,418 in 2010. Compared to 2000, the region experienced a net increase of 2,010 persons or 9.4 percent. The three census tracts in the western part of the island—from Kalaheo to Kekaha—experienced the highest growth rates within the region.

TABLE 3-3
Resident Population, Selected Census Tracts, 2000 and 2010

Census Tract	Area	2000 Population	2010 Population	Net Change	Percent Change
406	Koloa-Poipu	5,404	5,683	279	5.2
407	Kalaheo-Eleele	7,441	8,403	962	12.9
408	Hanapepe	3,438	3,771	333	9.7
409	Waimea-Kekaha	5,125	5,561	436	8.5
Region	South/West Kauai	21,408	23,418	2,010	9.4
County	Kauai	58,303	66,921	8,618	14.8

Source: U.S. Department of Commerce, Census Bureau, 2010.

3.12.2 Potential Impacts and Mitigation Measures

The proposed project would replace an existing bridge with no change in vehicular capacity using the structure. Therefore, the project is not expected to affect the residential population or demographic characteristics. However, given that approximately 35 percent of the island's residents rely on Kaumualii Highway, maintaining a reliable transportation infrastructure would meet the mobility needs of a significant proportion of Kauai's population.

Environmental Justice

The proposed project involves replacement of an existing structure and would not have a disproportionately high or adverse impact on minority or low-income populations. Outreach to Native Hawaiian communities occurred through Section 106 consultation, the cultural impact assessment, and HRS 343 environmental review process.

3.13 Economic and Fiscal Resources

3.13.1 Existing Conditions

The Kauai economy has transformed over time from a plantation economy to a modern economy with a mix of tourism, diversified agriculture, construction, retail, and professional businesses. As reported in the 2013 edition of County Business Patterns (U.S. Department of Commerce, Census Bureau, 2013), Kauai had a total of 1,986 business establishments with 25,186 paid employees and an annual payroll of more than \$880 million.

The largest industries in terms of jobs are trade (retail and wholesale) and services. In 2013, hotels and food services accounted for 8,372 jobs, retail trade had 3,992, and healthcare and social assistance had 3,038. The Poipu resort area, south of the proposed project, is a major employment center that draws workers from much of the island.

The national economic recession of the late 2000s had a ripple effect on tourism and the island's primary economic engine. However, economic conditions have since improved and the unemployment rate in August 2015 was 3.8 percent (Ycharts, 2015), compared to a 3.5 percent unemployment rate statewide (State of Hawaii Department of Labor and Industrial Relations, 2015) and 6.1 percent nationwide (U.S. Bureau of Labor Statistics, 2015).

3.13.2 Potential Impacts and Mitigation Measures

Economic Impacts

The proposed project is anticipated to have several types of economic impacts. One type is construction-related employment and income. With a preliminary estimated cost of \$23 million, the project is expected to support a number of construction workers for the duration of the project (approximately 24 months). Unless the economy expands significantly and existing firms are working at full capacity, this project is more likely to help sustain existing employment and income levels than to create new jobs. However, because project funds are coming from (Federal) sources outside the region, wages paid to workers on this project (direct income), payments to suppliers (indirect income), and their subsequent expenditures (induced income) would have positive cumulative impact as monies circulate through the local economy.

Fiscal Impacts

Public funds are needed for long-term operations and maintenance of all bridge structures. In the case of the Hanapepe River Bridge, the existing structure has exceeded its normal lifespan. Replacing the structure would allow HDOT to extend the timeframe for major bridge repair. Design improvements and scour protection would reduce costs for inspections (which currently occur more frequently than the normal 2-year cycle) and intensified maintenance actions. Replacing the deficient bridge would therefore result in long-term fiscal benefits to HDOT.

3.14 Visual and Aesthetic Resources

3.14.1 Existing Conditions

The project site is located in the heart of Hanapepe town on Kauai's southwest coastal plain. The Hanapepe River is a perennial water way which conveys substantial flows beneath the highway bridge. The project area is relatively flat and moderately developed. A County sewer pump station is located on the *mauka* side of the highway near the western approach, while on the *makai* side of the highway near the eastern approach is a gas station and auto repair shop. Nearby land uses include residences, small retail businesses and eating establishments, a fire station and a church. Beyond this developed zone in the immediate vicinity of the project area, the landscape is used primarily for agricultural activity, which results in a more rural visual character.

The project area is mostly flat, though some elevated topography exists in the vicinity of the proposed replacement bridge. Because of the low profile of the existing bridge and the predominantly flat surrounding topography, the bridge is not a prominent visual feature of the landscape, and is viewed primarily by highway users as they approach the bridge and by people looking *makai* from the County bridge or other upstream vantage points.

3.14.2 Potential Impacts and Mitigation Measures

Although the proposed project would result in visual changes to the project site, as shown in Figure 3-5, features of the new bridge would be substantially similar in character to the existing structures. From the vantage point shown in the simulation, the new bridge girders would be the most noticeable change compared to existing conditions. The proposed shallow arch girders is deferential to the existing bridge design. This feature and other visual changes would be considered minimal and would not affect the overall quality of views toward the bridge.

In general, the project would not result in a substantial change to the existing landscape or result in a noticeable change to the project viewshed, because the changes to the project area would be relatively minimal in scale and scope.

The project could result in temporary visual impacts during the construction period as a result of dust, the presence of heavy equipment at the project site, and the presence of additional vehicles traveling throughout construction areas. However, these impacts would be considered less than significant because they would be minimal and temporary.

3.15 Roads and Traffic

3.15.1 Existing Conditions

Kaumualii Highway (State Route 50) is the main transportation corridor for the western side of the island. In the vicinity of Hanapepe River Bridge, at MP 16.6, the highway had an average daily traffic count of 15,700 in 2010. The highway is classified as a Minor Arterial with a posted speed limit of 35 mph.

3.15.2 Potential Impacts and Mitigation Measures

Development in the State Highway Right-of-Way

The proposed project would affect approximately 850 feet of Kaumualii Highway. The replacement bridge would be constructed and operated within the ROW of the existing highway facility. Project improvements would occur in areas impacted by construction of the original structure in 1938 and subsequent highway upgrades and repairs. Permanent easements for riprap and maintenance access would be needed as described in Section 2.3.3, Properties Affected by the Project.

Traffic Impacts

Short-term Construction-related Impacts. Construction is expected to extend over 24 months. A temporary vehicular bypass route — including a temporary bridge — would be constructed to maintain traffic flow during construction (see Figure 2-5). The bypass route would be located adjacent to, and *mauka* of, the existing structure. It would consist of two travel lanes, thereby accommodating travel in both directions. The bypass route would be designed for a travel speed of 15 mph (compared to the normal speed of 35 mph). While motorists would be required to slow down and may experience slightly longer travel times, traffic flow is not expected to be impeded.

Local access would be provided for residences and businesses around the project area. Neighboring residents have mentioned the difficulty of turning onto the highway from adjacent streets, such as Iona Road. Turning movements will be addressed in the traffic management plan that would be developed in consultation with the Kauai Department of Public Works and submitted to HDOT and FHWA for review and approval. The lowered posted speed limit during construction would, in part, facilitate motorist access in all directions.

The temporary bridge would be limited to vehicular traffic given space constraints adjacent to the highway bridge. Bicyclists and pedestrians would be detoured to the County bridge on the *mauka* side, as shown on Figure 2-6. Between Iona Road and Puolo Road, the detour route would be approximately 0.3 mile long, compared to 0.15 mile to go across the highway bridge — a distance almost twice as long. In terms of travel time, a person walking at a relatively leisurely pace of 2 mph would take approximately 9 minutes to travel via the detour route compared to 4.5 minutes via the highway bridge. For pedestrians who need to cross to the *mauka* side of the highway, crosswalks are located at Kona Road (on the eastern side of the bridge) and at Moi Road (on the western side of the bridge).

Traffic Control. A traffic management plan would be developed by the contractor before construction and submitted to HDOT for review and approval. Components of the traffic plan may include public notices and electronic signboards to inform motorists about the work schedule and to aid travel planning. All temporary signs, signals, and pavement markings would conform to standards contained in the FHWA *Manual on Uniform Traffic Control Devices for Streets and Highways* (revised 2009, adopted 2010).

Emergency Services. Kaumualii Highway is a lifeline transportation facility for police, fire, and emergency medical services. The project includes a temporary bypass road that would be designed to carry conventional loads, including fire apparatus, thereby resulting in no adverse impact to emergency services access. The contractor would be required to make provisions for emergency access and would be required to maintain full access during non-working hours. Emergency services, including police, fire, and ambulance services, would be notified before the implementation of any changes in roadway operations.

3.16 Community Facilities and Parks

3.16.1 Existing Conditions

A number of community facilities and parks are located within a 0.5-mile radius of the Hanapepe River Bridge, as shown on Figure 3-6. Facilities on the east side of the river include the Hanapepe Fire Station and Public Library, both of which are located on Kaumualii Highway. Hanapepe Stadium Park, Hanapepe Neighborhood Center, and the Hawaii National Guard Armory are located on the west side of the river. Several churches front Kaumualii Highway in the vicinity of the project.

3.16.2 Potential Impacts and Mitigation Measures

Community facilities are destinations that attract people and generate traffic. As discussed in Section 3.15.2, the temporary bypass road would mitigate traffic impacts during the construction period. Because the bypass alignment would hew closely to the existing bridge, the detour would not obstruct access for community facilities. Construction activity is not expected to adversely affect the operation or public use of community facilities or parks.

3.17 Water and Wastewater

3.17.1 Existing Conditions

The island's potable water system is operated by the Kauai Department of Water. A 12-inch water line is hung on the *makai* side of the bridge.

The island's wastewater system is operated by the Kauai Department of Public Works, Wastewater Management Division. A 12-inch force main is attached to the *mauka* side of the bridge. A series of metal plates form a fascia below the bridge deck which blocks the view of the suspended pipe. A sewage pump station is located *mauka* of the highway and approximately 100 feet from western end of the bridge.

3.17.2 Potential Impacts and Mitigation Measures

The water and wastewater lines would be relocated to the temporary bridge during the construction period. Service would be maintained, but there may be brief interruptions that would be limited to the extent possible. The temporary bypass road on the *mauka* side of the bridge would tie back to the highway before Puolo Road, in the vicinity of the sewage pump station. A retaining wall would be constructed adjacent to the pump station to accommodate the temporary bypass road, but the bypass alignment is not expected to affect the pump station. Overall, temporary impacts would be negligible because of continuity of service during construction. Further coordination with utility owners would occur before and during construction.

3.18 Solid Waste Management

3.18.1 Existing Conditions

The Kauai Department of Public Works, Solid Waste Division, operates the primary refuse collection system. The County is responsible for regulating the disposal of all solid waste with the exception of hazardous materials. Refuse collection crews operate out of three baseyards on Kauai, including one in Hanapepe.

The island has a single landfill located in Kekaha. Because it is located on the far west side of the county, refuse vehicles servicing the island routinely pass over Hanapepe River Bridge to reach the facility. The 34-acre Kekaha Landfill Phase II site opened in 1993 and was allowed by the State to have its height limit increased to 60 feet in 1998. The facility also serves as a drop-off point for segregated recoverable waste (such as cardboard, newspaper, glass, and aluminum cans). The landfill, with the addition of the vertical expansion, is projected to reach capacity in several years. The County has identified a landfill site north of Lihue, *makai* of Maalo Road, and is currently preparing an EIS.

3.18.2 Potential Impacts and Mitigation Measures

Solid-waste impacts are expected to be short term and related to construction activities. Removing the existing structure would generate debris consisting primarily of concrete slabs, asphalt pavement, and metal guardrails, posts, and fastenings. The contractor would be required to dispose of or recycle all materials at approved sites and with proper handling during transport. The contractor would be required to have a waste disposal plan that specifies proper removal and disposal of all debris from the project. Project-related waste material would be a small proportion of the island-wide total, and is not expected to have a significant impact on the County's solid waste facilities.

3.19 Electrical and Telecommunications Systems

3.19.1 Electrical System

Kauai Island Utility Cooperative (KIUC) is the local electrical utility company, which provides electrical power to service customers on the island. Overhead 12 kilovolt (kV) electrical lines were recently rerouted to the County's Hanapepe Bridge crossing. As a result, there are no KIUC electrical lines in the Kaumualii Highway river crossing.

3.19.2 Telecommunications Systems

Three companies own and maintain telecommunication lines in the project area: (1) Hawaiian Telecom provides land-line telecommunications service, (2) Oceanic Time Warner Cable provides wired cable television service to customers island wide, and (3) Sandwich Isles Communications provides telecommunications services to Hawaiian Home Lands communities and properties. Overhead telecommunication lines are located on the *makai* side of the highway and parallel to the proposed project. A telecommunications conduit is also located on the underside of the existing bridge.

3.19.3 Highway Lighting and Power

There are streetlights along Kaumualii Highway through Hanapepe Town. Light poles are located on the *makai* side of the highway at both ends of the bridge, but there are no light poles on the bridge itself. The bridge was originally constructed with light fixtures mounted to the concrete bridge railing. The bridge lighting system is not functional and a number of fixtures are in disrepair.

3.19.4 Potential Impacts and Mitigation Measures

Telecommunication lines would be relocated to the temporary bridge for the duration of the construction period. Service would continue, but may experience temporary and short-term interruptions that would be limited to the extent possible. Further coordination with utility owners would occur before and during construction. Temporary impacts on utilities would be negligible because service would be maintained during construction.

Telecommunication conduits and lines would be replaced as part of permanent construction and there would be no long-term adverse impacts related to these utilities. Highway lighting would remain unchanged and there is no plan to install lights on the replacement bridge itself. Two existing light poles on either side of the bridge would be replaced and may require modest relocation to accommodate the slightly wider footprint of the new bridge.

3.20 Secondary and Cumulative Impacts

Replacing the Hanapepe River Bridge is a self-contained project. It would not change the capacity of the existing highway and is not expected to have secondary impacts such as population change, land development, or effects on public facilities and services. There is a County project to resurface Hanapepe Road and improve the Hanapepe Road Bridge. However, construction of the County project is expected to occur sometime after the Kaumualii Highway Bridge has been replaced, thereby avoiding the potential for cumulative adverse impacts to environmental resources such as water quality and wildlife, and cumulative construction impacts on traffic, noise, and dust. CFLHD is planning to undertake several other bridge replacement projects on Kauai, including structures on Kaumualii Highway in Koloa and on Kuhio Highway in Kapaa and Wainiha. Although the timing of one or more of these projects may overlap with the Hanapepe project, cumulative impacts are not expected because of geographic distances that separate the project areas.

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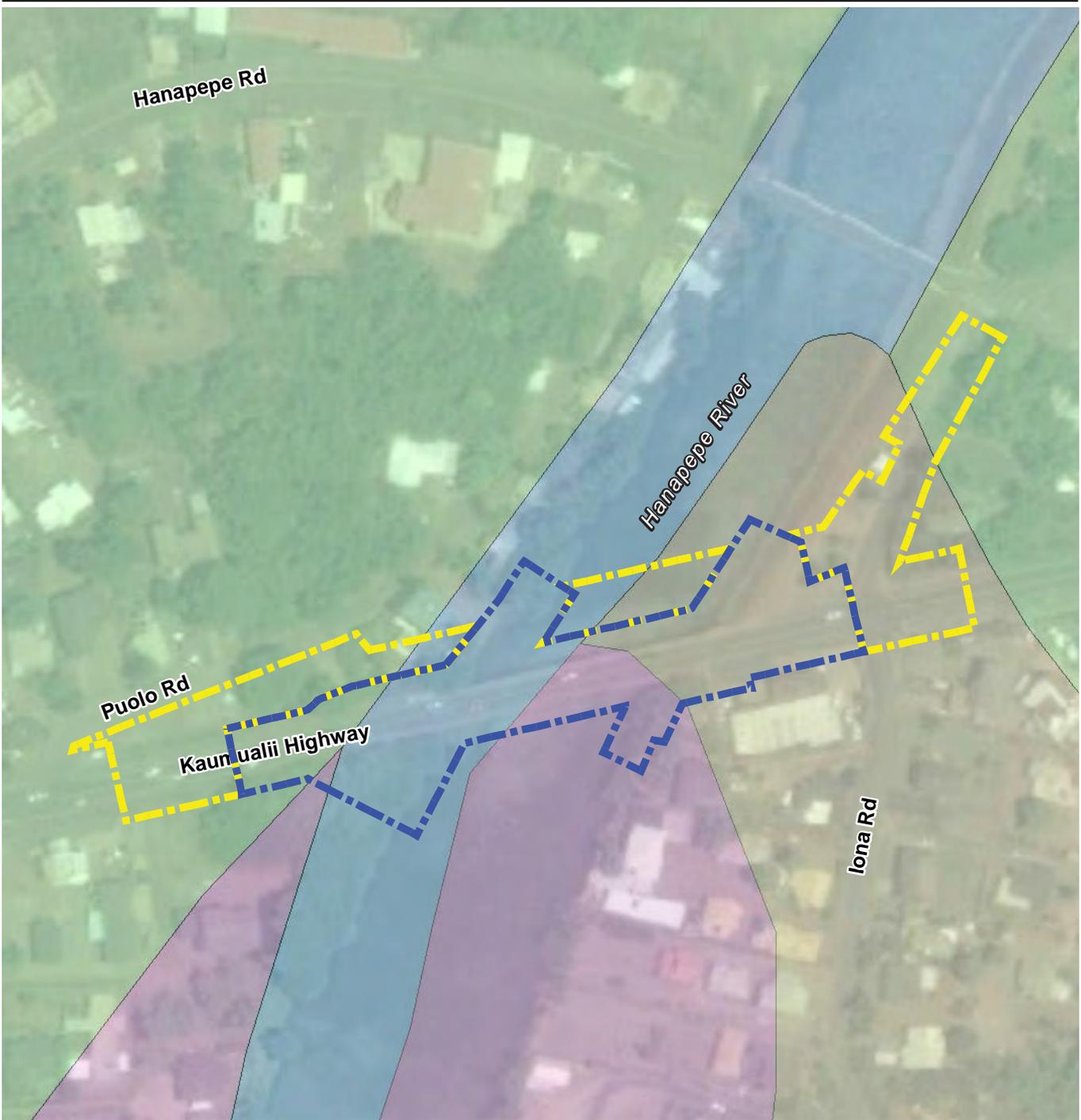
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Data Source: NRCS, Soil Survey Geographic Database (SSURGO), 2015

LEGEND

-  Permanent Impact Area
-  Temporary Impact Area
-  HmA, Hanalei silty clay loam, 0 to 2 percent slopes
-  JkB, Jaucas loamy fine sand, dark variant, 0 to 8 percent slopes
-  PdA, Pakala clay loam, 0 to 2 percent slopes
-  W, Water > 40 acres

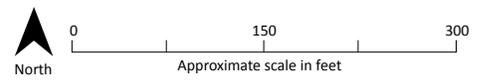
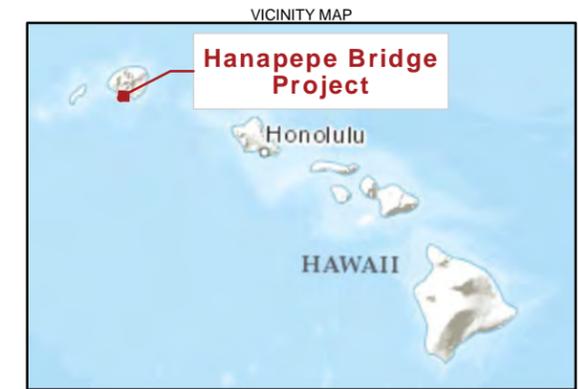
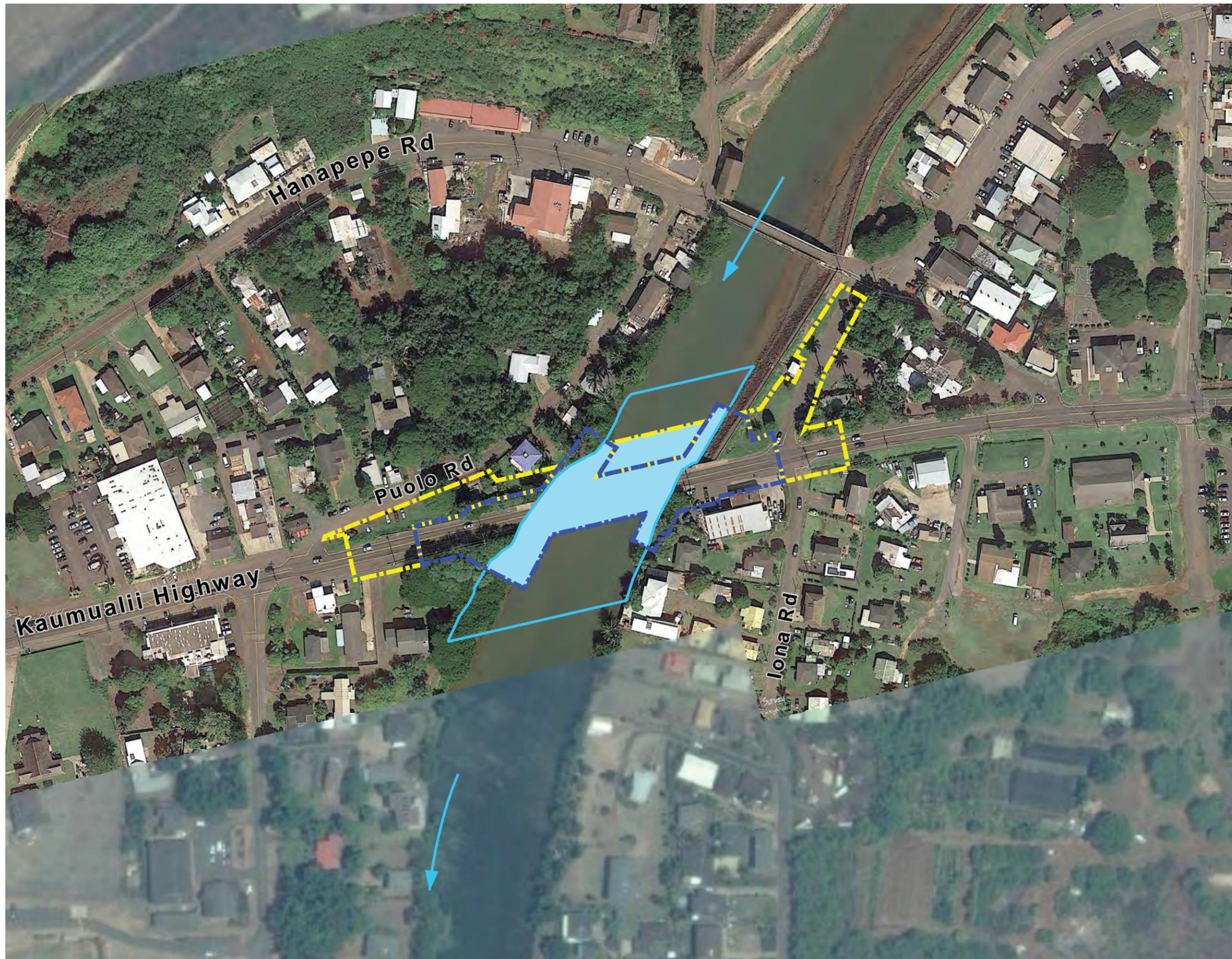


FIGURE 3-1
Soils Map
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



LEGEND

-  Permanent Impact Area
-  Temporary Impact Area
-  Waters of the U.S.
-  Waters of the U.S. within the Project Area

- Notes:
1. High-Res Imagery Source: Google Earth 12/16/2013
 2. Low-Res Imagery Source: Digital Globe 08/26/2011
 3. Imagery base map is not orthorectified; therefore project features may not properly align with the imagery.

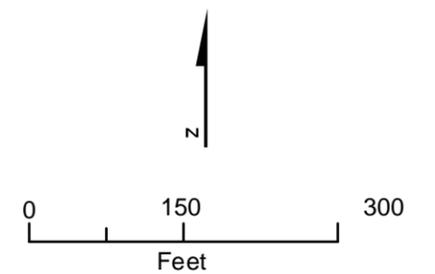
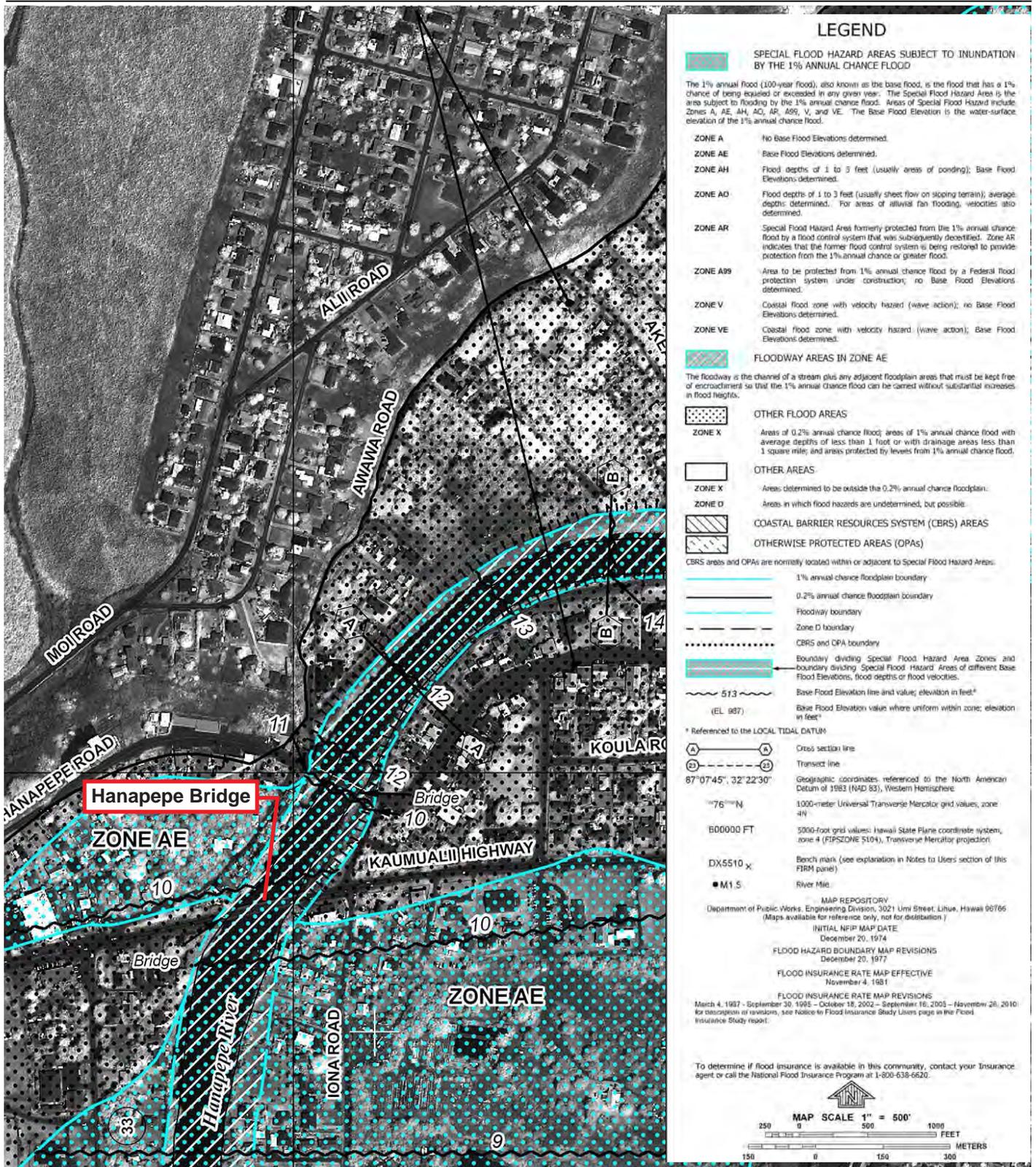
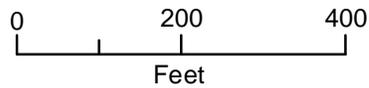
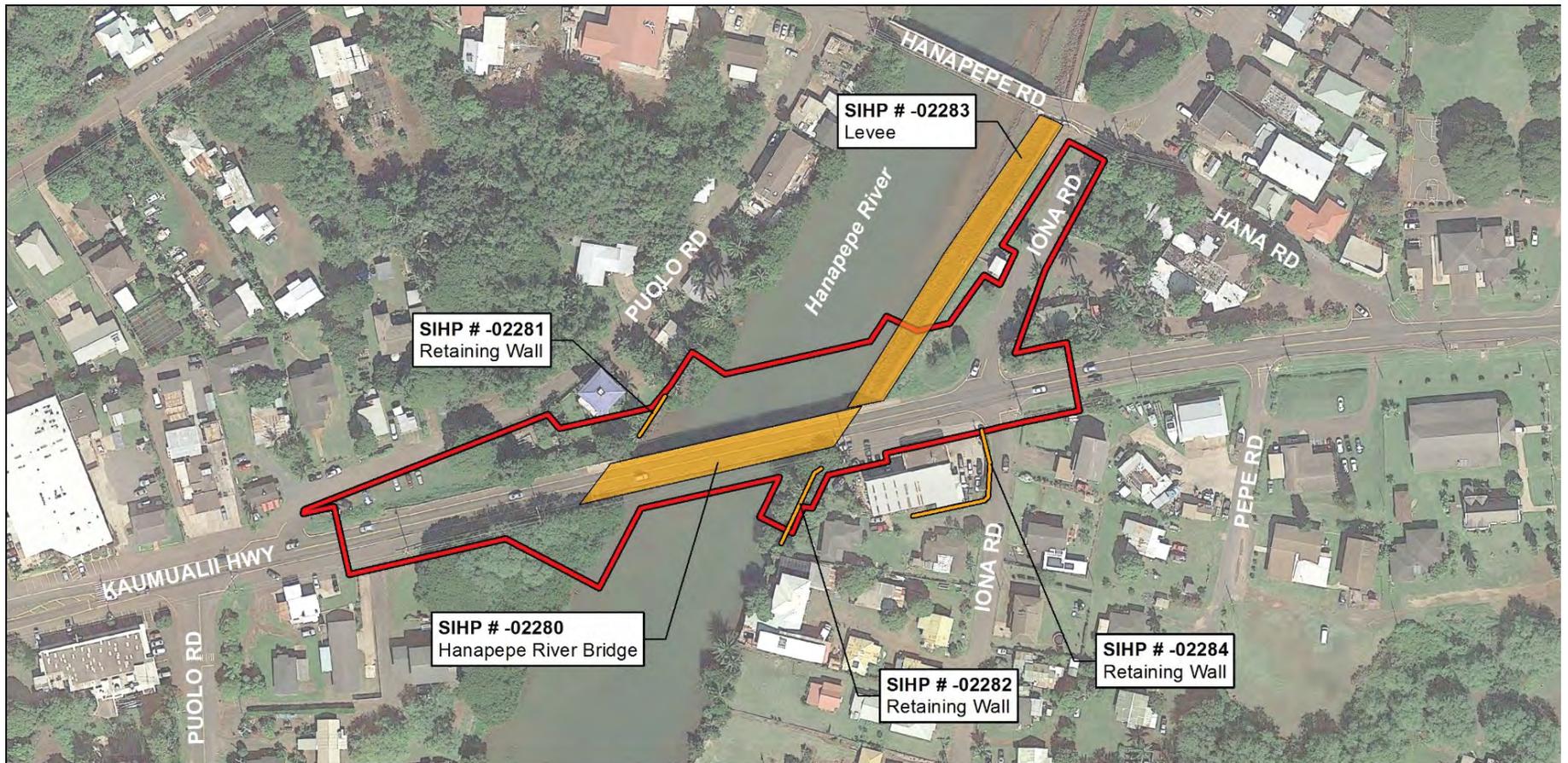


FIGURE 3-2
Waters of the U.S.
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation



Source: Federal Management Agency. Map number 1500020287E. Kauai County, Hawaii. Panel 287 of 500, Revised Nov. 26, 2010

FIGURE 3-3
Flood Insurance Rate Map
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



LEGEND

- Area of Potential Effect
- Cultural Resource

Base Map: Google Earth Imagery (2013) Data Sources: CSH

**FIGURE 3-4
Cultural Resources**
*Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation*



Existing Bridge



Visual Simulation

FIGURE 3-5
Visual Simulation
Hanapepe Bridge Project
Hawaii Bridges Program –
Central Federal Lands Highway Division and
Hawaii Department of Transportation



LEGEND

- Tax Map Key
- Existing Bridge
- Project Area
- Park
- Public Facility

Church



0 495 990 Feet

FIGURE 3-6

Public Parks and Facilities

Hanapepe Bridge Project

Hawaii Bridges Program –

Central Federal Lands Highway Division and

Hawaii Department of Transportation

Relationships to Public Plans and Policies

The plans and policies relating to the proposed project range from broad program guidance to land use controls governing the project site. Construction of the proposed improvements is consistent with the various plans, policies, and regulatory controls, as discussed below.

4.1 Federal

The proposed project would involve the use of Federal funds through FHWA. As a result, the proposed project must comply with various Federal statutory and regulatory requirements.

4.1.1 National Environmental Policy Act of 1970

The proposed project would be partially funded by FHWA. This Federal funding subjects the project to the environmental review requirements of National Environmental Policy Act (NEPA), prescribed under 40 CFR Parts 1500 – 1508 (Council on Environmental Quality [CEQ]). FHWA serves as the lead Federal agency, or Administrator, responsible for the project's compliance with NEPA documentation and processing requirements, as provided in 23 CFR Part 771, Environmental Impact and Related Procedures.

The NEPA determination of impact significance is related to the type of document and process required to comply with NEPA for a proposed project. There are three types of environmental documents under NEPA: (1) Categorical Exclusion (CE), (2) EA, and (3) EIS. A CE is appropriate when there would be no significant impacts on the environment, an EA when the significance of the effects are not clearly established, and an EIS when the action would have a significant impact on the environment.

Significance is defined in the CEQ regulations (40 CFR 1508.27). A "significant impact" is assessed in terms of an impact's context and intensity. Context refers to the environment and the relative abundance of resources in the project limits. Intensity refers to the specific impact, or how much of the resource(s) would be used or affected by the project.

FHWA Regulations for Environmental Impact and Related Procedures (23 CFR 771.117(a)) specify that CEs are actions that meet the definition contained in 40 CFR 1508.4 and act as follows:

- Do not induce significant impacts to planned growth or land use for the area
- Do not require the relocation of significant numbers of people
- Do not have a significant impact on any natural, cultural, recreational, historic, or other resources
- Do not involve significant air, noise, or water quality impacts
- Do not have significant impacts on travel patterns
- Do not otherwise, either individually or cumulatively, have any significant impacts

Specific actions that meet these criteria are listed in 23 CFR 771.117(c). This list includes "bridge rehabilitation, construction or replacement or construction of grade separation to replace existing at-grade railroad crossings" (23 CFR 771.117(c)(28)).

Consistent with their regulations for NEPA compliance, and as further justified by the findings of this EA, FHWA anticipates issuing a CE.

4.1.2 Section 106 of the National Historic Preservation Act of 1966

The NHPA of 1966, as amended (PL 89-665, codified as 16 U.S.C. 470), recognizes the nation's historic heritage and establishes a national policy for the preservation of historic properties as well as the National Register of Historic Places. Section 106 of the NHPA of 1966 (16 U.S.C. 470f) requires that Federal agencies consider the effects of their projects on historic properties. Use of Federal funds sets forth the need for Section 106 consultation. The purpose of the Section 106 consultation process is to evaluate the potential

for effects on existing historic sites, if any, resulting from the project. Findings relating to potential effects of the proposed project on historic properties are discussed in Sections 3.9 and 3.10. Documentation related to the Section 106 consultation process is contained in Appendix G.

The Section 106 review process encompasses a good faith effort in ascertaining the existence and location of historic properties near and within the project site, establishing an APE for the project, identifying whether the proposed project may adversely affect historic properties, and developing a reasonable and acceptable resolution in the monitoring and treatment of any historic properties in agreement with the agency, State Historic Preservation Division (SHPD), and consulting government agencies, community associations, and Native Hawaiian organizations and families.

Meetings were held with SHPD on September 9 and December 10, 2014, to provide an overview of the CFLHD Hawaii Bridge Program and to discuss the general parameters for historic preservation review. The Section 106 consultation process was formally initiated by letters to SHPD and to potential consulting parties dated August 26, 2015. A legal notice requesting public input to the Section 106 process was published in The Garden Island on August 28, 2015. Consultation with SHPD and Native Hawaiian Organizations is ongoing. Information distributed as part of the consultation process is consistent with the analysis presented in this EA.

4.1.3 Section 4(f) of the Department of Transportation Act of 1966

Section 4(f) of the Department of Transportation Act of 1966 (49 U.S.C. 303 and 23 U.S.C. 138) permits the “use” of land from a publicly-owned park, recreational area, or wildlife and waterfowl refuge, or land from a historic site of National, State, or local significance for a transportation project only if (1) there is no prudent and feasible alternative to using that land and (2) the project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use. The purpose of Section 4(f) requirements is to preserve significant parkland recreation areas, refuges, and historic and archaeological sites by limiting the circumstances where such land can be used for transportation projects. Historic sites are protected under Section 4(f) if they are listed in or have been determined eligible for listing in the NRHP.

Use of a Section 4(f) resources is defined in 23 CFR 774.17 as follows:

1. When land is permanently incorporated into a transportation facility; or
2. When there is a temporary occupancy of land that is adverse in terms of the statute’s preservationist purpose as determined by the criteria in 23 CFR 774.13(d); or
3. When there is a constructive use of a Section 4(f) property as determined by the criteria in 23 CFR 774.15

The Historic Resource Inventory Form identified two historic resources within the APE eligible for listing on the NRHP – the Hanapepe River Bridge (SIHP n-2280), and the circa 1966 left-bank flood control levee (SIHP #-2283) (see Appendix E). Based on their NRHP eligibility, both the Hanapepe River Bridge and the left-bank flood control levee subsequently qualify as Section 4(f) historic sites.

Based on the findings, FHWA determined that the replacement of the Hanapepe River Bridge would result in an adverse effect under Section 106. However, FHWA concluded that there would be not be a use of the bridge under Section 4(f)-protected because the *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges* applies to this project. FHWA prepared a Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges statement (FHWA, 1983). FHWA will continue consultation through the Section 106 process to ensure all project criteria are met, and will prepare its own documentation on the Programmatic Section 4(f) applicability before Federal project approval.

Based on the findings provided in the Draft Determination of Effect (Mason Architects, 2016), FHWA determined that the project would not have an adverse effect to the 1966 flood control levee. The existing

bank of the levee and the concrete topping wall will be retained and protected in place during construction. Based on this Section 106 finding of No Adverse Effect, the FHWA anticipates a *de minimis* impact finding for this property.

4.1.4 Uniform Relocation Assistance and Real Property Acquisition Act of 1970

The Uniform Relocation Assistance and Real Property Acquisition Act of 1970 (42 U.S.C. 4601 et seq. and 49 CFR 24), as amended by the Uniform Relocation Act Amendments of 1987 is commonly referred to as the “Uniform Act”. The Uniform Act provides important protection and assistance for people affected by Federally funded projects. The law was enacted by Congress to ensure that people whose real property is acquired, or who move as a result of projects receiving Federal funds, are treated equitably and receive assistance in moving from the property they occupy.

This project involves replacing an existing structure within the existing HDOT ROW and would not require additional ROW through fee acquisition of land, structures, or residences, or the displacement of persons or businesses. As described in Section 2.3.3, approximately 0.49 acres of land would be needed for permanent access and/or maintenance easements and approximately 0.64 acres of land would be needed for temporary easements to accommodate bridge construction and paving improvements. These easements would be coordinated through HDOT. All applicable and appropriate measures would be followed in acquiring property interests consistent with the requirements of the Uniform Act.

4.1.5 Endangered Species Act of 1973

The Endangered Species Act (ESA) of 1973 (16 U.S.C. 1531-1544) establishes a process for identifying and listing threatened and endangered species. It requires Federal agencies to carry out programs for the conservation of federally listed endangered and threatened plants and wildlife and designated critical habitats for such species, and prohibits actions by Federal agencies that would likely jeopardize the continued existence of those species or result in the destruction or adverse modification of designated critical habitat. Section 7 of the ESA requires consultation with Federal wildlife management agencies such as the U.S. Fish and Wildlife Service (USFWS) and National Marine Fisheries Service (NMFS).

To initiate consultation with agencies with authority over protected species, FHWA-CFLHD sent a letter requesting a list of threatened and endangered species, candidate species, plants and animals of concern, and critical habitats in the vicinity of the proposed project. USFWS responded by letter dated December 22, 2014, providing location-specific biological information and recommended standard BMPs. Discussions continued through meetings held with the USFWS on January 12, 2015, and with USFWS, USEPA, NMFS, and DLNR Division of Aquatic Resources on March 15, 2015.

A BA was prepared for the Hanapepe Bridge project (see Appendix C) and will be submitted to USFWS and NMFS for review as part of the informal Section 7 consultation process. The BA includes effects determinations and conservation measures consistent with the analysis in this EA.

4.1.6 Migratory Bird Treaty Act

The MBTA of 1918, as amended (16 U.S.C. 760), protects migratory wild birds found in the U.S. The MBTA makes it unlawful to pursue, hunt, take, capture, possess, sell, purchase, barter, import, export, or transport any migratory bird or any part, nest, or egg of any such bird, unless authorized under a permit issued by the Secretary of the U.S. Department of the Interior.

As described in Section 3.8.1, two bird species federally protected under the MBTA were observed during the biological survey. Construction activities may temporarily displace these species, but long-term impacts are not expected. These birds (likely limited to a few individuals) are expected to find suitable foraging habitat at nearby areas. The temporary displacement of these individuals is not expected to affect the

individual's survival or the overall species' populations. With the implementation of mitigation measures described in Section 3.8.5, it is expected that impacts to MBTA-protected species would be avoided.

4.1.7 Fish and Wildlife Coordination Act

The Fish and Wildlife Coordination Act (FWCA) (16 U.S.C. 661-667e) calls for conservation of wildlife resources related to projects where the "waters of any stream or other body of water" are impounded, diverted, or modified by any agency under a Federal permit or license. The law requires consultation with USFWS and State fish and wildlife agencies for the purpose of "preventing loss of and damage to wildlife resources."

Consultation related to the FWCA is occurring as part of ongoing coordination with resource agencies.

4.1.8 Magnuson-Stevens Fishery Conservation and Management Act

The Magnuson-Stevens Fishery Conservation and Management Act (16 U.S.C. 1855(b)), as amended, establishes provisions relative to Essential Fish Habitat (EFH) to identify and protect important habitats for federally managed marine and anadromous fish species. EFH is defined as those waters and substrate necessary to fish for spawning, breeding, feeding, and/or growth to maturity. "Waters" include aquatic areas and their associated physical, chemical, and biological properties that are used by fish and may include areas historically used by fish where appropriate. "Substrate" includes sediment, hard bottom, and structures underlying the waters and associated biological communities. Federal agencies which fund, permit, or undertake activities that may adversely affect EFH (including actions outside EFH, such as upstream/upslope activities) are required to consult with NMFS regarding the potential effects of their actions on EFH, and respond to NMFS recommendations. An adverse effect is defined as any impact that reduces quality and/or quantity of EFH, including direct or indirect physical, chemical, or biological alterations of the waters or substrate and loss of, or injury to, species and their habitat, and other ecosystem components.

Four types of EFH occur in the project area: bottomfish and seamount groundfish, pelagic fishery, crustaceans, and coral reef ecosystems. The extent of impacts associated with the proposed project with the potential to affect EFH are limited to the transport of sediment or pollutants via live water. The Hanapepe River in the project area is a low gradient reach that exhibits high levels of turbidity and is listed as a 303(d) impaired waterbody for turbidity under existing conditions. It is a perennial waterway that has been highly modified for flood control (see Section 4.1, Affected Environment in Appendix C). BMPs and other methods (described in Sections 3.3.5, 3.6.2, and 3.8.6.7) would reduce the extent to which sediment disturbed as a result of construction would be transferred to live water. As a result, water quality impacts would be minimized such that they would not be expected to adversely affect downstream waters and construction-related turbidity would dissipate quickly. An overview of the proposed project relative to EFH was the subject of meetings with NMFS on December 8 and 15, 2015. Consultation with NMFS is ongoing.

4.1.9 Clean Water Act of 1972

The Federal Water Pollution Control Act (FWPCA) (33 U.S.C. §§1251 et seq.) is the Federal statute regulating the discharge of water pollution. Congress revised the FWPCA into the CWA in 1972. The goals of the CWA include: (1) "the discharge of pollution into the navigable waters be eliminated by 1985," (2) "the discharge of toxic pollutants in toxic amounts be prohibited," and (3) an "interim goal of water quality which provides for the protection and propagation of fish, shellfish, and wildlife and... recreation in and on the water... by July 1, 1983" (CWA §101a, 33 U.S.C. §1251a).

Section 404 of the CWA regulates discharge of dredge and fill material in the Waters of the U.S., including wetlands, and requires a Department of the Army permit from USACE. Section 401 of the CWA directs states to establish water quality certification (WQC) programs. In Hawaii, the Section 401 WQC is administered by HDOH, Clean Water Branch. The project would result in a discharge to the Hanapepe River, which is considered a Waters of the U.S.; as such, the project will require a Section 404 Department of the Army Permit and Section 401 WQC.

Section 402 of the CWA requires an NPDES permit for point source discharges, including stormwater discharges associated with construction activities. The permit is required for construction activities that disturb 1 acre or more and discharge stormwater from the project site to Waters of the U.S. NPDES permits are issued by HDOH, Clean Water Branch. The project will require an NPDES permit.

FHWA-CFLHD will coordinate with USACE and HDOH regarding permitting under CWA.

4.1.10 Rivers and Harbors Act of 1899

Federal protection of navigable and tidally influenced waterways is provided under the Rivers and Harbors Act of 1899.

Section 9 of the Act is for the purpose of preventing interference with navigability. It requires that any agency planning to construct or modify a bridge apply for a Coast Guard bridge permit. By correspondence dated December 18, 2015, from Lt. Rysa Miller, the U.S. Coast Guard District 14, Waterways Management Office determined that no action or permit is required from the U.S. Coast Guard.

Section 10 of the Act requires authorization from USACE for the construction of any structure in or over any navigable water of the United States. The reach of the Hanapepe River within the project area is tidally influenced and may be considered navigable, such that Section 10 authorization is expected to be required.

The Rivers and Harbors Act also regulates alteration or use of Federal public works projects in navigable waters. Section 14 of the Rivers and Harbors Act (as codified in 33 U.S.C. 408) provides the Secretary of the Army with the authority to grant permission for temporary or permanent alteration of any sea wall, bulkhead, jetty, dike, levee, wharf, pier, or other work built by the United States. Specifically, the Secretary of the Army may, on the recommendation of the Chief of Engineers, grant permission for the alteration or permanent occupation of such public works as long as it is not contrary to the public interest and will not impair the usefulness of the work. As described in Section 2.1.1, this stretch of the Hanapepe River includes flood control improvements completed by USACE, including a floodwall atop a levee and an I-wall on the east bank, and a levee on the west bank. Authorization for alteration of these features will be coordinated with USACE.

4.1.11 Clean Air Act of 1970

The CAA and amendments (42 U.S.C. §7401 et seq.) is the comprehensive Federal law that regulates air emissions from area, stationary, and mobile sources. This law authorizes USEPA to establish National Ambient Air Quality Standards to protect public health and the environment.

The purpose of this project is to replace the Hanapepe River Bridge. It has been determined that the project would generate minimal air quality impacts for CAA criteria pollutants (as discussed in Section 3.2) and would not be linked with any special MSAT concerns.

4.1.12 Floodplain Management, Executive Orders 11988 and 12148

Executive Order 11988, Floodplain Management, dated May 24, 1977, requires Federal agencies to take action to reduce the risk of flood loss, restore the natural and beneficial values of floodplains, and minimize the impacts of floods on human safety, health, and welfare. The order was amended by Executive Order 12148 in July 20, 1979. The main feature of the amendment added that agencies with responsibilities for Federal real estate properties and facilities will, at a minimum, require the construction of Federal structures and facilities to be in accordance with the criteria of the National Flood Insurance Program.

The Hanapepe River Bridge is located within a Zone AE FEMA-regulated floodway. As described in Section 3.4.4, the proposed bridge would meet or exceed the flow capacity of the existing bridge and there would be no rise in the 100-year water surface elevation. Compliance with these executive orders would be documented by FHWA as part of the NEPA CE.

4.1.13 Protection of Wetlands, Executive Order 11990

Executive Order 11990, Protection of Wetlands, dated 1977, requires Federal agencies to avoid, preserve, or mitigate effects of new construction projects on lands that have been designated wetlands.

A delineation of Waters of the U.S. (including wetlands) was conducted and no wetlands were identified within the survey area.

4.1.14 Invasive Species, Executive Order 13112

Executive Order 13112 (64 Federal Register 6183), issued in 1999, requires Federal agencies to implement policies to minimize the spread of invasive species. Federal agencies cannot authorize, fund, or carry out action(s) likely to cause or promote the introduction of the spread of invasive species unless it has been determined (1) that the benefits of the action outweigh the potential harm caused by invasive species, and (2) that all feasible and prudent measures to minimize risk of harm will be taken.

As described in Section 3.7, vegetation disturbed during construction will be replaced as part of the project and the spread of noxious weeds will be managed through the implementation of BMPs as part of the project.

4.1.15 Coastal Zone Management Act (16 U.S.C. §1456(C)(1))

In 1972, the U.S. Congress enacted the Federal Coastal Zone Management Act to ensure that each Federal agency undertaking an activity within or outside the coastal zone that affects any land or water use or natural resource of the coastal zone will be carried out in a manner that is consistent, to the maximum extent practicable, with the enforceable policies of approved State management programs. Each Federal agency carrying out an activity subject to the Act will provide a consistency determination to the relevant State agency designated under Section 1455(d)(6) of this title at the earliest practicable time.

The State administers the enforcement of this Act under the Hawaii CZM Program (HRS Chapter 205A), and therefore, the discussion of the project's consistency with CZM objectives is discussed in Section 4.2.4.

4.1.16 Environmental Justice, Executive Order 12898

Executive Order 12898 (Federal Actions to Address Environmental Justice to Minority and Low-income Populations) was signed on February 11, 1994. The intent of Executive Order 12898 is to avoid disproportionately high adverse human health or environmental effects of projects on minority and low-income populations. Executive Order 12898 also requires Federal agencies to ensure that minority and low-income communities have adequate access to public information related to health and the environment.

Guidance from CEQ indicates minority populations exist where either (1) the minority population of the affected area exceeds 50 percent, or (2) the minority population percentage of the affected area is meaningfully greater than the minority population percentage of the general population. Minorities are defined as members of the following population groups: American Indian or Alaskan Native; Asian or Pacific Islander; Black, not of Hispanic origin; or Hispanic. U.S. Census Bureau poverty status data are used to identify low-income populations. Poverty status is assigned to individuals and families whose income is below the poverty threshold appropriate for that person's family size and composition, as reported in the U.S. Census Bureau, 2010 Census of Population and Housing.

As discussed in Section 3.12, construction and operation of the proposed replacement bridge would not result in adverse effects on minority and low-income populations.

4.1.17 Title VI of the Civil Rights Act of 1964

Title VI of the Civil Rights Act of 1964 (42 U.S.C. 2000d and 49 CFR 21) establishes that no person will, on the grounds of race, color, or national origin be excluded from participation in, be denied the benefit of, or subjected to discrimination under any program or activity receiving Federal financial assistance.

The project is complying with Title VI through coordination and outreach to Native Hawaiian communities under Section 106, HRS 343, and Act 50 on cultural practices.

4.2 State of Hawaii

4.2.1 Hawaii State Plan

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

The proposed project supports and is consistent with the following State Plan objectives:

Facility Systems – Transportation

(a)(1) An integrated multi-modal transportation system that services statewide needs and promotes the efficient, economical, safe, and convenient movement of people and goods.

(a)(2) A statewide transportation system that is consistent with and will accommodate planned growth objectives throughout the State.

(b)(2) Coordinate state, county, federal, and private transportation activities and programs toward the achievement of statewide objectives.

(b)(3) Encourage a reasonable distribution of financial responsibilities for transportation among participating governmental and private parties.

(b)(6) Encourage transportation systems that serve to accommodate present and future development needs of communities.

(b)(10) Encourage the design and the development of transportation systems sensitive to the needs of affected communities and the quality of Hawaii's natural environment.

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)(1) Accommodate the needs of Hawaii's people through coordination of facility systems and capital improvement priorities in consonance with state and county plans.

Discussion: As the facility owner, it is HDOT's mission to provide a safe, efficient, and accessible transportation system for the public. HDOT recognizes the need to provide for the replacement of the existing bridge. The replacement bridge will be designed using current AASHTO guidelines that have been adopted by HDOT for planning and engineering for highway projects in Hawaii.

4.2.2 State Functional Plans

The Hawaii State Plan directs appropriate State agencies to prepare functional plans for their respective program areas. There are twelve State Functional Plans that serve as the primary implementing vehicle for the goals, objectives, and policies of the State Plan. Of these, the State Transportation Functional Plan is most applicable to the proposed project.

State Transportation Functional Plan

The 1991 State Transportation Functional Plan identified the four most critical issues of transportation: congestion, economic development, funding, and education. Objectives, policies, and implementing actions were identified for each issue. The following objectives and policies apply to the project:

Objective I.A. Expansion of the transportation system.

Policy I.A.1. Increase transportation capacity and modernize transportation infrastructure in accordance with existing master plans and laws requiring accessibility for people with disabilities.

Policy I.A.2. Improve regional mobility in areas of the State experiencing rapid urban growth and road congestion.

Discussion: As discussed under the Hawaii State Plan, replacing deficient bridges is integral to HDOT’s mission of providing a safe, efficient, and accessible transportation system for the public. The replacement bridge would be designed using current design standards adopted by HDOT for planning and engineering highway projects in Hawaii.

4.2.3 State Land Use Law

The State Land Use Commission, pursuant to HRS Chapters 205 and 205A and HAR Chapter 15-15, is empowered to classify all lands in the State into one of four land use districts: Urban, Rural, Agricultural, and Conservation. The lands within and surrounding the project area are classified in the Urban District. Roadways are a permitted use in the Urban District. No change in land use classification would be needed for the proposed project.

4.2.4 Coastal Zone Management Program and Federal Consistency Determination

In 1977, Hawaii enacted HRS Chapter 205A, Hawaii CZM Program, to carry out the State’s CZM policies and regulations under the Federal CZM Act (as discussed in Section 4.1.14). The CZM area encompasses the entire State, including all marine waters seaward, to the extent of the State’s police power and management authority, including the 12-mile U.S. territorial sea and all archipelagic waters. As a result, the project is within the CZM area and is subject to consistency with the objectives and policies of the Hawaii CZM Program. The CZM Federal Consistency Certification is reviewed by the State Office of Planning.

The Hawaii CZM Program focuses on ten policy objectives:

- **Recreational Resources.** To provide coastal recreational opportunities accessible to the public and protect coastal resources uniquely suited for recreational activities that cannot be provided elsewhere.

Discussion: The project area does not contain any designated coastal recreation resources nor would it affect access to coastal recreation opportunities.

- **Historic Resources.** To protect, preserve, and where desirable, restore those natural and manmade historic and prehistoric resources in the CZM area that are significant in Hawaiian and American history and culture.

Discussion: Studies focusing on archaeology, historic architecture, and cultural perspectives were conducted for this project. Two architectural resources identified within the Area of Potential Effect are eligible for listing on the National Register of Historic Places and Hawaii State Register of Historic Places: the Hanapepe River Bridge and flood control levee. To mitigate removal of the historic Hanapepe River Bridge, the proposed replacement structure is a three-span bridge with span lengths and arches similar to the existing bridge. New concrete railings would have similar style openings to reflect the aesthetics and historic character of the existing railing. Impacts on the historic levee would be mitigated by requiring the temporary bypass bridge to be constructed above the levee wall. Documentation of eligible historic properties would be completed before removal, as required by SHPD.

- **Scenic and Open Space Resources.** To protect, preserve, and where desirable, restore or improve the quality of coastal scenic and open space resources.

Discussion: The project would be developed to ensure visual compatibility with the surrounding environment. The project is not located along the shoreline, and the replacement bridge would not

negatively impact coastal scenic resources, nor is it anticipated to obstruct views of the landscape or open space resources.

- Coastal Ecosystems. To protect valuable coastal ecosystems, including reefs, from disruption and to minimize adverse impacts on all coastal ecosystems.

Discussion: Because of its inland location and the implementation of mitigation measures and BMPs during construction, the project would not affect coastal ecosystems.

- Economic Uses. To provide public or private facilities and improvements important to the State's economy in suitable locations, and ensure that coastal dependent development such as harbors and ports, energy facilities, and visitor facilities are located, designed, and constructed to minimize adverse impacts in the coastal zone area.

Discussion: The project is not a coastal dependent development.

- Coastal Hazards. To reduce hazard to life and property from tsunami, storm waves, stream flooding, erosion, subsidence, and pollution.

Discussion: The project is located in a tsunami evacuation zone and floodplain. The replacement structure will be designed to meet current engineering (AASHTO) standards, and applicable environmental regulations.

- Managing Development. To improve the development review process, communication, and public participation in the management of coastal resources and hazards.

Discussion: A general public announcement was made regarding the CFLHD Hawaii Bridge Program, which covers a number of State highway bridges on three islands. There would be opportunity for the public to review and comment on the project through the HRS Chapter 343 EA process.

- Public Participation. To stimulate public awareness, education, and participation in coastal management; and maintain a public advisory body to identify coastal management problems and provide policy advice and assistance to the CZM program.

Discussion: The project does not contain a public participation component for programmatic coastal management issues. Project-specific input would be elicited through the HRS Chapter 343 EA process.

- Beach Protection. To protect beaches for public use and recreation, and locate new structures inland from the shoreline setback to conserve open space and to minimize loss of improvements because of erosion.

Discussion: The project is located inland and would not affect Kauai beaches.

- Marine Resources. To implement the State's ocean resources management plan.

Discussion: Although the project is not expected to affect marine resources directly, BMPs would be implemented to prevent degradation of the aquatic environment, including the quality of State waters.

Other key areas of the CZM program include (1) a permit system to control development within a Special Management Area (SMA) managed by each County and the Office of Planning (see Section 4.3.3) and (2) a Shoreline Setback Area that serves as a buffer against coastal hazards and erosion and protects view-planes and marine and coastal resources. Finally, a Federal Consistency provision requires that Federal activities, permits, and financial assistance be consistent with the Hawaii CZM program.

The proposed project is not located within the County of Kauai SMA. The proposed project does not involve the placement, construction, or removal of materials near the coastline, and does not have the potential to affect coastal resources. The proposed project is consistent with the CZM objectives that are relevant to preserving the existing highway infrastructure. FHWA will submit a Federal Consistency determination to the Office of Planning for its concurrence.

4.2.5 Act 50, Cultural Practices

Hawaii Act 50 (2000) sought to “promote and protect cultural beliefs, practices, and resources of Native Hawaiians and other ethnic groups” and requires the proposing agency/applicant under HRS Chapter 343 to consider cultural practices in a cultural impact assessment. A cultural impact assessment is being completed for the project in compliance with this requirement, as discussed in Section 3.11.

4.2.6 HRS Chapter 6E

HRS Chapter 6E and HAR 13-275 through 284 delineate the State’s historic preservation review process. §6E-8 requires that the SHPD be given an opportunity to review the effect that a State or County project may have on historic properties. The proposed project may not commence until the SHPD has given written concurrence. Consultation pursuant to HRS 6E is occurring in tandem with Section 106 (see Section 4.1.2). Documentation related to the HRS Chapter 6E consultation process is included in Appendix G.

4.3 County of Kauai

4.3.1 Kauai General Plan

The Kauai General Plan is a policy document for the long-range comprehensive development of the County of Kauai and also provides the direction for future growth through 2020. The current General Plan was adopted in November 2000.

Chapter 7 of the General Plan relates to Public Facilities and Services. Relevant to this project is the following policy:

7.1.5(a) Use General Plan policies concerning rural character, preservation of historic and scenic resources, and scenic roadway corridors as part of the criteria for long-range highway planning and design. The goal of efficient movement of through traffic should be weighted against community goals and policies relating to community character, livability, and natural beauty.

Discussion: The project would be consistent with this policy, as it would involve replacing the Hanapepe River Bridge to maintain Kaumualii Highway as a safe and functional component of the regional transportation system. The replacement bridge would meet current standards for bridge engineering and functionality, and would not diminish community character, livability, or natural resources.

4.3.2 Zoning

County zoning provides the most detailed set of regulations affecting land development before actual construction. As shown on Figure 4-1, the project site is located primarily in the Open District, which was established to create and maintain an adequate and functional amount of predominantly open land to provide for the recreational and aesthetic needs of the community and to provide for the effective functioning of land, air, water, plant, and animal systems or communities. In the project vicinity, the Open District encompasses such natural and aesthetic features as the river corridor and adjacent open space areas. The proposed project is consistent with the current zoning and would not require any zoning change.

4.3.3 Special Management Area

The CZM objectives and policies (HRS Section 205A-2) were developed to preserve, protect and, where possible, restore the natural resources of Hawaii’s coastal zone. Any development within the SMA boundary requires a SMA Use permit that is administered by the County. The permitting process provides a heightened level of public scrutiny to ensure consistency with SMA objectives.

The proposed project is not located within the County’s SMA (see Figure 4-2).

4.4 Transportation Plans

4.4.1 Statewide Federal-aid Highways 2035 Transportation Plan

The 2035 Transportation Plan was developed as the State’s first long-range multimodal transportation for Federal-aid highways. The plan is intended to guide transportation decisions by identifying goals and solutions within a context of limited resources. It addresses future land transportation needs for motorists, freight, transit, bicyclists, and pedestrians based on land use and socioeconomic projections through 2035.

The long-range plan was developed with participation from a wide spectrum of community members and stakeholders. A series of meetings were held to develop and refine the goal statements. Specifically relevant to this project are the goals provided in Table 4-1, which focus on prudent and timely investments in the transportation (highway) system to maintain functionality and longevity.

TABLE 4-1
Statewide Land Transportation Goals and Objectives

Goals	Objectives	Federal Planning Factor
3.1 Manage transportation assets and optimize investments	Plan and implement maintenance, resurfacing, rehabilitation, and reconstruction to optimize existing transportation system improvements and spending	Aligns to Moving Ahead for Progress in the 21st Century Act (MAP-21) Performance Goal: Infrastructure Condition—maintain highway infrastructure assets in state of good repair
3.2 Maintain safe, efficient, complete transportation system for the long term	Plan and implement existing system improvements to effectively sustain the overall transportation system’s safe, efficient, and complete operations	MAP-21, signed into law on July 6, 2012 (P.L. 112-141), is the current Federal authorization for surface transportation, whose full title is Moving Ahead for Progress in the 21 st Century Act

4.4.2 Federal-aid Highways 2035 Transportation Plan for the District of Kauai

Each district in the state has a Regional Federal-aid Highways 2035 Transportation Plan or regional long-range land transportation plan. The purpose of this plan is to provide a basis for making multimodal land transportation decisions over a 20-year time frame. As a regional plan, it serves as an interface between overarching state transportation issues and island-specific needs and funding priorities.

The *Federal-Aid Highways 2035 Transportation Plan for the District of Kauai* (HDOT, 2014) includes a list of potential solutions that were evaluated based on ability to address local needs and deficiencies. The list of recommendations includes improvements to Kaumualii Highway, including the addition of two travel lanes from Hanapepe Road to Eleele Road. While this project would not overlap with the project area, the recommendation points to the importance of ongoing investment in Kaumualii Highway.

4.4.3 Bike Plan Hawaii

Bike Plan Hawaii is the statewide bicycle master plan, which serves as a blueprint for accommodating and promoting bicycle use. The latest update was completed in September 2003. The plan contains objectives and implementing actions, an inventory of existing facilities, and proposals to expand the network of bicycle facilities.

The bike plan includes a proposal for a future signed shared route on Kaumualii Highway between Kekaha and Hanapepe (Map No. 53b) (HDOT, 2003). The proposed project is consistent with bicycle planning because the replacement structure includes 8-foot-wide shoulders that would accommodate possible development of a future signed bike route.

4.4.4 Statewide Pedestrian Master Plan

The *Statewide Pedestrian Master Plan*, completed in May 2013, provides a comprehensive strategy for improving pedestrian safety, mobility, and accessibility along State highways. The plan identifies and prioritizes pedestrian infrastructure projects throughout the State.

The pedestrian plan does not address foot traffic in the vicinity of Hanapepe Bridge (HDOT, 2013). Nevertheless, the proposed design would replace the 5-foot raised sidewalk on both sides of the bridge for the safety and comfort of people who cross on foot.

4.5 References

County of Kauai. 2000. *The Kaua'i General Plan*.

Federal Highway Administration (FHWA). 1983. *Programmatic Section 4(f) Evaluation and Approval for FHWA Projects that Necessitate the Use of Historic Bridges*.

State of Hawaii Department of Transportation (HDOT). 1991. *Transportation; State Functional Plan*.

State of Hawaii Department of Transportation (HDOT). 2003. *Bike Plan Hawaii*.

State of Hawaii Department of Transportation (HDOT). 2013. *Statewide Pedestrian Master Plan*.

State of Hawaii Department of Transportation (HDOT). 2014. *Federal-Aid Highways 2035 Transportation Plan for the District of Kauai*. June.

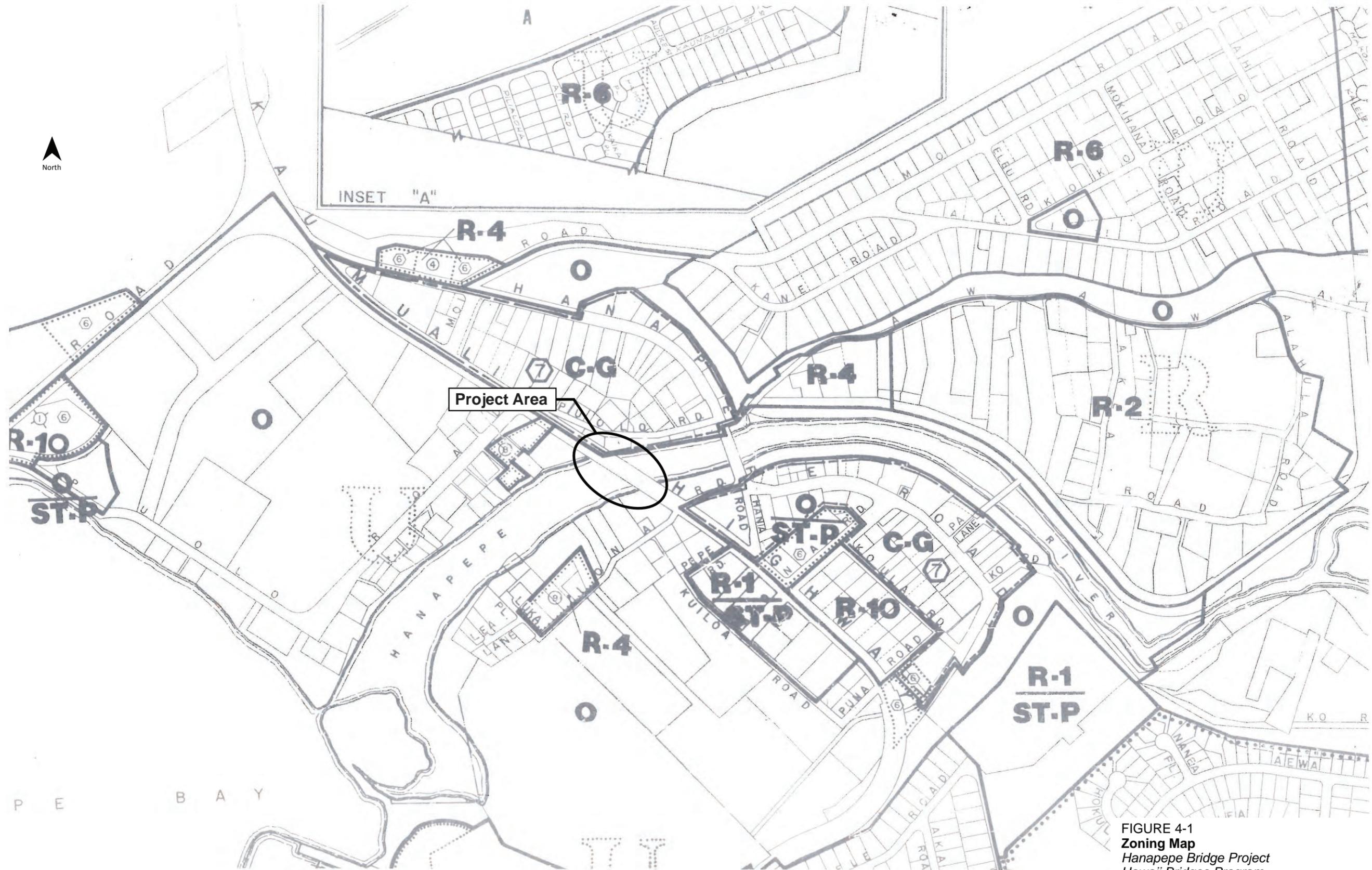
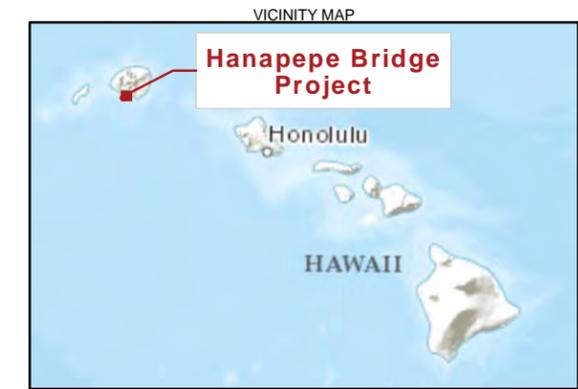
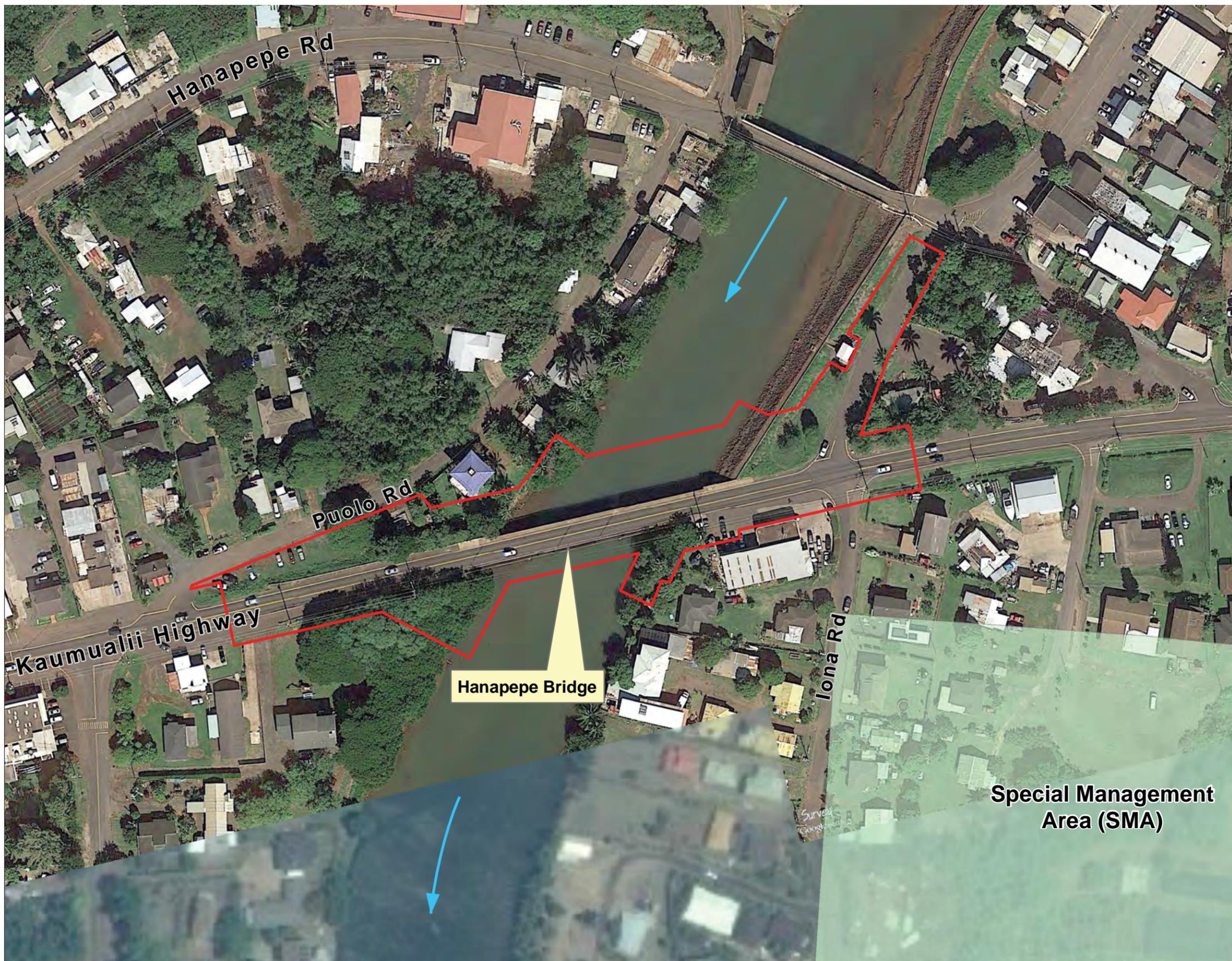


FIGURE 4-1
Zoning Map
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation



LEGEND

- Project Area
- Special Management Areas

- Notes:
1. High-Res Imagery Source: Google Earth 12/16/2013
 2. Low-Res Imagery Source: Digital Globe 08/26/2011
 3. Imagery base map is not orthorectified; therefore project features may not properly align with the imagery.

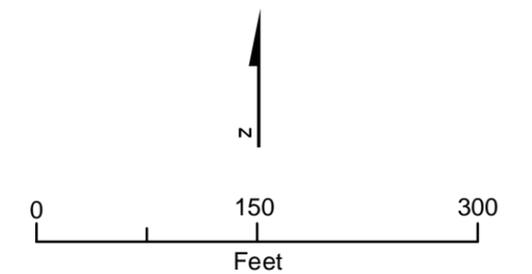


FIGURE 4-2
Special Management Area (SMA)
 Hanapepe Bridge Project
 Hawaii Bridges Program –
 Central Federal Lands Highway Division and
 Hawaii Department of Transportation

Findings and Reasons Supporting the Anticipated Determination

The analysis presented in this EA has found that the potential for impacts associated with the proposed project would not be significant, or would be mitigated to less than significant levels. Potential environmental impacts are generally temporary, occurring during construction, and are not expected to adversely impact the long-term environmental quality of the area surrounding the proposed project. This section summarizes the significance criteria used to determine whether the proposed project would have a significant effect on the environment.

5.1 Significance Criteria

The potential effects of the proposed project were evaluated based on the Significance Criteria specified in HAR §11-200-12. Below is a summary of potential short-term and long-term effects of the action relative to the criteria.

Involves an irrevocable commitment to, loss or destruction of any natural or cultural resources. The proposed project would demolish the existing three-span bridge constructed in 1938, which is eligible for listing on the National and Hawaii Registers of Historic Places. Demolition of the historic Hanapepe River Bridge would be an adverse effect. To mitigate this effect, the proposed replacement structure is a three-span bridge with span lengths and arches similar to the existing bridge. New concrete railings would have similar style openings to reflect the aesthetics and historic character of the existing railing.

The ca. 1959 levee on the upstream, east bank is also eligible for listing on the National and Hawaii Registers. New bridge abutments would remove about 7 feet of the levee (which has an overall length of approximately 2,200 feet). To minimize impacts to the levee wall, the temporary bypass bridge will be designed to clear the height of the wall.

No other eligible historic properties were found in the project area. The contractor would be required to comply with State laws and administrative rules for handling inadvertent discoveries of cultural artifacts and human remains during construction.

Biological surveys of the project study area found no threatened or endangered plant or animal species. BMPs and protocols would be implemented to avoid and minimize contact with individual members of protected migratory birds, waterbirds or nene, or the Hawaiian hoary bat that may be encountered in the project limits.

Curtails the range of beneficial uses of the environment. Replacing the existing structure in place would not curtail the range of beneficial uses of the environment.

Conflicts with the State's long-term environmental policies or goals and guidelines as expressed in HRS Chapter 344, 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 HRS Chapter 344. In particular, the project is consistent with transportation guidelines by improving the regional transportation infrastructure.

Transportation

- A. *Encourage transportation systems in harmony with the lifestyle of the people and environment of the State.*
- B. *Adopt guidelines to alleviate environmental degradation caused by motor vehicles.*

- C. *Encourage public and private vehicles and transportation system to conserve energy, reduce pollution emission, including noise, and provide safe and convenient accommodations for their users.*

Kaumualii Highway through Hanapepe Town carries all modes of land transportation on a daily basis, including passenger vehicles, buses, freight trucks, and bicyclists. The highway connects communities throughout the west side. It is used by commuters for work and school, and is essential for commerce and emergency response. The existing structure has exceeded its design life and a replacement structure is needed to maintain system-wide integrity.

Substantially affects the economic or social welfare of the community or State. The proposed project would have a positive impact on the economic and social welfare of the community by improving the long-term functionality of the highway system.

Substantially affects public health. The project site is in an established transportation corridor and would not adversely affect public health. It is part of a highway system that is a critical component of Kauai's emergency response and recovery capabilities. Preserving this transportation system would benefit public health and safety.

Involves substantial secondary impacts, such as population changes or effects on public facilities. The proposed project would not change the traffic volume using the structure or the highway. Therefore, the new structure itself would not generate secondary impacts, such as population growth or the need to expand public facilities.

Involves a substantial degradation of environmental quality. The replacement structure would not substantially degrade environmental quality. By design and function, the proposed structure would provide a safe crossing while minimizing harm to the surrounding environment.

Is individually limited but cumulatively has considerable effect upon the environment or involves a commitment for larger actions. The proposed project is a self-contained action and is not part of additional and/or related actions. There are no other HDOT or FHWA projects within a 1-mile radius of the Hanapepe River Bridge.

Substantially affects a rare, threatened, or endangered species, or its habitat. Biological surveys in September 2014 found no rare, threatened, or endangered species in the study area. However the biological resource assessment (SWCA 2015) noted that four endangered waterbirds—Hawaiian duck, Hawaiian coot, Hawaiian gallinule, and Hawaiian stilt—could be present or enter the project area. Nene may also be present on occasion and could fly over the project area. The endangered Hawaiian petrel and proposed endangered band-rumped petrel and the threatened Newell's shearwater may be affected by bright lights while transiting between their nest sites and the ocean. Hawaiian hoary bats may forage or roost in the project area. BMPs would be implemented to avoid and minimize adverse impacts, such that the project is not expected to substantially affect these species.

Detrimentially affects air or water quality or ambient noise levels. There would be short-term impacts on air quality and noise levels during the construction period. Mitigation measures would be implemented to minimize construction-related noise and dust impacts. In the long term, there would be no adverse impacts on air and water quality.

Affects or is likely to suffer damage by being located in an environmentally sensitive area such as a flood plain, tsunami zone, beach, erosion-prone area, geologically hazardous land, estuary, fresh water, or coastal waters. This project is located within a FEMA-designated floodplain and tsunami evacuation zone. The replacement structure is being designed in accordance with standards appropriate to the geologic, hydrologic, and seismic setting.

Substantially affects scenic vistas and view planes identified in County or State plans or studies. According to the Kauai General Plan, portions of Kaumualii Highway are identified as a scenic roadway corridor. This

designation is typically applied to roadways that travel through undeveloped, rather than urban areas. Even though the stretch of highway through Hanapepe Town is not a scenic roadway corridor, the bridge offers an outstanding *mauka* view of the Hanapepe River. Because the proposed bridge will feature a railing with openings similar to the existing railing, views from the bridge will not be substantially affected.

Requires substantial energy consumption. Fuel would be consumed by construction vehicles and equipment, but this use would be comparable to other construction projects and no adverse effects are expected.

5.2 Conclusion

Through structure design, impact avoidance and minimization actions, and proposed BMPs and mitigation measures, the analysis contained in this EA has determined that the proposed project would have no significant adverse impacts or would have impacts that can be mitigated to less than significant levels.

Anticipated Determination

Based on the information presented and examined in this document, the proposed project is not expected to produce significant adverse social, economic, cultural, or environmental impacts. Consequently, a finding of no significant impact is anticipated, pursuant to HRS Chapter 343 and the provisions of HAR Subchapter 6 of Chapter 200, Title 11.

Consultation and Coordination

7.1 Organizations Consulted During Preparation of the Draft Environmental Assessment

The following agencies and organizations were contacted during preparation of the Draft EA. They received preliminary project information and asked to provide comments relative to specific environmental compliance (such as NHPA Section 106 and ESA Section 7) or for general assistance in preparing the Draft EA. A template of the consultation letter is included at the end of this chapter.

7.1.1 Federal

- NMFS
- USACE
- USFWS

7.1.2 State of Hawaii

- Department of Accounting and General Services
- Department of Education, Kauai Area Complex
- Department of Hawaiian Home Lands
- HDOH, Clean Water Branch
- HDOH, Environmental Planning Office
- DLNR
- Office of Hawaiian Affairs
- Office of Planning (OP)
- SHPD
- Senator Ronald Kouchi, Senate District 8
- Representative James Tokioka, House District 15

7.1.3 County of Kauai

- Civil Defense Agency
- Department of Parks and Recreation
- Department of Public Works
- Department of Water
- Fire Department
- Planning Department
- Police Department
- Transportation Agency
- Kauai Council Chair Mel Rapozo
- Kauai Council Vice Chair Ross Kagawa
- Kauai Councilmember Mason Chock
- Kauai Councilmember Arryl Kaneshiro
- Kauai Councilmember KipuKai Kualii
- Kauai Councilmember JoAnn Yukimura

7.1.4 Utilities

- Hawaiian Telcom
- KIUC

- Oceanic Time Warner Cable
- Sandwich Isles Communications

7.1.5 Organizations

- Kauai Chamber of Commerce
- Kauai Path
- Kauai Visitors Bureau
- Sierra Club, Kauai Group of Kauai Chapter
- West Kauai Business and Professional Association

7.2 Early Consultation Comment Letters Received

A total of six agencies responded to requests for comments during the Draft EA preparation period. Of these, substantive comments were received from five agencies. These comments are summarized below and incorporated into relevant sections of the Draft EA. Letters are reproduced in full at the end of this chapter.

7.2.1 State Agencies

- **HDOH, Clean Water Branch** (letter dated May 18, 2015)
 1. A project that potentially impacts State waters must meet the following: (1) antidegradation policy, (2) designated uses, and (3) water quality criteria.
 2. NPDES permit coverage may be required.
 3. Permit from USACE may be required.
 4. Compliance with State water quality standards is required.
 5. All projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters.
- **HDOH, Environmental Planning Office** (letter dated May 12, 2015)
 1. Use of the online Hawaii Environmental Health Portal is encouraged.
 2. Water Quality Standards Maps have been updated and are posted online.
 3. University of Hawaii studies related to potential sea level rise changes in Hawaii are available online.
- **DLNR, Commission on Water Resource Management** (memo dated January 7, 2015, attached to letter from Russell Tsuji, Administrator, DLNR Land Division, dated January 15, 2015)

A Stream Channel Alteration Permit is needed before alteration(s) can be made to the stream bed and/or banks.
- **OP** (letter dated May 1, 2015)
 1. Verify project TMKs.
 2. Draft EA should contain an analysis of project conformance with the Hawaii State Plan.
 3. Draft EA should contain an assessment of project conformance with CZM objectives.
 4. Confirm whether an SMA permit is required.
 5. Federal Consistency Review should be listed as a potential requirement.
 6. Draft EA should include a section on watershed protection and management (see Hawaii Watershed Guidance developed by OP).

7. Consider OP's Stormwater Impact Assessment when evaluating project-related stormwater impacts.
8. Consider Low Impact Development design concepts and BMPs.

7.2.2 County Agencies

- **Kauai Department of Public Works** (letter dated May 6, 2015)
 1. Hanapepe River Bridge lies in Zone AEF, floodway. Certify that the proposed work will not increase the base flood elevation.
 2. Discuss and evaluate construction-related traffic impacts.

7.3 Hanapepe Public Information Meeting, September 16, 2015

A public information meeting was held on September 16, 2015, at the Hanapepe Public Library to provide an overview of the project — including purpose and need, proposed design elements, construction schedule, and traffic management during construction — and to obtain community feedback. The meeting was attended by 30 to 35 people. Primary concerns related to the following issues:

- Structural deficiencies resulting in load limits
- Bridge design that will allow passage of floating debris, anticipates rising sea levels, accommodates recreational uses, and is aesthetically pleasing
- Relative differences in cost and longevity between alternatives
- Design and load capacity of the temporary bridge
- Pedestrian accommodations, including ADA compliance, lighting, and temporary detour via the County bridge
- Possibility of proceeding with a temporary bridge if full funding is not immediately available

7.4 Distribution List for Draft EA

The following agencies, organizations, and individuals will be included on the distribution list for notification of the Draft EA public review and comment period.

7.4.1 Federal

- National Oceanic and Atmospheric Administration
- NMFS
- USACE
- USEPA
- USFWS

7.4.2 State of Hawaii

- Department of Accounting and General Services
- Department of Education, Kauai Area Complex
- Department of Hawaiian Home Lands
- HDOH, Clean Water Branch
- HDOH, Environmental Planning Office
- DLNR
- Office of Hawaiian Affairs
- OP
- SHPD

- Senator Ronald Kouchi, Senate District 8
- Representative James Tokioka, House District 15

7.4.3 County of Kauai

- Civil Defense Agency
- Department of Parks and Recreation
- Department of Public Works
- Department of Water
- Fire Department
- Mayor's Office
- Planning Department
- Police Department
- Transportation Agency
- Kauai Council Chair Mel Rapozo
- Kauai Council Vice Chair Ross Kagawa
- Kauai Councilmember Mason Chock
- Kauai Councilmember Arryl Kaneshiro
- Kauai Councilmember KipuKai Kualii
- Kauai Councilmember JoAnn Yukimura

7.4.4 Utilities

- Hawaiian Telcom
- KIUC
- Oceanic Time Warner Cable
- Sandwich Isles Communications

7.4.5 Organizations

- Kauai Chamber of Commerce
- Kauai Path
- Kauai Visitors Bureau
- Sierra Club, Kauai Group of Kauai Chapter
- West Kauai Business and Professional Association

7.4.6 Individuals

- Property Owner/Resident TMK: [4] 1-8-008:027
- Property Owner/Resident TMK: [4] 1-8-008:061
- Property Owner/Resident TMK: [4] 1-8-008:062
- Property Owner/Resident TMK: [4] 1-9-004:026
- Property Owner/Resident TMK: [4] 1-9-005:001
- Property Owner/Resident TMK: [4] 1-9-005:002
- Property Owner/Resident TMK: [4] 1-9-005:003
- Property Owner/Resident TMK: [4] 1-9-005:004
- Property Owner/Resident TMK: [4] 1-9-005:010
- Property Owner/Resident TMK: [4] 1-9-005:011
- Property Owner/Resident TMK: [4] 1-9-006:005
- Property Owner/Resident TMK: [4] 1-9-006:006
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- Property Owner/Resident TMK: [4] 1-9-006:008
- Property Owner/Resident TMK: [4] 1-9-006:009

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- Property Owner/Resident TMK: [4] 1-9-007:019
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- Property Owner/Resident TMK: [4] 1-9-010:041
- Property Owner/Resident TMK: [4] 1-9-010:050
- Property Owner/Resident TMK: [4] 1-9-011:011

7.4.7 Public Library

- Hanapepe Public Library (hardcopy will be available for public review)

7.4.8 Media

- The Garden Island Newspaper

PRE-ASSESSMENT COMMENTS

Template Letter with Project Sheet (attachment)

Comment and Response Letters

- State of Hawaii Department of Health, Clean Water Branch
- State of Hawaii Department of Health, Environmental Planning Office
- State of Hawaii Department of Land and Natural Resources, Commission on Water Resource Management
- Office of Planning, Department of Business Economic Development and Tourism
- Kauai Department of Public Works



U.S. Department
of Transportation
**Federal Highway
Administration**

Template for Pre-assessment Letter--Hanapepe

Central Federal Lands Highway Division 12300 West Dakota Avenue

Suite 380

Lakewood, CO 80228

720-963-3647

michael.will@dot.gov

March 24, 2015

In Reply Refer To:
HFPM-16

Dear _____ :

**Subject: Hawaii Bridge Program for Island of Kauai
Federal Highway Administration, Central Federal Lands Highway Division
Pre-Assessment Consultation
Chapter 343, Hawaii Revised Statutes and National Environmental Policy
Act**

The Federal Highway Administration, Central Federal Lands Highway Division (CFLHD), in partnership with the Hawaii Department of Transportation (HDOT), is conducting environmental studies to examine the impacts of three projects to improve three bridges on the island of Kauai. We are assisted in this effort by our consultant, CH2M HILL.

- Hanapepe River Bridge on Kaumualii Highway
Koloa and Waimea Districts, TMK: [4] 1-9-007: 001
- Bridge 7E on Kaumualii Highway
Koloa District, TMK: [4] 2-7-001
- Intersection Improvements at Kuhio Highway and Mailihuna Road and
Kapaa Stream Bridge on Kuhio Highway
Kawaihau District, TMK: [4] 4-6-014 and 4-7-003

Attached to this letter are fact sheets for each of the projects, including photos and maps. We are requesting comments and input regarding environmental concerns in all resource areas, and information that might help us to evaluate the projects.

The environmental review for this project is being conducted in accordance with the National Environmental Policy Act (NEPA) and Hawaii Revised Statutes (HRS), Chapter 343.

Please send any concerns or comments to Kathleen Chu, CH2M Hill program manager (CH2M Hill, Inc, 1132 Bishop Street, Suite 1100, Honolulu, HI 96813) or myself, within 30 days receipt of this letter. If you have questions, please contact Ms. Chu at Ph. 440-0283 or kathleen.chu@ch2m.com or myself at Ph. 720-963-3647 or Michael.will@dot.gov. Thank you.

Sincerely,



J. Michael Will, P.E.
Program Engineering Manager

Enclosure:

Fact Sheets for Hanapepe Bridge, Kapaa Stream Bridge and Intersection Improvements, and Bridge No. 7E

cc: Nicole Winterton/FHWA-CFLHD
Kathleen Chu/CH2M HILL
Paul Luersen/CH2M HILL
Elizabeth Cutler/CH2M HILL

Hanapepe River Bridge

Hanapepe, Waimea District, Kauai
TMK: [4] 1-9-007: 001

Location

The project area for the improvements includes Hanapepe River Bridge and its immediate environs. The bridge is located at milepost 16.5 on Kaumualii Highway (State Route 50) in Hanapepe town on the west side of Kauai (see Project Location Map). The bridge site is located approximately 0.4 mile upstream from the outlet to Hanapepe Bay.

Existing Conditions

Hanapepe River Bridge, built in 1938, is a concrete tee-beam bridge with two piers and three arched spans. The existing bridge measures 275 feet long and 35 feet, 10 inches wide. There are two 12-foot wide travel lanes and 5-foot-wide raised sidewalks on each side.

Kaumualii Highway is a two-lane undivided highway in the project area with a posted speed limit of 35 mph. It is classified as an Urban Minor Arterial. Average daily traffic (ADT) is currently 11,380. For long-range planning purposes, ADT in 2035 is estimated at 15,600. There is no plan to add travel lanes to increase the capacity of the bridge.

Purpose and Need

The purpose of this project is to improve Hanapepe River Bridge and its approaches, by rehabilitation or replacement, to create a river crossing that remains a safe and functional component of the regional transportation system for highway users. Based on bridge inspections and studies, a number of conditions were identified that need to be remedied, including: overall structural deficiencies, chipping and spalling in the concrete substructure, deterioration of the timber piles, pier and abutment scour, settlement of underlying fill soils leading to pavement cracks, and narrow travel lanes and shoulders.

Project Description

Bridge design alternatives are being developed in conjunction with ongoing environmental studies. However, design options will include the following components:

- Restore structural integrity of the river crossing via bridge rehabilitation or replacement
- Meet live load and seismic requirements
- Provide for adequate hydrological flow under flood conditions
- Mitigate scour at bridge foundations
- Widen bridge to include shoulders in addition to the travel lanes and sidewalks
- Rehabilitate roadway approaches



Photo 1: Mauka side of Hanapepe River Bridge, looking west

- Upgrade bridge railings in compliance with crash test requirements
- Replace/relocate existing utilities
- Develop a traffic management plan with appropriate construction-period detours

This project is included in the Statewide Transportation Improvement Program (STIP) and will be funded, in part, with federal monies.

Project Location Map

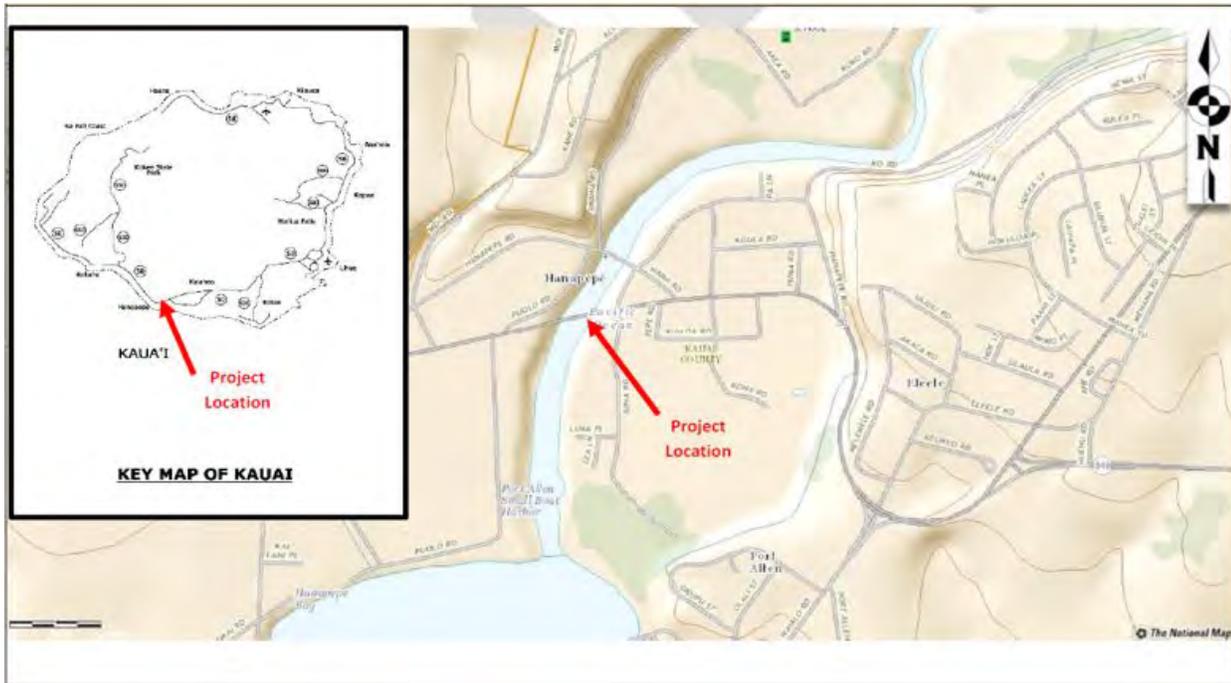
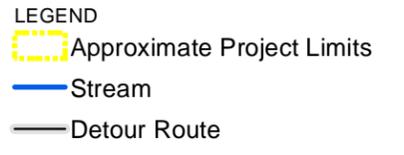
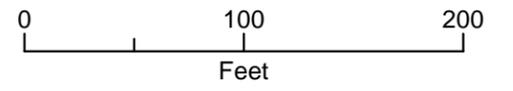


Photo 2: View of Hanapepe Bridge looking west



Notes:
 1. Imagery Source: ESRI World Imagery



Hanapepe Bridge Project
General Project Limits
 Central Federal Lands - Waimea, Kauai



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

In reply, please refer to:
EMD/CWB

05028PNN.15

May 18, 2015

Mr. J. Michael Will, P.E.
Program Engineering Manager
Central Federal Lands Highway Division
U.S. Department of Transportation
12300 West Dakota Avenue, Suite 380
Lakewood, Colorado 80228

Dear Mr. Will:

**SUBJECT: Comments on the Pre-Assessment Consultation for the
Hawaii Bridge Program
State of Hawaii**

The Department of Health (DOH), Clean Water Branch (CWB), acknowledges receipt of your letter, dated March 24, 2015, requesting comments on your project. The DOH-CWB has reviewed the subject document and offers these comments. Please note that our review is based solely on the information provided in the subject document and its compliance with the Hawaii Administrative Rules (HAR), Chapters 11-54 and 11-55. You may be responsible for fulfilling additional requirements related to our program. We recommend that you also read our standard comments on our website at:
<http://health.hawaii.gov/epo/files/2013/05/Clean-Water-Branch-Std-Comments.pdf>.

1. Any project and its potential impacts to State waters must meet the following criteria:
 - a. Antidegradation policy (HAR, Section 11-54-1.1), which requires that the existing uses and the level of water quality necessary to protect the existing uses of the receiving State water be maintained and protected.
 - b. Designated uses (HAR, Section 11-54-3), as determined by the classification of the receiving State waters.
 - c. Water quality criteria (HAR, Sections 11-54-4 through 11-54-8).
2. You may be required to obtain National Pollutant Discharge Elimination System (NPDES) permit coverage for discharges of wastewater, including storm water runoff, into State surface waters (HAR, Chapter 11-55).

For NPDES general permit coverage, a Notice of Intent (NOI) form must be submitted at least 30 calendar days before the commencement of the discharge. An application for an NPDES individual permit must be submitted at least 180 calendar days before the commencement of the discharge. To request NPDES permit coverage, you must submit the applicable form ("CWB Individual NPDES Form" or "CWB NOI Form") through the e-Permitting Portal and the hard copy certification statement with the respective filing fee (\$1,000 for an individual NPDES permit or \$500 for a Notice of General Permit Coverage). Please open the e-Permitting Portal website located at: <https://eha-cloud.doh.hawaii.gov/epermit/>. You will be asked to do a one-time registration to obtain your login and password. After you register, click on the Application Finder tool and locate the appropriate form. Follow the instructions to complete and submit the form.

3. If your project involves work in, over, or under waters of the United States, it is highly recommended that you contact the Army Corp of Engineers, Regulatory Branch (Tel: 835-4303) regarding their permitting requirements.

Pursuant to Federal Water Pollution Control Act [commonly known as the "Clean Water Act" (CWA)], Paragraph 401(a)(1), a Section 401 Water Quality Certification (WQC) is required for "[a]ny applicant for Federal license or permit to conduct any activity including, but not limited to, the construction or operation of facilities, which may **result** in any discharge into the navigable waters..." (emphasis added). The term "discharge" is defined in CWA, Subsections 502(16), 502(12), and 502(6); Title 40 of the Code of Federal Regulations, Section 122.2; and HAR, Chapter 11-54.

4. Please note that all discharges related to the project construction or operation activities, whether or not NPDES permit coverage and/or Section 401 WQC are required, must comply with the State's Water Quality Standards. Noncompliance with water quality requirements contained in HAR, Chapter 11-54, and/or permitting requirements, specified in HAR, Chapter 11-55, may be subject to penalties of \$25,000 per day per violation.
5. It is the State's position that all projects must reduce, reuse, and recycle to protect, restore, and sustain water quality and beneficial uses of State waters. Project planning should:
 - a. Treat storm water as a resource to be protected by integrating it into project planning and permitting. Storm water has long been recognized as a source of irrigation that will not deplete potable water resources. What is often overlooked is that storm water recharges ground water supplies and feeds streams and estuaries; to ensure that these water cycles are not disrupted, storm water cannot be relegated as a waste product of impervious surfaces. Any project planning must recognize storm water as an asset that sustains and protects natural ecosystems and traditional beneficial uses of State waters, like

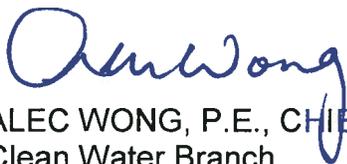
community beautification, beach going, swimming, and fishing. The approaches necessary to do so, including low impact development methods or ecological bio-engineering of drainage ways must be identified in the planning stages to allow designers opportunity to include those approaches up front, prior to seeking zoning, construction, or building permits.

- b. Clearly articulate the State's position on water quality and the beneficial uses of State waters. The plan should include statements regarding the implementation of methods to conserve natural resources (e.g., minimizing potable water for irrigation, gray water re-use options, energy conservation through smart design) and improve water quality.
- c. Consider storm water Best Management Practice (BMP) approaches that minimize the use of potable water for irrigation through storm water storage and reuse, percolate storm water to recharge groundwater to revitalize natural hydrology, and treat storm water which is to be discharged.
- d. Consider the use of green building practices, such as pervious pavement and landscaping with native vegetation, to improve water quality by reducing excessive runoff and the need for excessive fertilization, respectively.
- e. Identify opportunities for retrofitting or bio-engineering existing storm water infrastructure to restore ecological function while maintaining, or even enhancing, hydraulic capacity. Particular consideration should be given to areas prone to flooding, or where the infrastructure is aged and will need to be rehabilitated.

If you have any questions, please visit our website at:

<http://health.hawaii.gov/cwb>, or contact the Engineering Section, CWB, at (808) 586-4309.

Sincerely,



ALEC WONG, P.E., CHIEF
Clean Water Branch

NN:ay

- c: Ms. Kathleen Chu, CH2M Hill [via e-mail kathleen.chu@ch2m.com only]
DOH-EPO #15-094 [via e-mail only]
Mr. Gary Ueunten, CWB, Kauai District Health Office [via e-mail only]
Mr. Neil Mukai, CWB, Hawaii District Health Office [via e-mail only]



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

December 7, 2015

In Reply Refer To:
HFPM-16

TO: ALEC WONG, P.E.
CHIEF, CLEAN WATER BRANCH
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HI 96801

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: PRE-ASSESSMENT CONSULTATION
HAWAII BRIDGE PROGRAM
KAUAI PROJECTS: BRIDGE 7E, HANAPEPE, KAPAA
OAHU PROJECTS: HALONA, ROOSEVELT, KAWELA, NANAHU
HAWAII ISLAND PROJECTS: HILEA, NINOLE

Dear Mr. Wong:

Thank you for pre-assessment comments on the subject projects transmitted by letter dated May 18, 2015.

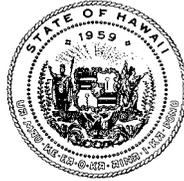
The project team is aware that certain projects may require certification or permits under the Clean Water Act. We have been engaged in early consultation with your staff and greatly appreciate their assistance.

We appreciate your participation in the environmental review process. A copy of the Draft Environmental Assessment will be sent to your office when available for public review and comment. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Kevin Ito, HDOT
Nicole Winterton, CFLHD
Kathleen Chu, CH2M HILL



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

In reply, please refer to:

File:

HFFPM-16

EPO 15-094

May 12, 2015

Mr. J. Michael Will, P.E.
Program Engineering Manager
Central Federal Lands Highway Division
U.S. Department of Transportation
12300 West Dakota Avenue, Suite 380
Lakewood, Colorado 80228
Via email: Michael.will@dot.gov

Dear Mr. Will:

SUBJECT: Pre- Assessment Consultation (PC) for Hawaii Bridge Program for State of Hawaii

The Department of Health (DOH), Environmental Planning Office (EPO), acknowledges receipt of your PC to our office on March 24, 2015. Thank you for allowing us to review and comment on the proposed project. The PC was routed to the Clean Water Branch, and the District Health Offices on Kauai and Hawaii. They will provide specific comments to you if necessary. EPO recommends that you review the standard comments and available strategies to support sustainable and healthy design provided at: <http://health.hawaii.gov/epo/home/landuse-planning-review-program>. Projects are required to adhere to all applicable standard comments.

We encourage you to examine and utilize the Hawaii Environmental Health Portal. The portal provides links to our e-Permitting Portal, Environmental Health Warehouse, Groundwater Contamination Viewer, Hawaii Emergency Response Exchange, Hawaii State and Local Emission Inventory System, Water Pollution Control Viewer, Water Quality Data, Warnings, Advisories and Postings. The Portal is continually updated. Please visit it regularly at: <https://eha-cloud.doh.hawaii.gov>

You may also wish to review the revised Water Quality Standards Maps that have been updated for all islands. The Water Quality Standards Maps can be found at: <http://health.hawaii.gov/cwb/site-map/clean-water-branch-home-page/water-quality-standards>

The University of Hawaii has examined potential sea level rise changes in Hawaii. You may find it useful to review their studies at: <http://www.soest.hawaii.edu/coasts/sealevel>

We request that you utilize all of this information on your proposed project to increase sustainable, innovative, inspirational, transparent and healthy design.

Mahalo nui loa,

A handwritten signature in blue ink, appearing to read "Laura Leialoha Phillips McIntyre".

Laura Leialoha Phillips McIntyre, AICP
Program Manager, Environmental Planning Office

c: Kathleen Chu, CH2M Hill program manager – kahtleen.chu@ch2m.com {via email only}
CWB, DHO Kauai, DHO Hawaii {via email only}



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

December 7, 2015

In Reply Refer To:
HFPM-16

TO: LAURA LEIALOHA PHILLIPS McINTYRE, AICP
PROGRAM MANAGER, ENVIRONMENTAL PLANNING OFFICE
DEPARTMENT OF HEALTH
P.O. BOX 3378
HONOLULU, HI 96801

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: PRE-ASSESSMENT CONSULTATION
HAWAII BRIDGE PROGRAM
KAUAI PROJECTS: BRIDGE 7E, HANAPEPE, KAPAA
OAHU PROJECTS: HALONA, ROOSEVELT, KAWELA, NANAHU
HAWAII ISLAND PROJECTS: HILEA, NINOLE

Dear Ms. McIntyre:

Thank you for pre-assessment comments on the subject projects transmitted by letter dated May 12, 2015.

We acknowledge the information provided on the Hawaii Environmental Health Portal, Water Quality Standard Maps, and University of Hawaii studies related to sea level rise.

We appreciate your participation in the environmental review process. A copy of the Draft Environmental Assessment will be sent to your office when available for public review and comment. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Kevin Ito, HDOT
Nicole Winterton, CFLHD
Kathleen Chu, CH2M HILL

DAVID Y. IGE
GOVERNOR OF HAWAII



STATE OF HAWAII
DEPARTMENT OF LAND AND NATURAL RESOURCES

POST OFFICE BOX 621
HONOLULU, HAWAII 96809

CARTY S. CHANG
ACTING CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

FIRST DEPUTY

WILLIAM M. TAM
INTERIM DEPUTY DIRECTOR - WATER

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

January 15, 2015

U. S. Department of Transportation
Federal Highway Administration
Central Federal Lands Highway Division
Attn: J. Michael Will, Program Engineering Manager
12300 West Dakota Avenue, Suite 330
Lakewood, CO 80228

via email: michael.will@dot.gov

Dear Mr. Will,

SUBJECT: Notification of Intent to Construct the Hawaii Bridge Program, Request for Information, HFPM-16

Thank you for the opportunity to review and comment on the subject matter. In addition to the comments sent to you dated December 18, 2014, and January 9, 2015, enclosed are additional comments from the Commission on Water Resource Management on the subject matter. Should you have any questions, please feel free to call Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Sincerely,

A handwritten signature in blue ink, appearing to read "Russell Y. Tsuji".

Russell Y. Tsuji
Land Administrator

Enclosure(s)

NEIL ABERCROMBIE
GOVERNOR OF HAWAII



RECEIVED
LAND DIVISION

WILLIAM J. AHA, JR.
CHAIRPERSON
BOARD OF LAND AND NATURAL RESOURCES
COMMISSION ON WATER RESOURCE MANAGEMENT

2015 JAN 14 PM 1:19



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

December 2, 2014

MEMORANDUM

TO: DLNR Agency:

- Div. of Aquatic Resources
- Div. of Boating & Ocean Recreation
- Engineering Division
- Div. of Forestry & Wildlife
- Div. of State Parks
- Commission on Water Resource Management
- Office of Conservation & Coastal Lands

- Land Division - Oahu District
- Land Division - Kauai District
- Land Division - Maui District
- Land Division - Hawaii District
- Historic Preservation

FROM: Russell Y. Tsuji, Land Administrator

SUBJECT: Notification of Intent to Construct the Hawaii Bridge Program, Request for Information

LOCATION: Various (see cover letter) including all Districts except Maui

APPLICANT: Federal Highway Administration, Central Federal Lands Highway Division, in cooperation with the Hawaii Department of Transportation

Transmitted for your review and comment on the above-referenced document. We would appreciate your comments on this document.

Please submit any comments by December 18, 2014. If no response is received by this date, we will assume your agency has no comments. If you have any questions about this request, please contact Supervising Land Agent Steve Molmen at (808) 587-0439. Thank you.

Attachments

- We have no objections.
- We have no comments.
- Comments are attached.

Signed: William M. Tam

Print Name: WILLIAM M. TAM, Deputy Director

Date: January 7, 2015

FILE ID:	RFD 4095.0
DOC ID:	11897



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

January 7, 2015

REF: RFD.4095.0

TO: Russell Tsuji, Administrator
Land Division

FROM: William M. Tam, Deputy Director 
Commission on Water Resource Management

SUBJECT: Notification of Intent to Construct Hawaii Bridge Program, Request for Information

FILE NO.: HFPM-16
TMK NO.: Various including all Districts except Maui

Thank you for the opportunity to review the subject document. The Commission on Water Resource Management (CWRM) is the agency responsible for administering the State Water Code (Code). Under the Code, all waters of the State are held in trust for the benefit of the citizens of the State, therefore, all water use is subject to legally protected water rights. CWRM strongly promotes the efficient use of Hawaii's water resources through conservation measures and appropriate resource management. For more information, please refer to the State Water Code, Chapter 174C, Hawaii Revised Statutes, and Hawaii Administrative Rules, Chapters 13-167 to 13-171. These documents are available via the Internet at <http://www.hawaii.gov/dlnr/cwrm>.

Our comments related to water resources are checked off below.

- 1. We recommend coordination with the county to incorporate this project into the county's Water Use and Development Plan. Please contact the respective Planning Department and/or Department of Water Supply for further information.
- 2. We recommend coordination with the Engineering Division of the State Department of Land and Natural Resources to incorporate this project into the State Water Projects Plan.
- 3. We recommend coordination with the Hawaii Department of Agriculture (HDOA) to incorporate the reclassification of agricultural zoned land and the redistribution of agricultural resources into the State's Agricultural Water Use and Development Plan (AWUDP). Please contact the HDOA for more information.
- 4. We recommend that water efficient fixtures be installed and water efficient practices implemented throughout the development to reduce the increased demand on the area's freshwater resources. Reducing the water usage of a home or building may earn credit towards Leadership in Energy and Environmental Design (LEED) certification. More information on LEED certification is available at <http://www.usgbc.org/leed>. A listing of fixtures certified by the EPA as having high water efficiency can be found at <http://www.epa.gov/watersense/>.
- 5. We recommend the use of best management practices (BMP) for stormwater management to minimize the impact of the project to the existing area's hydrology while maintaining on-site infiltration and preventing polluted runoff from storm events. Stormwater management BMPs may earn credit toward LEED certification. More information on stormwater BMPs can be found at <http://hawaii.gov/dbedt/czm/initiative/lid.php>.
- 6. We recommend the use of alternative water sources, wherever practicable.
- 7. We recommend participating in the Hawaii Green Business Program, that assists and recognizes businesses that strive to operate in an environmentally and socially responsible manner. The program description can be found online at <http://energy.hawaii.gov/green-business-program>

- 8. We recommend adopting landscape irrigation conservation best management practices endorsed by the Landscape Industry Council of Hawaii. These practices can be found online at http://www.hawaiiscape.com/wp-content/uploads/2013/04/LICH_Irrigation_Conservation_BMPs.pdf
- 9. There may be 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.

Permits required by CWRM:

Additional information and forms are available at http://hawaii.gov/dlnr/cwrn/info_permits.htm.

- 10. The proposed water supply source for the project is located in a designated water management area, and a Water Use Permit is required prior to use of water. The Water Use Permit may be conditioned on the requirement to use dual line water supply systems for new industrial and commercial developments.
- 11. A Well Construction Permit(s) is (are) required before any well construction work begins.
- 12. A Pump Installation Permit(s) is (are) required before ground water is developed as a source of supply for the project.
- 13. There is (are) well(s) located on or adjacent to this project. If wells are not planned to be used and will be affected by any new construction, they must be properly abandoned and sealed. A permit for well abandonment must be obtained.
- 14. Ground water withdrawals from this project may affect streamflows, which may require an instream flow standard amendment.
- 15. A Stream Channel Alteration Permit(s) is (are) required before any alteration(s) can be made to the bed and/or banks of a stream channel.
- 16. A Stream Diversion Works Permit(s) is (are) required before any stream diversion works is (are) constructed or altered.
- 17. A Petition to Amend the Interim Instream Flow Standard is required for any new or expanded diversion(s) of surface water.
- 18. The planned source of water for this project has not been identified in this report. Therefore, we cannot determine what permits or petitions are required from our office, or whether there are potential impacts to water resources.
- OTHER:

If there are any questions, please contact Dean Uyeno at 587-0234.



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

December 7, 2015

In Reply Refer To:
HFPM-16

TO: ROY HARDY
DEPUTY DIRECTOR
COMMISSION ON WATER RESOURCE MANAGEMENT
DEPARTMENT OF LAND AND NATURAL RESOURCES
P.O. BOX 621
HONOLULU, HI 96809

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: PRE-ASSESSMENT CONSULTATION
HAWAII BRIDGE PROGRAM
KAUAI PROJECTS: BRIDGE 7E, HANAPEPE, KAPAA
OAHU PROJECTS: HALONA, ROOSEVELT, KAWELA, NANAHU
HAWAII ISLAND PROJECTS: HILEA, NINOLE

Dear Mr. Hardy:

Thank you for pre-assessment comments on the subject projects transmitted by letter dated January 7, 2015.

We acknowledge that projects may require a Stream Channel Alteration Permit, and will initiate the application process as needed.

We appreciate your participation in the environmental review process. A copy of the Draft Environmental Assessment will be sent to your office when available for public review and comment. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,

J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Kevin Ito, HDOT
Nicole Winterton, CFLHD
Kathleen Chu, CH2M HILL



OFFICE OF PLANNING STATE OF HAWAII

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

Telephone: (808) 587-2846
Fax: (808) 587-2824
Web: <http://planning.hawaii.gov/>

DAVID Y. IGE
GOVERNOR

LEO R. ASUNCION
ACTING DIRECTOR
OFFICE OF PLANNING

Ref. No. P-14732

May 1, 2015

RECEIVED

MAY 4 2015

Ms. Kathleen Chu
Program Manager
CH2M Hill, Inc.
1132 Bishop Street, Suite 1100
Honolulu, Hawaii 96813

Dear Ms. Chu:

Subject: Hawaii Bridge Program for the State of Hawaii
Federal Highway Administration, Central Federal Lands Highway Division,
Pre-Assessment Consultation
Chapter 343, Hawaii Revised Statutes and National Environmental Policy
Act; TMK: Various

Thank you for the opportunity to provide comments on the pre-consultation request for a Draft Environmental Assessment (Draft EA) being developed for the Hawaii Bridge Program. The pre-consultation review material was transmitted to our office by letter dated March 24, 2015.

It is our understanding that the Federal Highway Administration, Central Federal Lands Highway Division, in partnership with the Hawaii Department of Transportation, is conducting this environmental study for nine bridges on the islands of Kauai, Oahu, and Hawaii. The purpose of this bridge improvement project is the rehabilitation or replacement of identified bridges to create a safer and more functional stream, river, and canal crossing network for roadway users. The bridge improvements will focus on getting these bridges up to current design standards, increase load capacity, allow for safer pedestrian traffic, and improve on railings, transitions, and bridge approaches.

The Office of Planning (OP) has reviewed the transmitted material and has the following comments to offer:

1. Some of the bridge sites listed in the Draft EA review material contain incorrect Tax Map Key (TMK) numbers. TMK's generally have a nine digit number and are listed by island designation, plat, and parcel locations. The island of Oahu is classified by the number (1), Maui County by (2), Hawaii County by (3), and Kauai County by (4). The review material, for example, lists the Hanapepe River Bridge with the correct TMK: (4) 1-9-007:001. The bridges on the island of Oahu have an insufficient

amount of TMK numerals. The East Hawaii County locations list the wrong island designation (it should be listed with island designation of (3), rather than the island designation of (4)). The Draft EA should correct these errors and provide TMK locations with a nine digit format.

2. OP provides technical assistance to state and county agencies in administering the statewide planning system in Hawaii Revised Statutes (HRS) Chapter 226, the Hawaii State Plan. The Hawaii State Plan provides goals, objectives, priorities, and priority guidelines for growth, development, and the allocation of resources throughout the State. The Hawaii State Plan includes diverse policies and objectives of state interest including but not limited to the economy, agriculture, the visitor industry, federal expenditure, the physical environment, facility systems, socio-cultural advancement, climate change adaptation, and sustainability.

The Draft EA should include an analysis that addresses whether the proposed project conforms or is in conflict with the objectives, policies, and priority guidelines listed in the Hawaii State Plan.

3. The coastal zone management area is defined as "all lands of the State and the area extending seaward from the shoreline to the limit of the State's police power and management authority, including the U.S. territorial sea" see HRS § 205A-1 (definition of "coastal zone management area").

HRS Chapter 205A requires all State and county agencies to enforce the coastal zone management (CZM) objectives and policies. The Draft EA should include an assessment as to how the proposed project conforms to the CZM objectives and its supporting policies set forth in HRS § 205A-2. The assessment addressing compliance with HRS Chapter 205A is an important component for satisfying the requirements of HRS Chapter 343. These objectives and policies include: recreational resources, historic resources, scenic and open space resources, coastal ecosystems, economic uses, coastal hazards, managing development, public participation, beach protection, and marine resources.

4. Because of the proximity to the shoreline, some of the bridge sites may lie within areas designated as Special Management Areas (SMA). Please confirm with the City and County of Honolulu's Department of Planning and Permitting, the County of Kauai Planning Department, and the County of Hawaii Planning Department on the location of these bridges in relation with the SMA boundaries and whether SMA permits are required.

Ms. Kathleen Chu

May 1, 2015

Page 3

5. The national Coastal Zone Management Act requires direct federal activities and development projects to be consistent with approved state coastal programs to the maximum extent practicable. OP is the lead state agency to conduct this Federal Consistency evaluation.

Because at least one of the proposing agencies for this Draft EA is a federal agency, and federal funding will be used to finance this endeavor, this project may require compliance with Federal Consistency requirements. The Draft EA should list all applicable permits needed for this project. Any federal permits required for this project may have implications on the federal consistency evaluation conducted by OP.

6. Our review indicates that these bridge improvement projects lie within proximity to perennial streams, canals, wetlands, and are within numerous watersheds. The project areas are adjacent to a range of human activities from agriculture, urban development, and activity along coastlines or upstream from the coastline. The Draft EA should consider inclusion of a section addressing watershed protection and management.

OP has created the Hawaii Watershed Guidance to provide direction on methods to safeguard Hawaii's watersheds and implement watershed plans. This guidance provides a number of management measures that address polluted runoff. OP's watershed guidance provides a number of management measures that address polluted runoff from urban activities, and a summary and links to management measures that may be implemented to minimize coastal nonpoint pollution impact. Specifically please examine, Section B – Roads, Highways, and Bridges pages 132-135. The document can be viewed or downloaded from the Office of Planning website at [http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/HI Watershed Guidance Final.pdf](http://files.hawaii.gov/dbedt/op/czm/initiative/nonpoint/HI_Watershed_Guidance_Final.pdf).

7. We have reviewed the location maps of the bridge improvement projects and compared them to known coastal resources in the area. Many of these parcels are located in flood hazard zones, tsunami evacuation areas, and as noted above, land zoned for agriculture or urban uses, or are located near perennial streams, canals, wetlands, seasonal river gulches, or pass close to coastal areas and beaches. Therefore, inclusion of a stormwater impact evaluation would be beneficial to the Draft EA. Development and land use activities can create erosion, increased stormwater runoff, and coastal pollution that cause direct, secondary, and cumulative impacts to Hawaii's resources.

Ms. Kathleen Chu
May 1, 2015
Page 4

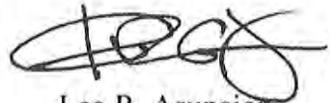
Please consider OP's Stormwater Impact Assessment in your stormwater impact evaluation for this project. This document can be used to identify and evaluate information on hydrology, stressors, sensitivity of aquatic and riparian resources, and management measures to control runoff occurrences. Mitigation measures and best management practices (BMP) listed in this document can be applied to water runoff strategies to prevent damage to coastal ecosystems. This document will assist in integrating stormwater impact assessment within the planning and environmental review process of a project. The document can be found at http://files.hawaii.gov/dbedt/op/czm/initiative/stomwater_impact/final_stormwater_impact_assessments_guidance.pdf.

8. Construction of widened roadways, new bridge approaches, increased support structures for bridge spans, and pedestrian crossing will introduce hardened impervious surfaces, secondary development, and may require additional drainage infrastructure to be built. Please consider Low-Impact Development (LID) design practices in the planning process for this project. LID techniques promote a range of structural BMP's for stormwater control management, roadway development, and urban layout that minimizes negative environmental impact.

LID design concepts and BMP's that should be considered include: the preservation of natural features and conservation design; the reduction of impervious cover; and utilizing natural features and source control for stormwater management. These methods are listed in OP's Low Impact Development, A Practitioners Guide. For more information on LID – BMP's, please examine Section 1.7, pgs. 1-4 to 1-11. This guidance can be viewed or downloaded from the OP website at: http://files.hawaii.gov/dbedt/op/czm/initiative/lid/lid_guide_2006.pdf

If you have any questions regarding this comment letter, please contact Josh Hekekia of our office at 587-2845.

Sincerely,



Leo R. Asuncion
Acting Director

c: J. Michael Will, P.E., Program Engineering Manager



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

12300 West Dakota Avenue
Suite 380
Lakewood, CO 80228
Office: 720-963-3647
Fax: 720-963-3596
Michael.Will@dot.gov

December 7, 2015

In Reply Refer To:
HFPM-16

TO: LEO R. ASUNCION
DIRECTOR
OFFICE OF PLANNING
235 SOUTH BERETANIA STREET, 6TH FLOOR
HONOLULU, HI 96813

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: PRE-ASSESSMENT CONSULTATION
HAWAII BRIDGE PROGRAM
KAUAI PROJECTS: BRIDGE 7E, HANAPEPE, KAPAA
OAHU PROJECTS: HALONA, ROOSEVELT, KAWELA, NANAHU
HAWAII ISLAND PROJECTS: HILEA, NINOLE

Dear Mr. Asuncion:

Thank you for pre-assessment comments on the subject projects transmitted by letter dated May 1, 2015. We offer the following responses in the order presented in your letter:

1. Tax Map Key numbers will be verified.
2. The Draft Environmental Assessment (DEA) will discuss consistency with the Hawaii State Plan.
3. The DEA will discuss consistency with Coastal Zone Management objectives.
4. Where relevant, the Special Management Area permit will be listed as a potential requirement.
5. Federal Consistency Review will be listed as a potential requirement.
6. The DEA will assess potential impacts on water resources.
7. We acknowledge the availability of the Office of Planning's Stormwater Impact Assessment as an environmental planning resource.
8. Stormwater management measures are being considered in project design and will be addressed in the DEA.

We appreciate your participation in the environmental review process. A copy of the DEA will be sent to your office when available for public review and comment. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Cc:
Christine Yamasaki, HDOT
Kevin Ito, HDOT
Nicole Winterton, CFLHD
Kathleen Chu, CH2M HILL

Bernard P. Carvalho, Jr.
Mayor



Larry Dill, P.E.
County Engineer

Nadine K. Nakamura
Managing Director

Lyle Tabata
Deputy County Engineer

DEPARTMENT OF PUBLIC WORKS

County of Kaua'i, State of Hawai'i

4444 Rice Street, Suite 275, Līhu'e, Hawai'i 96766
TEL (808) 241-4992 FAX (808) 241-6604

May 6, 2015

Kathleen Chu
CH2M Hill, Inc.
1132 Bishop Street, Suite 100
Honolulu, Hawai'i 96813

Subject Hawai'i Bridge Program for Island of Kaua'i
Federal highway Administration, Central Federal Lands Highway Division
Pre-Assessment Consultation
Chapter 343, Hawaii Revised Statutes and National Environmental Policy Act

PW 04.15.050

Dear Ms. Chu:

Thank you for the opportunity to review the fact sheets and to provide input on three projects to improve three bridges on the island of Kaua'i. We have the following comments on the projects:

**Hanapēpē River Bridge on Kaumualii Highway
Kōloa and Waimea Districts, TMK (4) 1-9-007: 001**

1. The Hanapēpē River Bridge lies within Zone AEF of Flood Insurance Rate Map (FIRM) Panel 287F. Zone AEF is the floodway area of Zone AE. Where development is proposed in a floodway, a registered engineer will need to certify that the work will not cause an increase in the base flood elevation during the occurrence of the base flood discharge.
2. Included in the Project Description for Hanapēpē River Bridge is "Develop a traffic management plan with appropriate construction-period detours". The short term impacts of construction on traffic in the Hanapēpē area should be fully discussed and evaluated in the Environmental Assessment.

**Bridge 7E on Kaumualii Highway
Kōloa District, TMK (4) 2-7-001**

1. The fact sheet states that Bridge 7E was built in 1933, but later it states that "HDOT's 2013 Historic Bridge Inventory identified that Bridge 7E is a common post-war bridge constructed after 1945." The environmental document should clarify this discrepancy.

Intersection Improvements at Kuhio Highway and Ma'ilihuna Road and Kapaa Stream Bridge on Kuhio Highway
Kawaihau District, TMK: (4) 4-6-014 and 4-7-003

1. The Kapaa Stream Bridge lies within Zone AEF on Flood Insurance Rate Map (FIRM) Panel 210F. Zone AEF is the floodway area of Zone AE. Where development is proposed in a floodway, a registered engineer will need to certify that the work will not cause an increase in the base flood elevation during the occurrence of the base flood discharge.
2. Included in the Project Description for Kapaa Stream Bridge is "Develop a traffic management plan with appropriate construction-period detours". The short term impacts of construction on traffic in the area of the Ma'ilihuna Road Intersection should be fully discussed and evaluated in the Environmental Assessment.
3. A roundabout should be evaluated as one of the alternatives for improving the Ma'ilihuna Road intersection in the Environmental Assessment. We believe that a roundabout could have many benefits over both signalized and stop-controlled alternatives; including:
 - Better overall safety, especially given the curvilinear alignment of Kuhio Hwy.;
 - Improved safety and convenience of crossing for pedestrians and bicyclists to and from Ke Ala Hele Makalae (shared use path); and
 - Possible reduced bridge width due to there being no need to provide left turn and right turn storage lanes and associated tapers.
4. Due to the presence of Ke Ala Hele Makalae (shared use path), there is no need for sidewalks on this bridge. Therefore, the existing deck width may be sufficient to provide adequate travel lanes and shoulders, if it is structurally feasible to remove the sidewalks and replace them with shoulders. We recognize that the structure may be nearing the end of its service life, but it might be useful to evaluate an option that retains the existing structure and converts the sidewalks to paved shoulders.

Thank you for the opportunity to review and comment on the Fact Sheets for these three projects. We wish to remain on your mailing list to continue participating in the environmental review process. If you have any questions or need additional information, please feel free to contact Stanford Iwamoto, Engineering Division at (808) 241-4896.

Sincerely,



MICHAEL MOULE, P.E.
Chief, Engineering Division

SI/MM

Copy to: J. Michael Will, FHWA, Central Federal Lands Highway Division
Design and Permitting
County Engineer



U.S. Department
of Transportation
**Federal Highway
Administration**

Central Federal Lands Highway Division

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Michael.Will@dot.gov

December 7, 2015

In Reply Refer To:
HFPM-16

TO: MICHAEL MOULE, P.E.
CHIEF, ENGINEERING DIVISION
DEPARTMENT OF PUBLIC WORKS
4444 RICE STREET, SUITE 275
LIHUE, HI 96766

FROM: J. MICHAEL WILL, P.E.
PROJECT MANAGER

SUBJECT: PRE-ASSESSMENT CONSULTATION
HAWAII BRIDGE PROGRAM, KAUAI PROJECTS
HANAPEPE RIVER BRIDGE
BRIDGE 7E
KAPAA STREAM BRIDGE

Dear Mr. Moule:

Thank you for pre-assessment comments on the subject projects transmitted by letter dated May 6, 2015. We offer the following responses in the order presented in your letter:

Hanapepe

1. Hydraulic analysis is being conducted for Hanapepe River Bridge. Project engineers will coordinate with the County to ensure that the project complies with requirements of the floodplain management program.
2. The Draft Environmental Assessment (DEA) will discuss construction-related traffic impacts.

Bridge 7E

1. Bridge 7E was constructed in 1933.

Kapaa

1. Hydraulic analysis is being conducted for Kapaa Stream Bridge. Project engineers will coordinate with the County to ensure that the project complies with requirements of the floodplain management program.
2. The DEA will discuss construction-related traffic impacts.

3. The roundabout option is being evaluated. Alternatives are being assessed from multiple perspectives, including safety, performance, environmental impacts, constructability, operations and maintenance, and cost.

4. We acknowledge your comment about using the shared use path for pedestrian travel. In evaluating rehabilitation of the existing structure, we note that the bridge is nearing the end of its service life. It is functionally obsolete, has substandard load carrying capacity, does not meet current seismic requirements, and is identified as scour critical. Therefore, we are leaning toward replacing the bridge as rehabilitation would necessitate modifying bridge substructure, superstructure, and railings to meet current AASHTO design standards.

We appreciate your participation in the environmental review process. A copy of the DEA will be sent to your office when available for public review and comment. If you have any questions, please contact me at (720) 963-3647, or by email at Michael.will@dot.gov.

Sincerely yours,



J. Michael Will, P.E.
Project Manager

Cc:

Christine Yamasaki, HDOT
Kevin Ito, HDOT
Nicole Winterton, CFLHD
Kathleen Chu, CH2M HILL