Draft Environmental Assessment, Pursuant to
Hawai‘i Revised Statutes, Chapter 343, Environmental Impact Statement Law

Leeward Bikeway

Federal Aid Project No. STP-BW-0300(8)
(Incorporating the Betty Nagamine Bliss Memorial Overlook
Pearl Harbor National Wildlife Refuge, District of ‘Ewa, O‘ahu, Hawai‘i)
Districts of Wai‘anae and ‘Ewa, O‘ahu, Hawai‘i

October 2010

Prepared For:
Department of Transportation
Highways Division
Kakuhihewa Building, Room 688
601 Kamokila Boulevard
Kapolei, Hawai‘i 96707

Prepared By:
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1-21655-00P

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Pursuant to HRS, Chapter 343

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Abbreviations

AASHTO	American Association of State Highway and Transportation Officials
A/C	Asphalt Concrete
ADA	Americans with Disabilities Act
ADAAG	Americans with Disabilities Act Accessibility Guidelines
ANSI	American National Standards Institute
APE	Area of Potential Effect
AREA	American Railway Engineering Association
BMPs	Best Management Practices
BPH	Bike Plan Hawai‘i
BPNAS BRAC	Barbers Point Naval Air Station Base Realignment and Closure
CDUA	Conservation District Use Application
CDUP	Conservation District Use Permit
CFR	Code of Federal Regulations
CCH	City & County of Honolulu
CO	Carbon monoxide
CO^2	Carbon dioxide
CWA	Clean Water Act
CWB	Clean Water Branch, State Department of Health
CWRM	Commission on Water Resource Management
CZMA	Coastal Zone Management Act
CZMP	Coastal Zone Management Program
CCH/DPP	City & County of Honolulu, Department of Planning and Permitting
COSCP	Central O‘ahu Sustainable Communities Plan
CWA	Clean Water Act of 1972, as amended

CWB	Clean Water Branch, State Department of Health
CZM	Coastal Zone Management
DA	Department of the Army
DLNR	State Department of Land and Natural Resources
DOFAW	Division of Forestry and Wildlife, DLNR
DOH	State Department of Health
HDOT	State Department of Transportation
DEA	Draft Environmental Assessment
DPP	Department of Planning and Permitting, City & County of Honolulu
DPR	Department of Parks and Recreation, City & County of Honolulu
DSP	Division of State Parks, State Department of Land and Natural Resources
EA	Environmental Assessment
EDP	ʻEwa Development Plan
EO	Executive Order
EPA	Environmental Protection Agency
ESA	Endangered Species Act
ESQD	Explosive Safety Quantity Distance
FEA	Final Environmental Assessment
FEMA	Federal Emergency Management Agency
FIRM	Flood Rate Insurance Map
FHWA	Federal Highway Administration
FONSI	Finding of No Significant Impact
GP	General Plan, City and County of Honolulu
HAR	Hawaiʻi Administrative Rules
HECO	Hawaiian Electric Company

HRS	Hawai‘i Revised Statutes or Hawaiian Railway Society
IARII	International Archaeological Research Institute, Inc.
LWCF	Land and Water Conservation Fund
MOU	Memorandum of Understanding
NEPA	National Environmental Policy Act
NFIP	National Flood Insurance Program
NHPA	National Historic Preservation Act
NMFS	National Marine Fisheries Service
NOI	Notice of Intent to discharge under NPDES regulations
NPDES	National Pollutant Discharge Elimination System
NRCS	Natural Resources Conservation Service
OIBC	O‘ahu Island Burial Council
OR&L	O‘ahu Railroad and Land Company
PHNWR	Pearl Harbor National Wildlife Refuge
RHA	Rivers and Harbors Act of 1899
ROH	Revised Ordinances of Honolulu
ROW	Right-of-Way
SHPD	State Historic Preservation Division, DLNR
SHPO	State Historic Preservation Officer, DLNR
SLH	Session Laws of Hawaii
SMA	Special Management Area
SMAUP	Special Management Area Use Permit
SOBA	Southern O‘ahu Basal Aquifer
SSV	Shoreline Setback Variance
UBC	Uniform Building Code

USACE	U. S. Army Corps of Engineers
USC	United States Code
USDA	U. S. Department of Agriculture
USFWS	U. S. Fish & Wildlife Service
USGS	U. S. Geological Survey
WQC	Water Quality Certification

Section 1
Project Summary

Project Name	**Leeward Bikeway, Federal Aid Project No. STP-BW-0300(8), Districts of Waiʻanae and ʻEwa, Oʻahu, Hawaiʻi (Incorporating the Betty Nagamine Bliss Memorial Overlook, Pearl Harbor National Wildlife Refuge, District of ʻEwa, Oʻahu, Hawaiʻi)**
Applicant	State of Hawaiʻi, Department of Transportation
Accepting Authority	State of Hawaiʻi, Department of Transportation
Location	ʻEwa and Waiʻanae Districts, Oʻahu, Hawaiʻi
Tax Map Key	(1) 8-9-1; 8-7-08; 8-9-06; 9-3-15,16,17; 9-3-01; 9-4-02; 9-4-01
Existing Uses	Various (vacant, undeveloped, utility corridor, bikeway, railway, wildlife refuge, and other miscellaneous uses)
Landowners	Railroad Right-of-Way: State of Hawaiʻi, Department of Transportation; and Pearl Harbor National Wildlife Refuge: U. S. Navy
Project Description	Construction of bikeway from Lualualei Naval Road (Nānākuli) to the vicinity of Waipiʻo Access Road (Waipahu) and an overlook at the Honoʻuliʻuli Unit of the Pearl Harbor National Wildlife Refuge. Improvements include construction of a 9-10' wide bikeway, replacement of substandard bridges, relocation of utility lines, and, as required, fencing, signage and roadway striping.
State Land Use	Urban and Agriculture
Zoning	F-1 (Military and Federal), Agriculture
Permits and Approvals that May be Required*	Federal *Dept. of the Army, Corps of Engineers* – Sect. 404 and Sect. 10) State of Hawaiʻi *Department of Health* – Noise Permit, NPDES & Sect. 401 WQC *Department of Business, Economic Development and Tourism, Office of Planning* – CZM Federal Consistency Review *Department of Transportation* – Plan Review *Department of Land and Natural Resources* *State Historic Preservation Office* – Section 106 consultation *Commission on Water Resources Management* – Stream Channel Alteration Permit (for Phase 2 bridges) City and County of Honolulu *Department of Planning and Permitting* – Grading Permit, Building Permit, and Special Management Area Permit * Permits and approvals for the Betty Nagamine Bliss Memorial Overlook will be pursued by USFWS in a separate effort.

Section 2
Project Description

2.1 Project Background and Context

2.1.1 Leeward Bikeway

The State of Hawai‘i, Department of Transportation, Highways Division (HDOT), proposes to construct the Leeward Bikeway (Bikeway), extending from Lualualei Naval Road in Nānākuli on the Wai‘anae Coast, through the ‘Ewa Plain, to the vicinity of Waipi‘o Point Access Road in Waipahu. The construction of the Leeward Bikeway is in response to the 1980 transfer of title of an approximately 14-mile long railroad right-of-way (ROW) from the Federal government to the State of Hawai‘i.

The proposed Bikeway will be constructed in two phases:

> ***Phase 1*** of the project will result in a continuous bikeway facility from the Hawaiian Railway Society (HRS) Station (in ‘Ewa) eastward to the vicinity of Waipi‘o Point Access Road where it will adjoin the existing Pearl Harbor Historic Trail. Also included in Phase 1 is the construction of the Betty Nagamine Bliss Memorial Overlook (Overlook) at the Hono‘uli‘uli Unit of the Pearl Harbor National Wildlife Refuge (PHNWR) in West Loch.
>
> ***Phase 2*** will encompass the area in which train operations of the HRS are active, from ‘Ewa to Kahe Point, and northward to Lualualei Naval Road in Nānākuli. Included in the Leeward Bikeway alignment, but to be built under a separate HDOT project, is the Farrington Highway segment between Nānākuli Stream and Helelua Street in Nānākuli.

The Bikeway is planned as a dedicated, shared use path primarily for pedestrians and bicyclists. The mostly 9- to 10-foot wide, asphalt concrete facility will be separated from vehicular traffic except where it crosses existing roadways. In addition to new construction, the proposed project will reconstruct an existing City and County of Honolulu (CCH) bike path, between Waipahu Depot Road and the vicinity of Waipi‘o Point Access Road, and connect to either end of the existing West Loch Bike Path.

The Bikeway is intended to share the 40-foot wide railroad ROW with current and planned restoration of the railway by the HRS. The tracks between the HRS Station in ‘Ewa, near Renton Road, and Kahe Point in Nānākuli are currently used by the HRS to operate 90-minute long, education-oriented train rides.

2.1.2 Betty Nagamine Bliss Memorial Overlook

The PHNWR consists of three units: Hono‘uli‘uli, located on the West Loch of Pearl Harbor (36.5 acres), Waiawa, located on the Middle Loch (24.5 acres), and Kalaeloa, in ‘Ewa (37 acres). The three units were made part of the PHNWR as mitigation for the loss of wildlife habitat resulting from the creation of the Honolulu International Airport Reef Runway. Construction of the runway required the filling of valuable shorebird habitat in Ke‘ehi Lagoon. Betty Nagamine, a teacher at McKinley High School and a volunteer with the Hawai‘i Audubon Society, met with Herman Bliss of the Federal Aviation Administration to discuss this loss of habitat. At her

urging, Mr. Bliss contacted the U. S. Department of the Navy, the State of Hawai‘i, and the U. S. Fish and Wildlife Service (USFWS), to find suitable and comparable replacement habitat for native shorebirds and wetland waterbirds including four species of endangered Hawaiian waterbirds. The PHNWR was created in 1976 as a result.

The USFWS is proposing to establish the Overlook at the PHNWR's Hono‘uli‘uli Unit where the public can learn about the establishment of the PHNWR and the resources it serves. The preferred plan will consist of a raised boardwalk with two platforms overlooking West Loch and the Hono‘uli‘uli Unit. The facility will be joined via an access trail to the existing West Loch Bike Path.

The Overlook is to be paid for by the HDOT and Federal Highway Administration (FHWA) and constructed by HDOT as part of Phase 1 of the Leeward Bikeway. The Overlook project is to be coordinated with the USFWS and the U. S. Department of the Navy (as landowner) based on a Memorandum of Understanding (MOU) executed in 2003 between the HDOT and USFWS for cooperation on this project.

The relationship of the Overlook project to Federal National Environmental Policy Act (NEPA) and Hawai‘i Revised Statutes (HRS), Chapter 343, Environmental Impact Statement law, is as follows: (1) The USFWS, the proponent for the Betty Bliss Nagamine Memorial Overlook project, is filing a NEPA Categorical Exclusion for the project; and (2) The Betty Bliss Nagamine Memorial Overlook project will be described as an accessory project to the Leeward Bikeway under HRS, Chapter 343, under the EIS environmental disclosure provisions of the law.

2.1.3 Relation of This Project to Farrington Highway Intersection Improvements Project

HDOT is providing the design, environmental documentation, permitting and construction of the Bikeway segment on Farrington Highway between Nānākuli Stream and Helelua Street under a separate project entitled: *Farrington Highway Intersection Improvements at Haleakalā Avenue and Nānākuli Avenue* (Farrington Highway Nānākuli Intersection Project). Coordination is needed with the Leeward Bikeway project due to overlap of work activities.

2.2 Project Location

The proposed project is located in the ‘Ewa and Wai‘anae Districts of O‘ahu, on the south coast of the Island of O‘ahu (**Figure 1**). The PHNWR is located along the West Loch of Pearl Harbor (**Figure 2**).

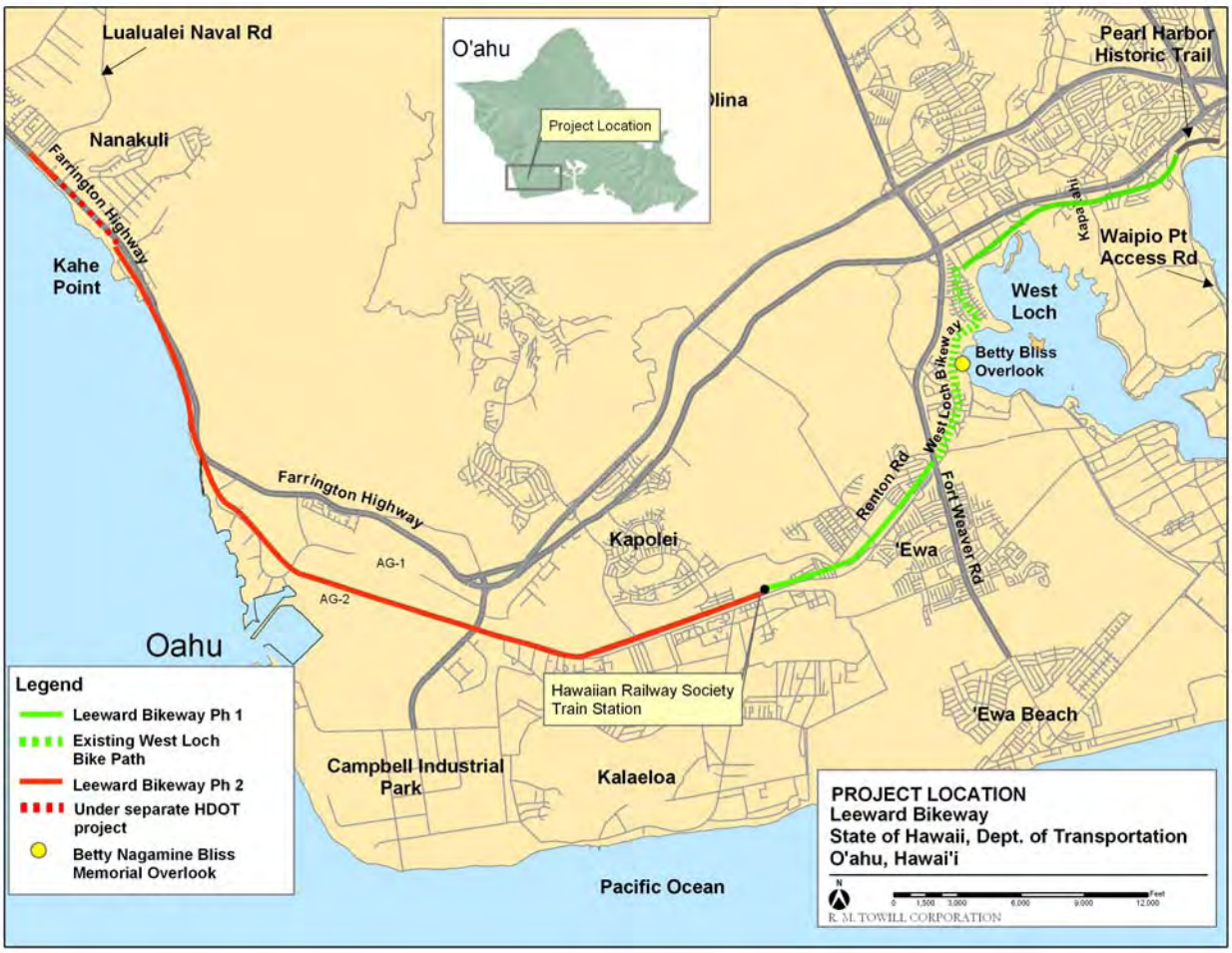

Figure 1. Project Location

Figure 2. Pearl Harbor National Wildlife Refuge and Betty Nagamine Bliss Memorial Overlook

2.3 Project Purpose and Need

The purpose of the project is to create an alternative transportation mode in Leeward Oʻahu by constructing the approximately 14-mile long Leeward Bikeway that extends from Lualualei Naval Road in Nānākuli on the Waiʻanae Coast, through the ʻEwa Plain, to the vicinity of Waipiʻo Point Access Road in Waipahu. The construction of this project will fulfill a legal requirement in response to a 1980 transfer of title to the former Oʻahu Railroad and Land Company (OR&L) Railroad ROW from the Federal government to the State of Hawaiʻi.

There are two related actions:

(1) The Betty Nagamine Bliss Memorial Overlook will provide a new wildlife viewing area along a previously inaccessible portion of the West Loch shoreline within the Pearl Harbor. The Overlook project is the result of a 2003 MOU between the USFWS and HDOT for cooperation on this project.

(2) The Farrington Highway Nānākuli Intersection Project is a separate action involving intersection improvements between Haleakalā Avenue and Nānākuli Avenue. Because the project will construct a portion of the Leeward Bikeway, coordination and coverage of the affected area of the Bikeway is being provided.

The Leeward Bikeway and the associated projects described above represent a multi-agency, State, and Federal effort to promote a new transportation, recreational, and educational resource that is intended to benefit residents and visitors.

2.3.1 Leeward Bikeway

The Leeward Bikeway will serve as a regional recreational and fitness amenity that supports transportation alternatives to the use of the automobile. The Bikeway will benefit residents and visitors by connecting residential communities, resorts, public schools, commercial centers, and parks. When complete, the Bikeway will provide the region with a continuous, dedicated Pearl Harbor to Nānākuli bicycling and pedestrian path using a combination of new construction and the linking or reconstruction of existing bike paths.

The reasons for supporting the Leeward Bikeway are summarized as follows:

1. HDOT is committed to constructing the Leeward Bikeway to fulfill the requirements of the 1980 deed to the former OR&L ROW and to ensure continued state ownership.
2. There is no regional bikeway facility linking Central and West Oʻahu and the schools, parks, and points of interest along the way.
3. Existing bikeway segments traverse part of the area but are not linked to create a continuous, uninterrupted bikeway facility.
4. The State of Hawaiʻi needs to reduce dependency on motor vehicles for transportation. Fitness gained from bicycling and walking has proven health benefits.

HDOT is required by a provision of the deed transferring title to the former OR&L ROW from the Federal government to utilize the transferred land for highway purposes, i.e., the development of “bicycle lanes or paths and pedestrian walkways.” The deed further stipulates

that all provisions of Federal laws and regulations which protect archaeological, historic, and cultural resources will be applicable to the use of the land.

The Bikeway project is designed to facilitate a reduction in dependency on the use of motor vehicles along the approximately 14-mile long alignment. The planned Bikeway will be located along relatively flat terrain along the ʻEwa Plain and include a scenic section of coastline. Health benefits for residents and visitors from bicycling include improved cardiovascular function, the development of muscle tone, and improved respiratory function.

The area of the proposed project includes the West Loch Bike Path, which functions as an isolated bicycling facility without connection to a continuous regional bikeway. The proposed project will incorporate the West Loch Bike Path to enable improved continuity to ʻEwa and Nānākuli to the west, and the Pearl Harbor Historic Trail, to the east. [Note: The Pearl Harbor Historic Trail Master Plan includes the entire former OR&L ROW, including the Leeward Bikeway project area and the existing West Loch Bike Path, plus additional bikeway facilities east of the vicinity of Waipiʻo Point Access Road.]

2.3.2 Betty Nagamine Bliss Memorial Overlook

The purpose of the PHNWR is to conserve four species of endangered Hawaiian waterbirds and to provide compatible public use programs that include wildlife observation, photography, environmental education, and interpretation. Currently, except for one elementary school program, the PHNWR Honoʻuliʻuli Unit is not accessible to the public. The proposed Overlook will be situated within the Honoʻuliʻuli Unit of the PHNWR.

The need for the Overlook is summarized as follows:

1. The PHNWR Honoʻuliʻuli Unit is not accessible to the public and visitor surveys indicate that very few opportunities exist on Oʻahu for the public to view native birds. The area of the project within the Pearl Harbor Historic Trail Master Plan supports the establishment of viewing areas along the trail.
2. The USFWS considers providing and naming an Overlook after Betty Nagamine Bliss is an appropriate way to recognize this individual's success in obtaining lands for native bird habitat to compensate for habitat loss resulting from the Honolulu International Airport Reef Runway.
3. The USFWS seeks to gain public support for Refuge programs which are devoted to the protection and recovery of endangered, threatened, and other rare wildlife. Via the Overlook, the public will be provided with the opportunity to learn about the wetland resources of the PHNWR Honoʻuliʻuli, an Urban Refuge, which is expected to facilitate support for the program.
4. Mangroves and other noxious plants have grown around the shoreline of Pearl Harbor and obscure viewplanes across West Loch to the Waiʻanae Mountains. Not only does this overgrowth block scenic views, it also decreases the amount of useable habitat for native birds. Part of the Overlook project will involve clearing approximately 20, 000 square feet (SF) of mangroves and 8,700 SF of kiawe (USFWS, 2010).

According to the USFWS, an estimated 5,000 visitors a year would have the opportunity to view the Refuge and its resources from the proposed Overlook. The facility will provide new opportunities for wildlife observation, photography, environmental education, and interpretation

at Pearl Harbor. Access to this Refuge Unit and the Overlook is limited to foot and bicycle traffic along the Pearl Harbor Historic Trail/West Loch bike paths and the former OR&L right-of-way. As indicated above, in addition to the direct benefits that the Overlook will have for the public and community, the proposed project will include the removal of invasive mangroves which have encroached on available foraging habitat for Hawaiian stilts and migratory shore birds (USFWS, 2010).

The proposed Overlook is needed to provide the public with the opportunity to learn about the wetland resources of the Honoʻuliʻuli Unit. Through this learning experience the USFWS expects to gain public support for Refuge programs devoted to the protection and recovery of endangered, threatened, and other rare wildlife. The Overlook will provide the public with a new facility from which to view native avifauna. The proposed Overlook is also located in an area that supports some of the best and easily accessible native avifauna viewing locations on Oʻahu. Overlooks along the West Loch coastline have gained public support as documented in the Pearl Harbor Historic Trail Master Plan (USFWS, 2010).

The Overlook will be connected to and accessible to users of the Leeward Bikeway, Phase 1, and will fulfill the requirements of the 2003 MOU between the HDOT and the USFWS for cooperation in this project. In addition to public benefits related to USFWS Refuge programs, the location of the Overlook provides a unique opportunity for the public to view West Loch. There are opportunities for interpretation of historic events. The U. S. Navy and the National Park Service have expressed interest in providing interpretive panels at the Overlook.

2.3.3 Development of the Leeward Bikeway at This Time

Since publication of the *Final Environmental Assessment for the Leeward Bikeway, OR&L Right-of-Way, ʻEwa and Waiʻanae Districts, Oʻahu* in 2000 (Earth Tech, 2000), other major State and City and County of Honolulu priorities and roadway development activities in ʻEwa were developed to meet the growing demand for highway infrastructure. These projects included the North-South Road (Kualakai Parkway), Kalaeloa Boulevard Improvements, Kamokila Boulevard Improvements, Fort Weaver Road Improvements, Makakilo Drive Extension, and other activities such as those related to the Base Realignment and Closure (BRAC) of the Barbers Point Naval Air Station (BPNAS). Although the proposed Leeward Bikeway was not slated for development during this period, any nearby development was mandated to exclude the former OR&L ROW to keep it intact for the full alignment that will be used by the Bikeway.

2.4 Purpose of the Supplemental Draft EA

The purpose of this document is to address the regulatory requirements of: HRS, Chapter 343, Environmental Impact Statement Law; and Hawaiʻi Administrative Rules (HAR), Chapter 11-200, Environmental Impact Statement Rules.

The triggers requiring the preparation of this Supplemental Draft EA include: (1) the use of State lands and/or funds for construction of the project; and (2) the location of parts of the project within the Special Management Area administered by the City & County of Honolulu.

The information obtained from consultation with governmental agencies and the public as a result of the preparation of this HRS, Chapter 343 document will be used to facilitate the preparation of a NEPA Environmental Assessment. The publication of the NEPA Environmental

Assessment will coincide with the publication of the HRS, Chapter 343, Supplemental Final EA for this project.

In 2000, the HDOT published the *Final Environmental Assessment for the Leeward Bikeway, OR&L Right-of-Way, 'Ewa and Wai'anae Districts, O'ahu*[1]. Following the Finding of No Significant Impact (FONSI) by HDOT, the project was delayed for approximately ten years. This Supplemental Draft EA substantially represents the same project which received a Federal and state FONSI in 2000, and updates the project's design alternatives and reflects other relevant changes since 2000. It adds environmental documentation under HRS, Chapter 343, for the Betty Nagamine Bliss Memorial Overloook[2], and identifies the Farrington Highway Nānākuli Intersection Project as a separate action providing for the completion of a portion of the Leeward Bikeway.

2.5 Preferred Alternative – Leeward Bikeway

2.5.1 Overview

The HDOT proposes to construct the Leeward Bikeway within the 40-foot ROW of the former OR&L Railroad in two phases. The Farrington Highway Nānākuli Intersection Project will involve the design and construction of a portion of the Leeward Bikeway between Nānākuli Stream and Helelua Street in Nānākuli.

2.5.2 Design Objectives and Guidelines – Leeward Bikeway

The design objective for this project is to establish a connection with the projects described above in a continuous, Americans with Disability Act (ADA)-accessible bikeway separated from motor vehicular traffic to accommodate safe pedestrian and bicycling use. Phase 1 is currently under preliminary engineering design and Phase 2 is in conceptual design. The design for the Leeward Bikeway is planned to be consistent with the following standards and guidelines:

- American Association of State Highway and Transportation Officials (AASHTO) Guide for the Development of Bicycle Facilities, 1999
- State of Hawai'i, HDOT Highways Division, Standard Specifications for Road and Bridge Construction
- Current edition of the American Railway Engineering Association (AREA) Manual for Railway Engineering
- Americans with Disabilities Act Accessibility Guidelines (ADAAG), amended in 2002

[1] The 2000 FEA may be found on the Office of Environmental Quality Control web site at the following URL address: http://oeqc.doh.hawaii.gov/Shared%20Documents/EA_and_EIS_Online_Library/Oahu/2000s/2000-08-23-OA-FEA-LEEWARD-BIKEWAY.pdf

[2] The USFWS proposes to address NEPA environmental documentation for this project with the filing of a Categorical Exclusion. Information for the Overlook that is provided in this EA is intended to address the requirements of HRS, Chapter 343.

2.5.3 Preferred Alternative – Leeward Bikeway

The preferred alternative design of the Bikeway will consist of a continuous, 9- to 10-foot wide, separated asphalt concrete bicycling and pedestrian use path. The project's scope of work includes clearing, grubbing, demolition, grading, installation of asphalt concrete pavement, bridge replacements, retaining walls, sidewalk connection, storm drainage improvements, utility and utility pole relocation, installation of erosion controls, and fencing. The major features and components of the project are summarized in **Table 1**.

Table 1. Leeward Bikeway Preferred Alternative
Federal Aid Project STP-BW-0300(8)

Characteristic	Phase 1 – Hawaiian Railway Society Train Station to Vicinity of Waipi'o Point Access Road	Phase 2 – Lualualei Naval Road to Hawaiian Railway Society Train Station	Total Project (as applicable)
Length of Bikeway	4.2 miles	8.3 miles	12.5 miles
Estimated Construction Cost	$8.3 million	$14.6 million	$22.9 million
Estimated Additional ROW Cost	To be determined (TBD)	TBD	
Construction Start (estimate)	July 2011	TBD	
Construction End (estimate)	May 2012	TBD	
Construction Duration (estimate)	9 months	TBD	
Additional Area to be Included (outside alignment)	Betty Nagamine Bliss Memorial Overlook, Pearl Harbor Project Cost: $375,000	None	$375K
Area to be Excluded from Design, Construction, Permitting and Consultation (within alignment)	Existing West Loch Bike Path	Area between Nānākuli Stream and Helelua Street in Nānākuli	
Area to be Cleared for Betty Nagamine Bliss Memorial Overlook	Approximately 20,000 square feet of mangrove and 8,700 square feet of kiawe will be removed as part of this project.		
Replacement of Existing Bikeways	CCH Bikeway between the vicinity of Waipi'o Point Access Road and Waipahu Depot Road	None	
Bridges (All bridge work involves demolition of existing bridges, where portions still exist, and construction of new bridges. Bridges will be built around existing utilities.)	1. Waikele Stream 2. Kapakahi Stream, including utility casing under bridge for Energy Corridor pipelines	1. Pili o Kahe Gulch 2. Keoneoio Gulch 3. Kahe Beach Park Crossing 4. Gulch 1/2 mile west of Kalaeloa Blvd 5. Gulch just east of Kalaeloa Blvd.	7 bridges
Retaining Walls	Total LF of Retaining Walls: 723	Total LF of Retaining Walls: 732	1,455 LF

Bikeway Design Features

The Bikeway will require several typical sections grouped according to the following conditions:

- Bikeway alone and within ROW (no railroad tracks or railway operations) (**Figure 3**)
- Bikeway with extant railroad tracks but no railway operations (**Figure 4**)
- Bikeway adjacent to railway operations (**Figure 5**)

In certain areas, slope easements will be required to accommodate the necessary design elements and clearance from train tracks and operations.

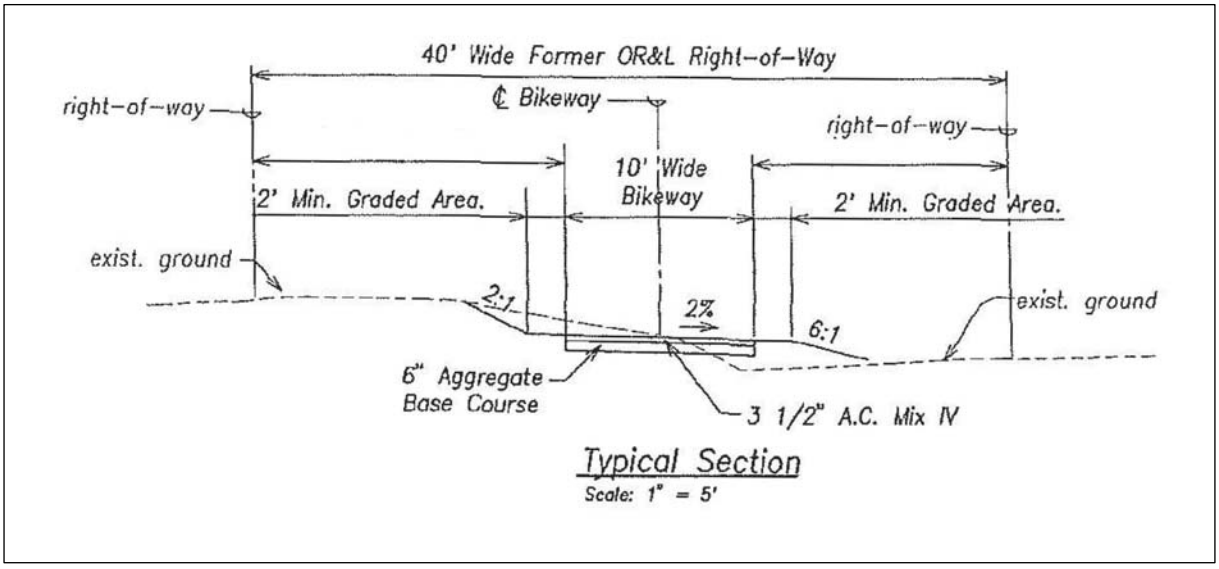

Figure 3. Bikeway Along and Within ROW (No railroad tracks or Hawaiian Railway Society operations)

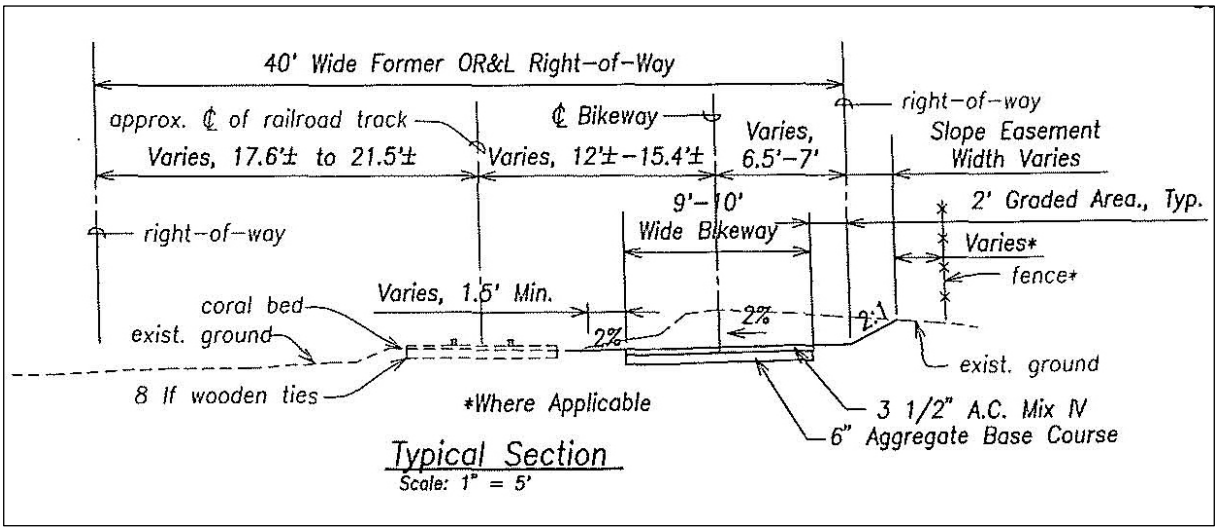

Figure 4. Bikeway with Extant Railroad Tracks but No Railway Operations

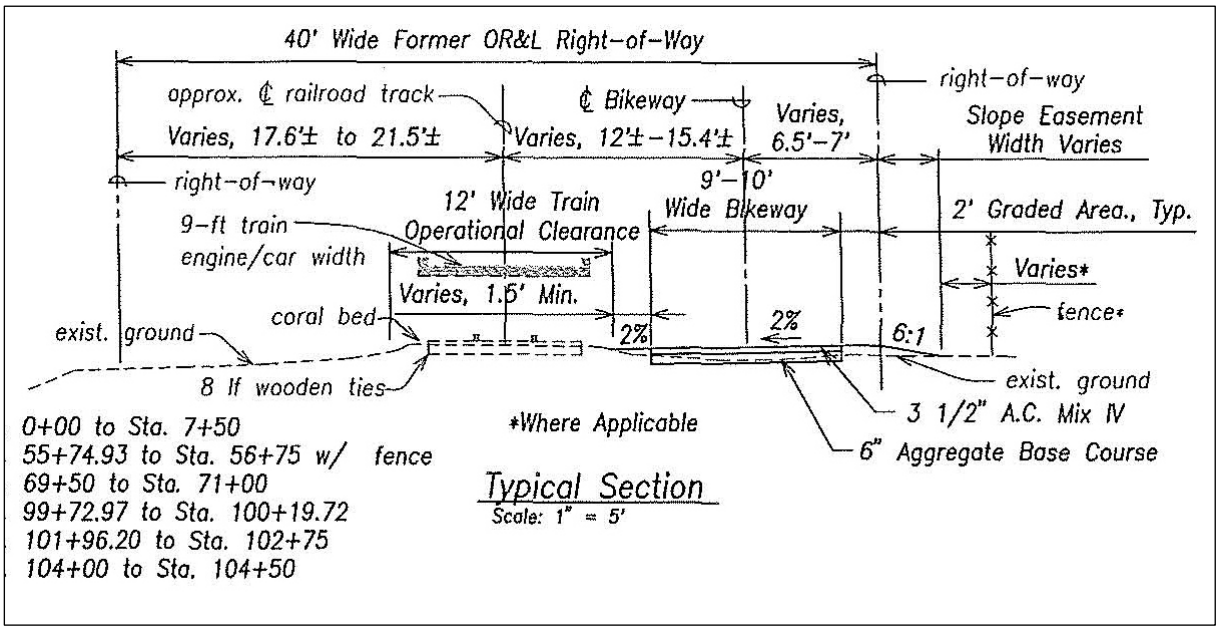

Figure 5. Bikeway with Extant Railroad Tracks with Railway Operations

The following steps are anticipated for the Leeward Bikeway construction:

Reconstruction of Existing CCH-Owned Bike Path (from Waipahu Depot Road to Waipi'o Point Access Road)

- Demolish existing bike path segment and remove demolition debris.
- Grade work area.
- Repave bikeway with A/C.
- Connect A/C pavement to existing sidewalks and bridges as needed.

Construction of New Segments of Bikeway

- Relocate telephone and electrical poles as needed.
- Grade work area.
- Pave bikeway with asphalt concrete.
- Connect A/C pavement to existing sidewalks and bridges as needed.
- Install concrete bollards as needed to protect Bikeway users from vehicular traffic and from railway usage.

Removal and Relocation of Existing Facilities

- Replace chain link fences, various locations.
- Remove and replace signs, various locations.
- Perform roadway striping, various locations.
- Remove and install electrical guy wires and guy poles and joint poles, various locations.
- Temporarily relocate utilities attached to bridges.
- Provide cement surface over existing drainage pipes for continuous riding surface.
- Install cement poles to protect Bikeway users from traffic and prevent motor vehicles from entering the path at various locations at roadway intersections.
- Remove railway tracks only in an area where small track remnants remain and are not useable for railroad conveyance. The tracks will be salvaged for reuse by the Hawaiian Railway Society.

Drainage

Existing railway drainage culverts will be used to the extent possible for the Bikeway. The HDOT will assess each drainage culvert on a case-by-case basis to determine if additional culverts are needed to aid drainage.

Landscaping

Landscaping will be limited to the grassing of open areas requiring protection from erosion. Open areas will be grassed and allowed to revegetate following construction activities. Irrigation is not planned to be required.

Bridges

Seven (7) bridges along the railroad ROW will be replaced in order to accommodate the Bikeway. **Table 2** summarizes the planned bridge replacements.

Figure 6 shows the location of the seven bridges listed in Table 2, Bridges to be Demolished and Replaced, Phase 1 and Phase 2.

Table 2. Bridges to be Demolished and Replaced, Phase 1 and Phase 2		
PHASE 1	Demolition of Existing Bridges or Remnants; Replacement Using Clear Span over Existing Abutments	Demolition of Existing Bridge or Remnants; Replacement with Piers in Stream Bed
Waikele Stream Railroad Bridge	X	
Kapakahi Stream Railroad Bridge	X	
PHASE 2	Demolition of Existing Bridges or Remnants; Replacement Using Clear Span over Existing Abutments	Demolition of Existing Bridge or Remnants; Replacement with Piers in Stream Bed
Eastern Crossing of Kalaeloa Boulevard	X	
Western Crossing of Kalaeloa Boulevard	X	
Kahe Beach Park Crossing		X
Keoneoio Gulch Railroad Bridge	X	
Pili o Kahe Gulch Railroad Bridge		X

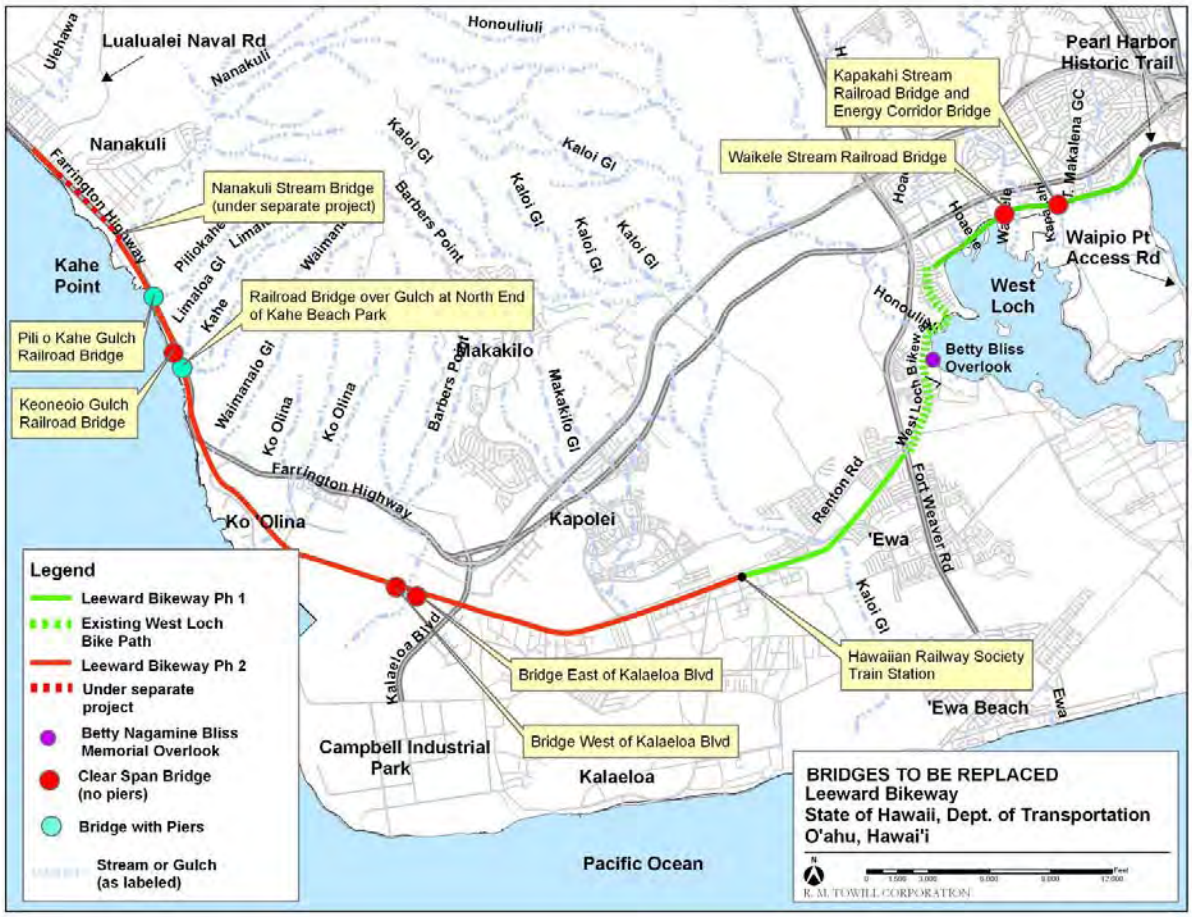

Figure 6. Bridges to be Replaced

Figure 7 shows a generalized version of the typical section for the bridges where bridging 'planks' are placed over the stream using existing bridge abutments.

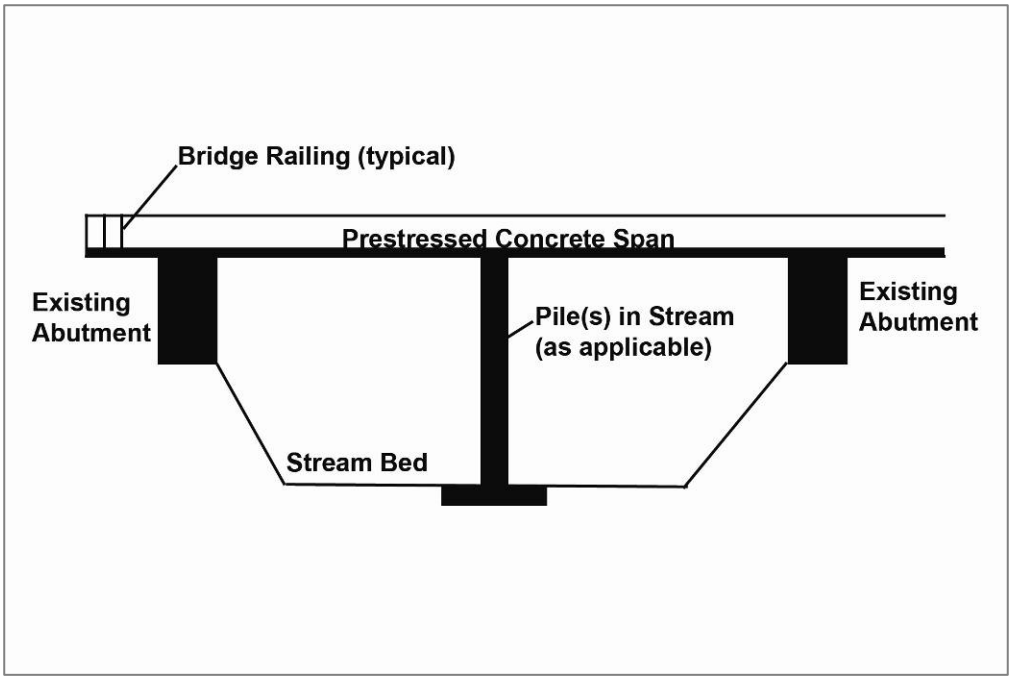

Figure 7. Generalized Bridge Replacement Typical Section (not to scale)

Kapakahi Stream Railroad Bridge Replacement (Phase 1)

The Kapakahi Stream Bridge (**Figure 8 and 9**) has been found to be deficient and requires demolition and replacement along a new alignment as part of Phase 1. The new concrete bridge will be a single clear span and will not alter the existing stream channel. The new bridge will be built to weight standards for shared use by pedestrians and bicyclists.

Waikele Stream Railroad Bridge Replacement (Phase 1)

The Waikele Stream Railroad Bridge (**Figure 10**) also requires demolition and replacement as part of Phase 1. In addition, Energy Corridor pipelines must be accommodated in a casing beneath the new bridge. The new concrete bridge will be a single clear span and will not enter or alter the existing stream channel.

Kapakahi Stream Railroad Bridge

Downstream View

View of Energy Corridor including pipelines

Figure 8. Kapakahi Stream Railroad Bridge and Environs, Existing Conditions (bridge found to be deficient and requires replacement along a new alignment within the stream)

View of downstream portion of Waikele Railroad Bridge

View across Waikele Railroad Bridge showing pipelines associated with the Energy Corridor

Figure 9. Waikele Stream Railroad Bridge and Environs, Existing Conditions (bridge found to be deficient and requires replacement along same alignment within the stream)

Railroad Bridge over Gulch near Kahe Point Beach Park Railroad Bridge (Phase 2)

This bridge will be a clear span over existing abutments. **Figure 10** provides photos of the existing railroad bridge remnants at this location.

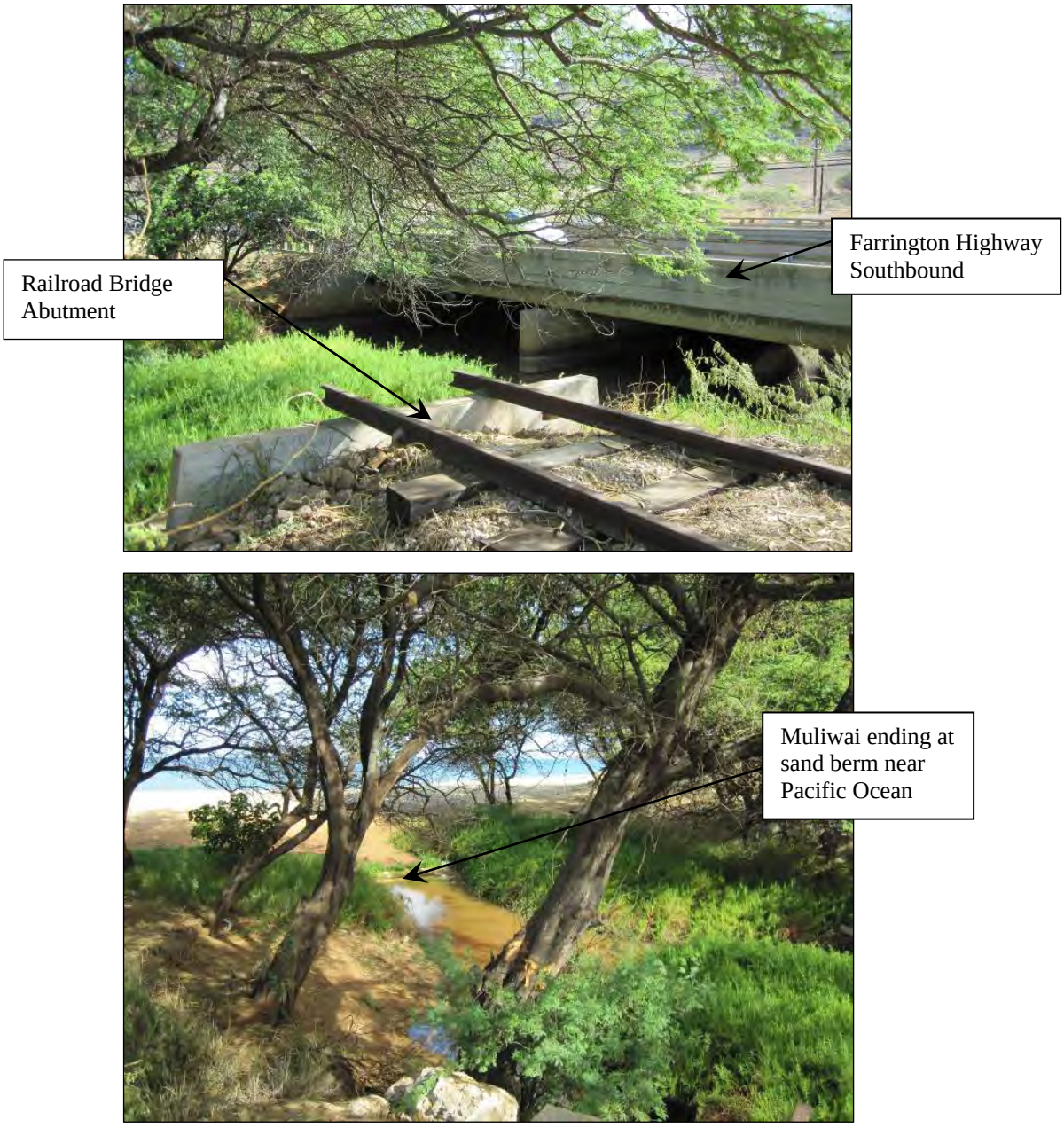

Figure 10. Railroad Bridge Over Gulch North of Kahe Point Beach Park

2.6 Alternatives Considered But Not Carried Forward – Leeward Bikeway

2.6.1 No Action and Delayed Action Alternatives – Leeward Bikeway

The "No Action" alternative would involve no further effort to provide a continuous, ADA-accessible bikeway facility separated from motor vehicle traffic to accommodate safe pedestrian and bicycle use in Leeward Oʻahu. Similar to taking no further action, the "Delayed Action" alternative would propose the construction of the project, but at a later date.

Under the No Action alternative, potential environmental impacts, such as changes to the landscape, would be averted and natural resources, human resources, and Bikeway development costs would be avoided.

Under the Delayed Action alternative, the project would be further delayed beyond the 10+ years it has been planned. The potential for environmental impacts associated with the project also would be further delayed. While the potential for environmental impacts and costs would be spared in the short term, long term effects would include higher development costs due to inflation and changes in environmental laws and regulations.

The "No Action" and "Delayed Action" alternatives for the Bikeway were rejected because 1) they would fail to address HDOT's objectives of constructing a continuous bikeway facility between Central Oʻahu and Nānākuli, and 2) they would fail to meet the access requirements of the 1980 deed transferring ownership of the former OR&L railway ROW to the State. Because both alternatives would fail to meet the access requirements of the deed, it is possible that a forfeiture of the parcel back to the Federal government could result. Because of this, both the No Action and Delayed Action alternatives are considered infeasible.

2.6.2 Construction Alternatives Considered but Not Carried Forward – Leeward Bikeway

Design alternatives involving the proposed Bikeway that were considered but not carried forward included the following:

Widened Bikeway Facility

A 14-foot wide bikeway was considered in lieu of the proposed 9-10 foot wide Preferred Alternative. However, train operations are located in the center of the 40-foot wide ROW and there would be insufficient space remaining to support a widened bikeway. Providing a minimum of 4 feet clearance between the edge of the bikeway and the train, the area remaining would be limited to a 9-10 foot wide bikeway with 2-foot shoulders.

Rehabilitation vs. Replacement of Existing Railroad Bridges

Renovation of the railroad bridges crossing over streams and gulches within the alignment was considered but rejected in favor of replacement. Existing railroad bridges are highly degraded. Repair options were considered but deemed infeasible due to complexity and difficulty of rehabilitation and significantly higher life cycle cost due to ongoing maintenance requirements. Wherever possible, clear span bridges capable of supporting a joint use bicycling and pedestrian path will be constructed. The use of clear spans would also avoid the potential for environmental impacts to the stream since no work will be required within the existing stream channels. However, in Phase 2, two gulch crossings, Keoneoio Gulch and Kahe Beach Park Crossing, will require footings within the respective stream beds.

Use of Highway Shoulder for Portions of Bike Facility

The shoulder of Farrington Highway at the Pili o Kahe Gulch crossing was considered for a portion of the project. However, this alternative was rejected, due to heavy traffic and high vehicular speeds along the highway. The use of the Farrington Highway shoulder would also require a significant change to the design of a portion of the Bikeway from a bicycling path to a bicycling lane. To maintain the designation of the Bikeway as a shared bicycling and pedestrian path, the facility will utilize the former OR&L railroad ROW throughout its alignment. This will require a new bridge crossing at Pili o Kahe Gulch and the construction of retaining walls to maintain the bikeway and bridge crossing.

Changing Train Operations to Accommodate the Bikeway

The Bikeway at the Hawaiian Railway Society Train Station/Museum was originally placed on the makai side of the HRS facility which would force relocation of the established train boarding area. In response to comments from the HRS, this scheme was rejected and the Bikeway design was rerouted to the mauka side of the tracks. The revised Bikeway location in this vicinity will avoid disruption to Hawaiian Railway Society operations and possible confusion for bicyclists and pedestrians.

Retention of All Existing Utility Poles

The alignment of the bikeway will require the relocation of utility poles in the ‘Ewa area. An alternative to relocating these poles would be to construct the Bikeway closer to the existing railroad tracks. This alternative was rejected due to the need to maintain a safe clearance distance between the Bikeway and the actively used railroad tracks.

2.7 Preferred Alternative – Betty Nagamine Bliss Memorial Overlook

The USFWS is proposing to establish the Overlook within the Hono‘uli‘uli Unit of the PHNWR (**Figure 11** and **Figure 12**). The Overlook will be the first facility of the PHNWR that offers the public the opportunity to learn about the establishment of the Refuge and the natural resources it serves (**Figure 13**). The preferred alternative involves a raised boardwalk with two platforms that provide a view of West Loch, the Wai‘anae Mountains, and the Hono‘uli‘uli Unit (**Figure 14** and **Figure 15**). The ramps and Overlook platform in the northeast corner of the Unit will be constructed with either treated lumber, constructed with treated lumber, manufactured composite, or a combination of the two materials (USFWS, 2010).

The shoreline areas of most of Pearl Harbor, including the Hono‘uli‘uli Unit of the Refuge, are now heavily vegetated with the red mangrove (*Rhizophora mangle*) which virtually eliminates nearshore mudflat habitat. Approximately 20,000 SF of mangrove and 8,700 SF of kiawe will be removed as part of the Overlook project to open up view planes to the Refuge and increase useable habitat.

The proposed overlook will be situated on Navy owned lands. A real estate agreement between the Navy and the project proponents may be required to be executed. The USFWS will work with the Navy to address and resolve any real estate and other siting issues, before any construction work begins.

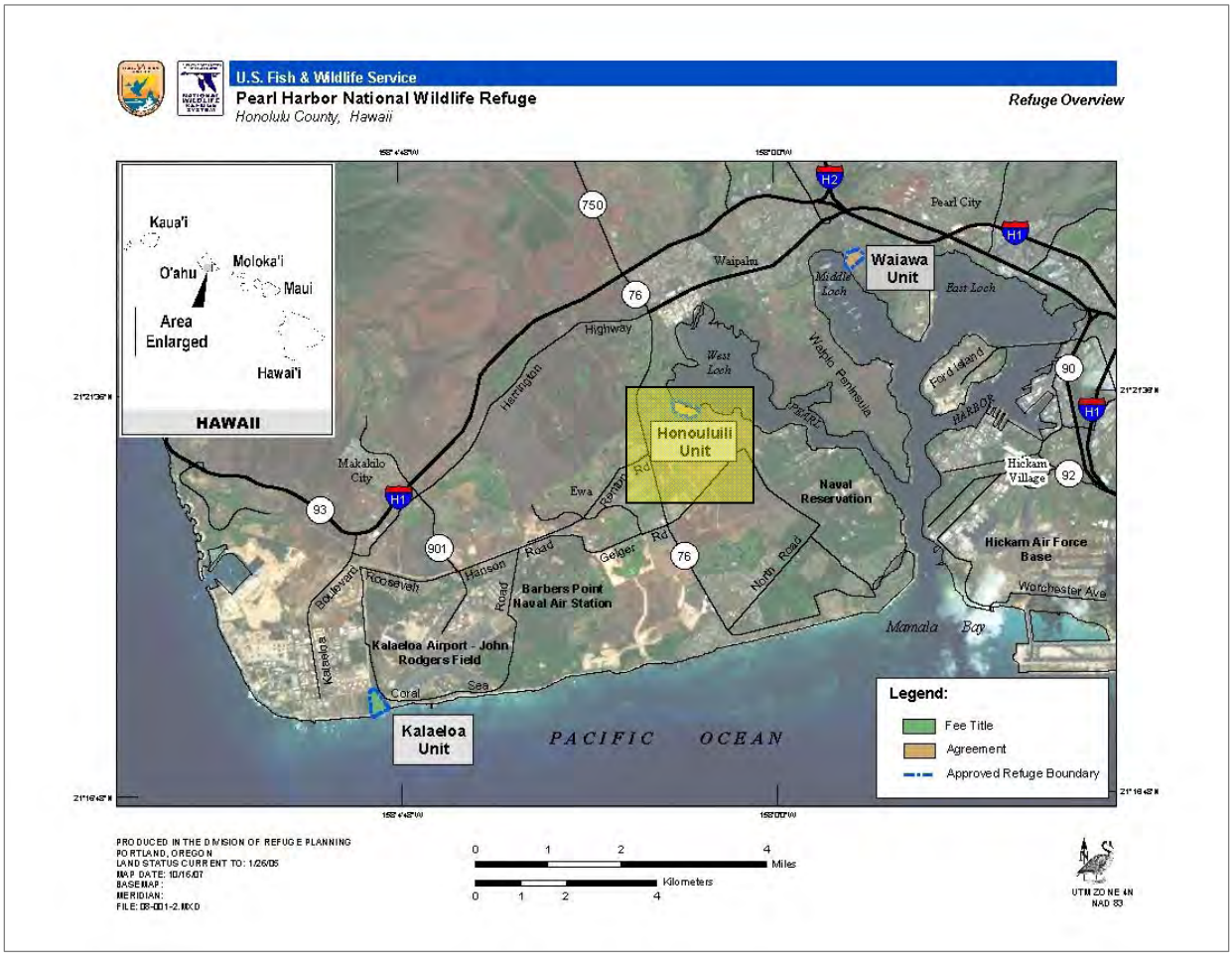

Figure 11. Pearl Harbor National Wildlife Refuge, with Hono‘uli‘uli Unit Highlighted

Figure 12. Hono‘uli‘uli Unit of PHNWR – Existing Conditions

Figure 13. PHNWR Honoʻuliʻuli Unit

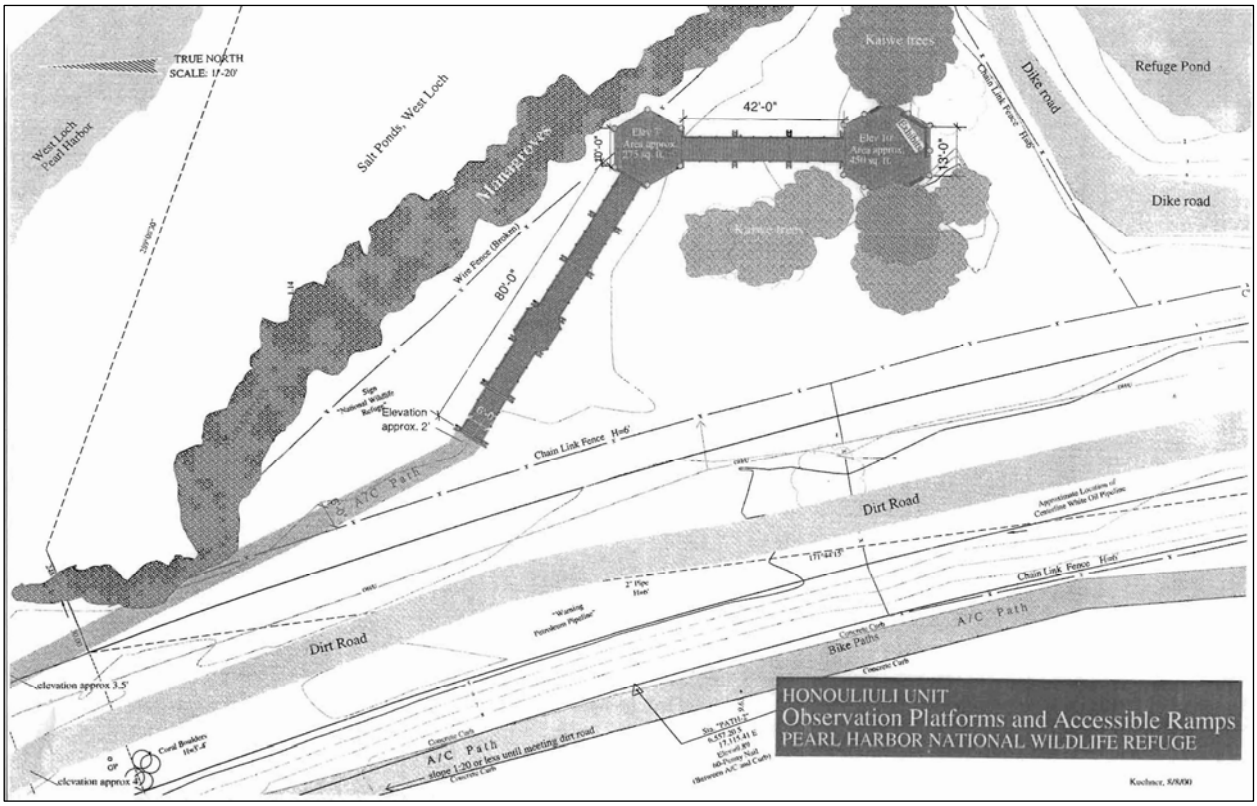

Figure 14. Schematic Plan, Betty Nagamine Bliss Memorial Overlook

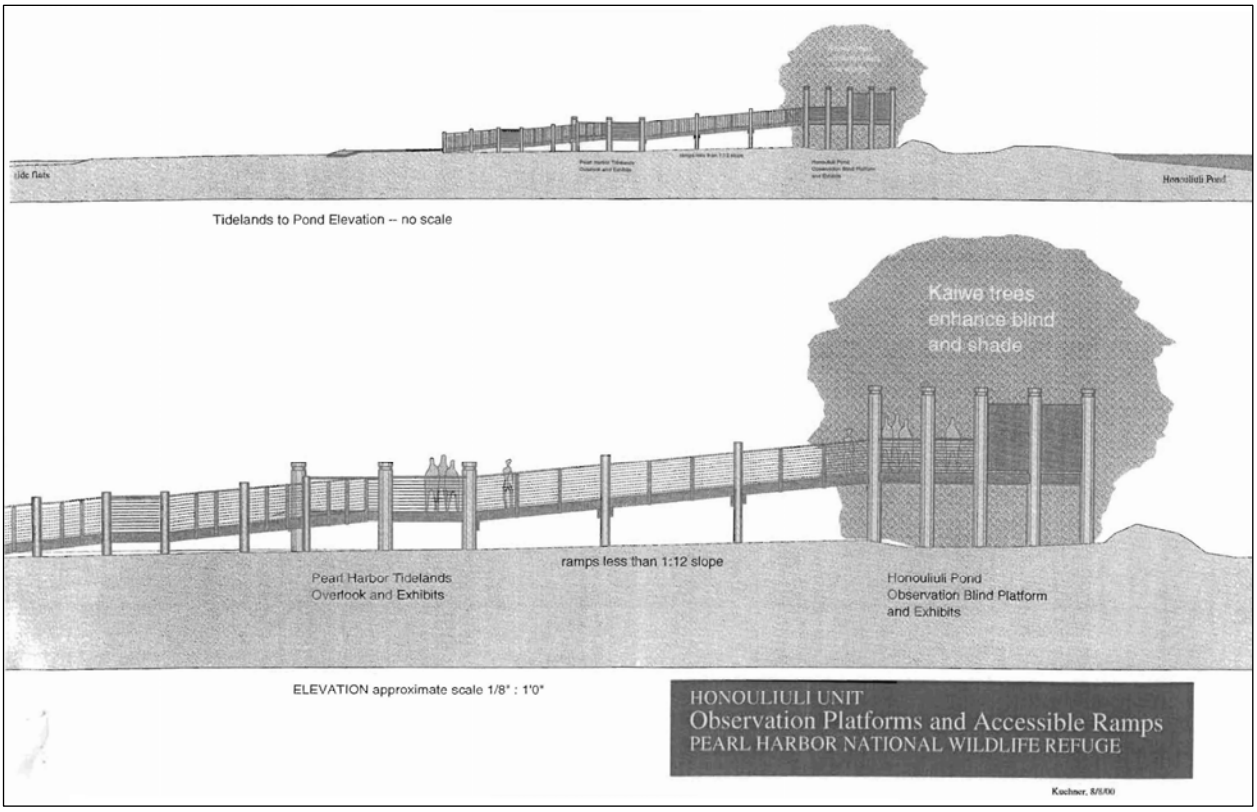

Figure 15. Conceptual Elevation of Observation Platform, Betty Nagamine Bliss Memorial Overlook

2.8 Alternatives Considered But Not Carried Forward – Betty Nagamine Bliss Memorial Overlook

2.8.1 No Action Alternative

The No Action alternative would involve no further action to design or construct the Betty Nagamine Bliss Memorial Overlook. The effort and cost to design and construct the facility would be avoided, but the objective of the USFWS to provide and improve wildlife observation, photography, environmental education, and interpretation at the PHNWR would fail to be achieved. Because the no action alternative does not accomplish the USFWS objective for the project it was rejected from further consideration.

2.8.2 Other Alternatives Considered but not Carried Forward

Areas within the Explosive Safety Quantity Distance (ESQD) Arc

Most of the Waipi‘o Peninsula, including the majority of the Hono‘uli‘uli Unit, is within the Explosive Safety Quantity Distance (ESQD) arc which emanates from the ammunition handling wharves at the West Loch Annex, Joint Base Pearl Harbor-Hickam. This arc represents hazard zones that are established by the Department of Defense (DOD) for various quantities and types of explosive used by the military. Minimum distances are prescribed for separating explosives

from inhabited structures (Inhabited Building Distance). The risks associated with the ESQD arcs (commonly referred to as "blast zones") that encumber the Honoʻuliʻuli Unit were determined by the Department of Defense Explosive Safety Board with responsibility to establish safety standards. This board has determined that no structures may be built in the area that is encumbered by the arc. (USFWS, 2010).

The USFWS selected the Preferred Alternative Overlook site within the Honoʻuliʻuli Unit, because it provided the best opportunity for the public to view and learn about the PHNWR and its resources in a safe manner consistent with the presence of the nearby ESQD arc.

Overlook at Waiawa Unit

The Waiawa Overlook alternative would be a raised platform at the northeast corner of the unit to allow the USFWS to interpret the resources of the Refuge in a manner that is compatible with the purposes of the Refuge and in keeping with the primary need to protect and recover native Hawaiian waterbirds. This alternative was rejected by the USFWS based on: (1) access to the Waiawa Unit would have more limitations than access to the Honoʻuliʻuli Unit; and (2) viewplane and scenic views at this location are not as good as the preferred alternative site in the Honoʻuliʻuli Unit.

Additional Areas within the PHNWR Honoʻuliʻuli Unit

Several other alternatives were initially considered that were rejected due to their location within the U. S. Navy restrictions within the ESQD arc.

2.9 Project Schedule and Costs

2.9.1 Leeward Bikeway

Construction of Phase 1 of the proposed project is estimated to start in July 2011 and end in May 2012. The approximate timing for Phase 1 will be coordinated with the Farrington Highway Nānākuli Intersection Project, which will contribute project funds for a short segment of the Leeward Bikeway between Nānākuli Stream and Helelua Street.

The proposed development of Phase 2 has not yet been scheduled, but is expected to follow the construction of Phase 1.

Construction of Phase 1 is estimated to cost $8.3 million; Phase 2 is estimated at $14.6 million. An additional $5 million has been allowed for the acquisition of lands for new areas of ROW, for a total of approximately $28.0 million for the entire project. The HDOT and the FHWA are jointly funding the design and construction of the project.

2.9.2 Betty Nagamine Bliss Memorial Overlook

The USFWS anticipates the construction cost of the Betty Bliss Memorial Overlook at $375,000, which will be borne by HDOT and FHWA under the 2003 MOU. The approximate timing of construction is targeted for Phase 1 of the Bikeway project, which is estimated to extend from July 2011 to May 2012 (9 months total).

Section 3
Environmental Setting, Potential Effects and Proposed Mitigation Measures

This section describes the existing physical, biological, socioeconomic and infrastructure conditions related to the proposed project. The potential for adverse impacts associated with the project are examined and mitigation measures are identified to reduce or otherwise ameliorate the potential for impacts. The structure of this section is as follows:

3.1 Physical Environment

3.1.1 Climate

The Island of O‘ahu has a mild subtropical climate which is characterized by abundant sunshine, persistent northeast tradewinds, relatively constant temperatures and moderate humidity. Mean monthly temperatures range from an average 80° Fahrenheit (F) in the summer months, to 70° F during the winter, with night and day temperatures differing by an average of 17°. Extreme fluctuations in temperature are moderated by proximity to the ocean and temperatures of 80 degrees and higher are not uncommon throughout the year. The average annual rainfall for O‘ahu is approximately 24 inches while the average annual rainfall for the ‘Ewa Plain area is 19 inches, with most of the rainfall occurring between the months of October and April. The dryer months, May through September, average 0.6 inches per month. The wetter months, October through April, average 2.2 inches per month (World Climate, 2003). Average wind velocity in the area varies from 10 to 20 miles per hour (mph) (RMTC, 2009).

Potential Effects and Proposed Mitigation

The proposed project will not affect the climate of the region. The tradewinds, limited rainfall and favorable temperature conditions of the Bikeway alignment are anticipated to enhance and contribute to the public use of the proposed Bikeway. These climatic conditions will also contribute to the usage of the Overlook.

Potential Impacts of Alternatives

The proposed project and no alternative considered would affect the climate of the region.

3.1.2 Geology, Topography and Soils

Geology

The island of O‘ahu was created from two major shield volcano formations: the older, Wai‘anae Volcano, in the west and the larger and younger Ko‘olau Volcano in the east. Each experienced massive submarine landslides, the Wai‘anae Slump to the southwest and the Nu‘uanu Slide to

the northeast. The remnants of these volcanoes and landslides form two roughly parallel mountain ranges extending generally from the northwest to southeast and joined by a central plateau. These ranges age from approximately 4 million to 2.9 million years ago (YKE, 2009).

Topography

The proposed Bikeway is located along the southwestern (leeward) slopes of the Wai‘anae Range on the western boundary of the ‘Ewa coastal plain. Slopes are gradual and nearly imperceptible along this plain. The Bikeway will be at sea level along the coastal areas and rises to an elevation of approximately 50 feet above MSL at the highest point. The Hono‘uli‘uli Unit of the PHNWR, site of the proposed Overlook, lies along the south shore of West Loch in Pearl Harbor. See **Figure 16**.

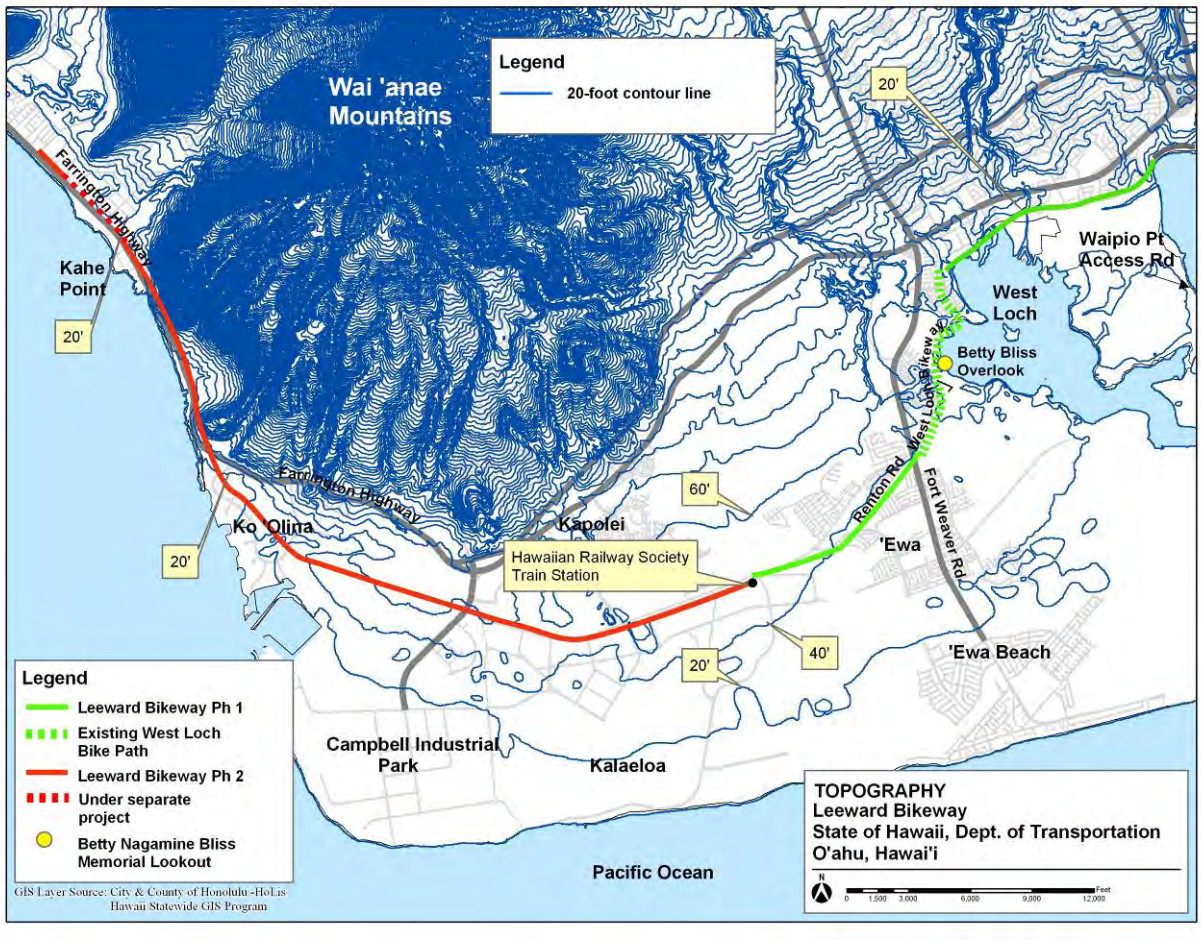

Figure 16. Topographic Map of the Project Area

Soils

'Ewa soils are primarily comprised of coastal plain sediments of fossil reef limestone and calcareous beach deposits, as well as alluvial sediments. During fluctuations in sea level within the Pleistocene period, approximately two million to 10,000 years ago, an alternating sequence of marine limestone and terrestrial sediments derived from the erosion of the volcanoes were laid down (Stearns, 1985).

The geology of Pearl Harbor also was affected by the fluctuations in sea level. Essentially, the harbor is a drowned river system with several branches. Soil types in the project area are depicted geographically and listed in **Figure 17**.

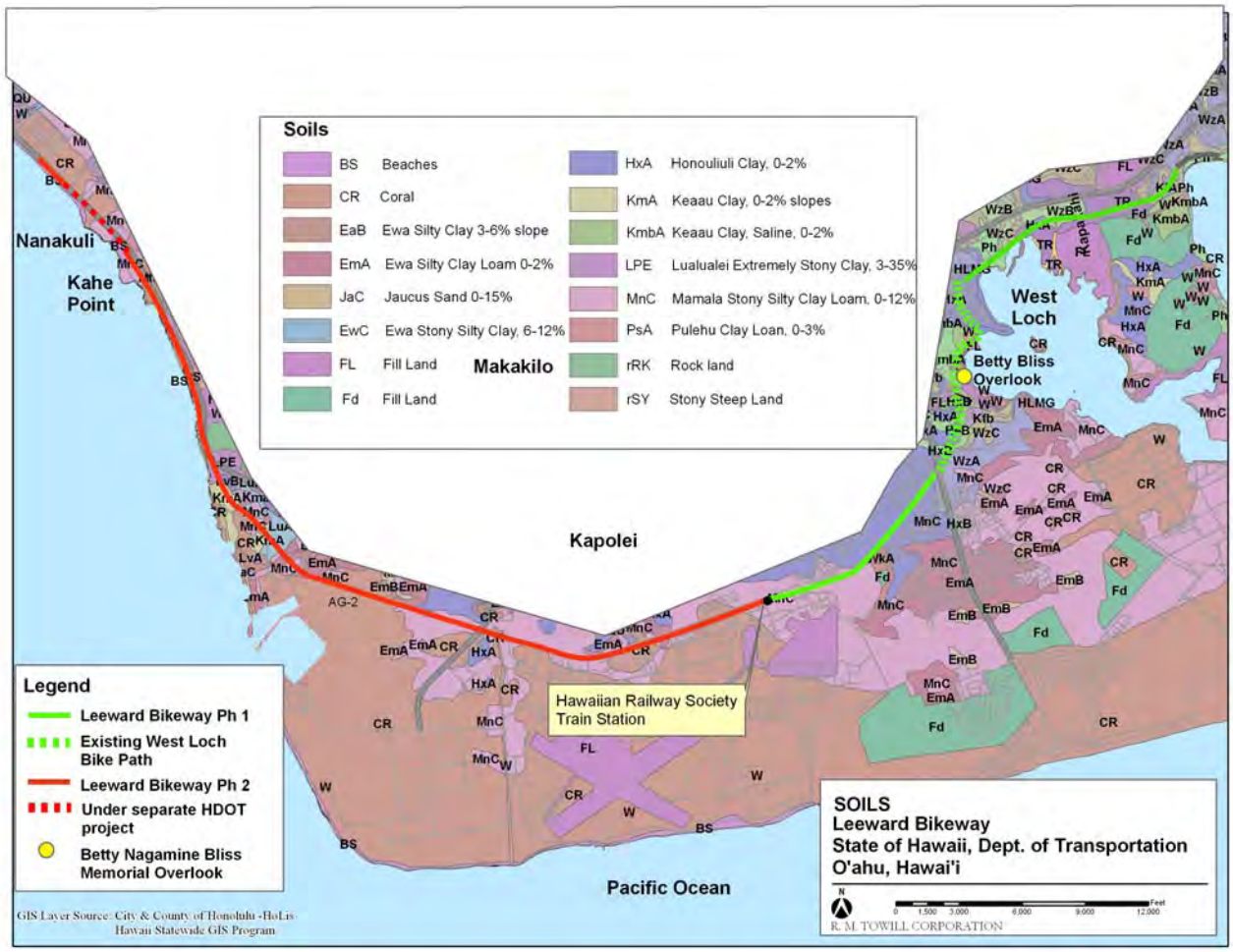

Figure 17. Soils Map

Potential Effects and Proposed Mitigation

Changes in the topography of the ‘Ewa and Wai‘anae areas have been on-going for the past century based on agricultural and residential uses, and particularly in the past several decades based on the development of the ‘Ewa region as O‘ahu's secondary urban center. The project itself, however, is not anticipated to result in adverse impacts to topography. Grading and excavations required for construction of the Bikeway will generally follow the topography within the railroad ROW. The potential for cumulative impacts to topography will be addressed with appropriate construction and post-construction controls including the use of erosion and stormwater runoff controls as promulgated in Federal, state, and City laws and regulations.

Grading and excavation required for construction of the Bikeway will be primarily within the railroad ROW and will be designed to minimize cut and fill. The Bikeway and Overlook design will meet ADA accessibility standards for slopes with minimal ground disturbance. Prevention of soil erosion will be included in the specifications for construction. Erosion control measures will be employed during construction including permanent soil stabilization that will be achieved through hydromulching, use of geotextile fabric, or similar methods until natural vegetation is established. No landscaping improvements are planned along the Bikeway.

Potential Impacts of Alternatives

No significant impacts are expected to result from this project or any project alternative.

3.1.3 Farmland Protection Policy Act (7 CFR Part 258)

According to 7 CFR Part 658, the purpose of the Farmland Protection Policy Act is to (a) establish criteria to identify and take into account the adverse effects of Federal agencies on the preservation of farmlands; (b) consider alternative actions, as appropriate, that could lessen adverse effects; and (c) to ensure that Federal programs, to the extent practicable, are compatible with State and local governmental and private programs and policies to protect farmland. If it is applicable, the Federal Department of Agriculture (USDA) may make available to States, units of local government, individuals, organizations, and other units of the Federal Government, information useful in restoring, maintaining, and improving the quantity and quality of farmland (7 CFR Part 658.1, Purpose).

The principal requirement for the Farmland Protection Policy Act requires that land areas subject to protection be defined as a “farmland.” According to 7 CFR Part 658.2, the definition of “farmland” is as follows:

> *(a) Farmland means prime or unique farmlands as defined in section 1540(c)(1) of the Act or farmland that is determined by the appropriate state or unit of local government agency or agencies with concurrence of the Secretary to be farmland of statewide or local importance. ‘‘Farmland’’ does not include land already in or committed to urban development or water storage…Areas shown as white on the USDA Important Farmland Maps are not ‘‘farmland’’ and, therefore, are not subject to the Act.*

The proposed project is situated within the former OR&L ROW that is not utilized for agricultural or farmland uses. Small linear easements needed to provide the required graded area

will be needed at certain points along the alignment (see **Section 3.4.2**). Engineers are currently assessing the exact requirements.

Potential Effects and Proposed Mitigation

Although much of ‘Ewa and Kapolei has highly ranked agricultural soil according to the ALISH (Agricultural Lands of Importance to the State of Hawai‘i), large-scale development has nonetheless proceeded in many areas that were once highly productive for agriculture, particularly sugar cane. No adverse negative impacts to farmlands as administered by the USDA are expected to result with the proposed project. No further mitigation measures with regard to the Farmland Protection Policy Act are required or proposed.

Potential Impacts of Alternatives

No alternative considered would have an adverse effect on farmlands.

3.1.4 Water Resources and Sole Source Aquifers (40 CFR Part 149)

Water resources relate to the availability and characteristics of water, including surface water and groundwater. Surface water may include marine water, rivers, streams, (including intermittent streams), wetlands, runoff and drainage. Water resources are also concerned with supply and quality of the water, including groundwater contained in aquifers.

The relevant project area for water resources includes the surface water bodies, gulches and drainage features traversing and downgradient from the former OR&L ROW as well as the underlying aquifers. The proposed project site is located within 100 feet of the coastal areas on the Wai‘anae Coast and West Loch areas, while being approximately 1 mile inland of coastal areas in the ‘Ewa Plain area (Earth Tech, 2000).

Southern O‘ahu Basal Aquifer – Leeward Bikeway

Below the caprock is the volcanic basement containing the deep aquifer, confined within horizontally-oriented basalt layers. The deep aquifer has a low vulnerability to contamination and is classified as irreplaceable (Mink and Lau, 1990). This potable, artesian ground water resource, known as the Southern O‘ahu Basal Aquifer (SOBA), lies in part beneath the ‘Ewa region, and is designated a sole source aquifer by the EPA in accordance with the Safe Drinking Water Act of 1974. A sole source aquifer is defined as supplying 50 percent or more of the drinking water for an area. Once an aquifer is given this designation, any project planned in areas above the aquifer receiving Federal funds must be coordinated with the Region IX EPA Office (San Francisco).

The Pearl Harbor aquifer, within the SOBA, is O‘ahu’s largest freshwater aquifer (**Figure 18**). This aquifer system fulfills approximately 60 percent of O‘ahu's drinking water requirements. This includes 100 percent of the water consumed in the central O‘ahu-‘Ewa area, 60 percent of the Leeward Coast’s drinking water, and 50 percent of urban Honolulu’s drinking water (Yoshishige 1993 in USFWS, 2010).

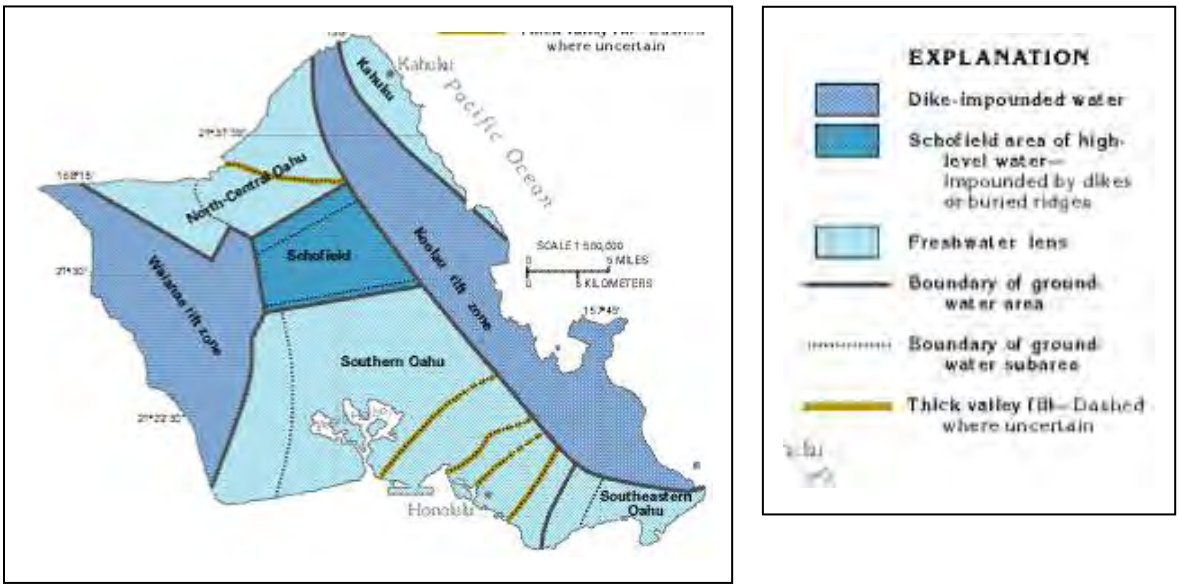

Figure 18. Aquifers of O‘ahu

Southern O‘ahu Basal Aquifer – Betty Nagamine Bliss Memorial Overlook

Pearl Harbor has been recently identified on several State and Federal water pollution lists as containing turbidity and nonpoint source pollutants that exceed State and Federal water quality standards. The State Department of Health has posted health advisories with respect to eating fish from Pearl Harbor waters. Water to flood and maintain water levels in the PHNWR in impoundments is pumped, with electric pumps, from wells at both Hono‘uli‘uli and Waiawa Refuge Units. The saline water table is probably very near the pond bottoms, and salt spray is frequently blown into the Refuge ponds. Water in the Waiawa Unit of the PHNWR is slightly more brackish than the Hono’uli’uli Unit. The flatness of the area, tidal regime, and adjacent proximity of salt water in Pearl Harbor all contribute to the increased salinity at the Waiawa Unit (USFWS, 2010).

The intertidal zone is important as a foraging area for a variety of waterbirds because of the quantity and diversity of invertebrates occupying this habitat and eaten by water-dependant birds and other organisms. Increased foraging habitat and food resources contribute to the recovery of the endangered Hawaiian stilt and provide wintering foraging habitat important to overwintering migratory waterbirds from thousands of miles away (USFWS, 2010).

The artificial aquatic ecosystems at the Hono‘uli‘uli Unit and Waiawa Unit of the PHNWR are currently some of the best freshwater marshes in O‘ahu and are particularly significant in light of reduced habitat for waterbirds elsewhere in the vicinity. Pouhala Marsh on the Waipi‘o Peninsula has undergone a major enhancement effort for waterbirds in a partnership between the State of Hawai‘i, USFWS, and Ducks Unlimited. This marsh serves as an intermediate wetland to serve birds migrating between the two PHNWR Units. The removal of the red mangrove (*Rhizophora mangle*), clean up of the area, and restoration efforts have resulted in increased foraging habitat for stilts and migratory shore birds. Invasive species removal and restoration efforts are ongoing at this site (USFWS, 2010).

Potential Effects and Proposed Mitigation

Ground-altering activities that threaten Sole Source Aquifers are typically associated with well drilling and other activities that require boring to considerable depth. Ground alterations required for the Bikeway will be limited to minor grading, and debris and vegetation removal. The project is not expected to have any significant impacts to groundwater resources in the area.

In compliance with Section 1424(e) of the Safe Drinking Water Act of 1974, consultation with the EPA Region IX Office was initiated for the previous FEA and resulted in the finding by EPA in a letter dated June 30, 2000, that "Based on the information provided, it appears unlikely that the project will significantly impact the Sole Source Aquifer. Therefore, EPA approves of Federal financial assistance for this project under provisions of the Safe Drinking Water Act, Section 1424(e)." (Earth Tech, 2000). Although the Bikeway design is substantially the same as that presented to EPA in 2000, consultation with EPA regarding possible project effects on the Sole Source Aquifer will be repeated to ensure the concurrence with the project as now proposed.

Water resources are expected to improve as a result of mangrove removal within the PHNWR that will be required to open viewplanes for the Overlook.

Potential Impacts of Alternatives

No significant impacts to water resources are expected to result from alternatives to this project.

Surface Water

Two types of streams are present in the project area: estuaries of perennial streams and intermittent streams. The estuaries are located along the West Loch of Pearl Harbor and intermittent streams crossing the ROW to the west of Pearl Harbor (**Figure 19**, which includes names of gulches). Ten gulches with intermittent streams traverse the proposed Bikeway:

- Pili o Kahe Gulch
- Limaloa Gulch
- Keaneoio Gulch
- Waimānalo Gulch
- Makaiwa Gulch
- Palailai Gulch
- Kapolei Gulch
- Awanui Gulch
- Makakilo Gulch
- Kaloʻi Gulch

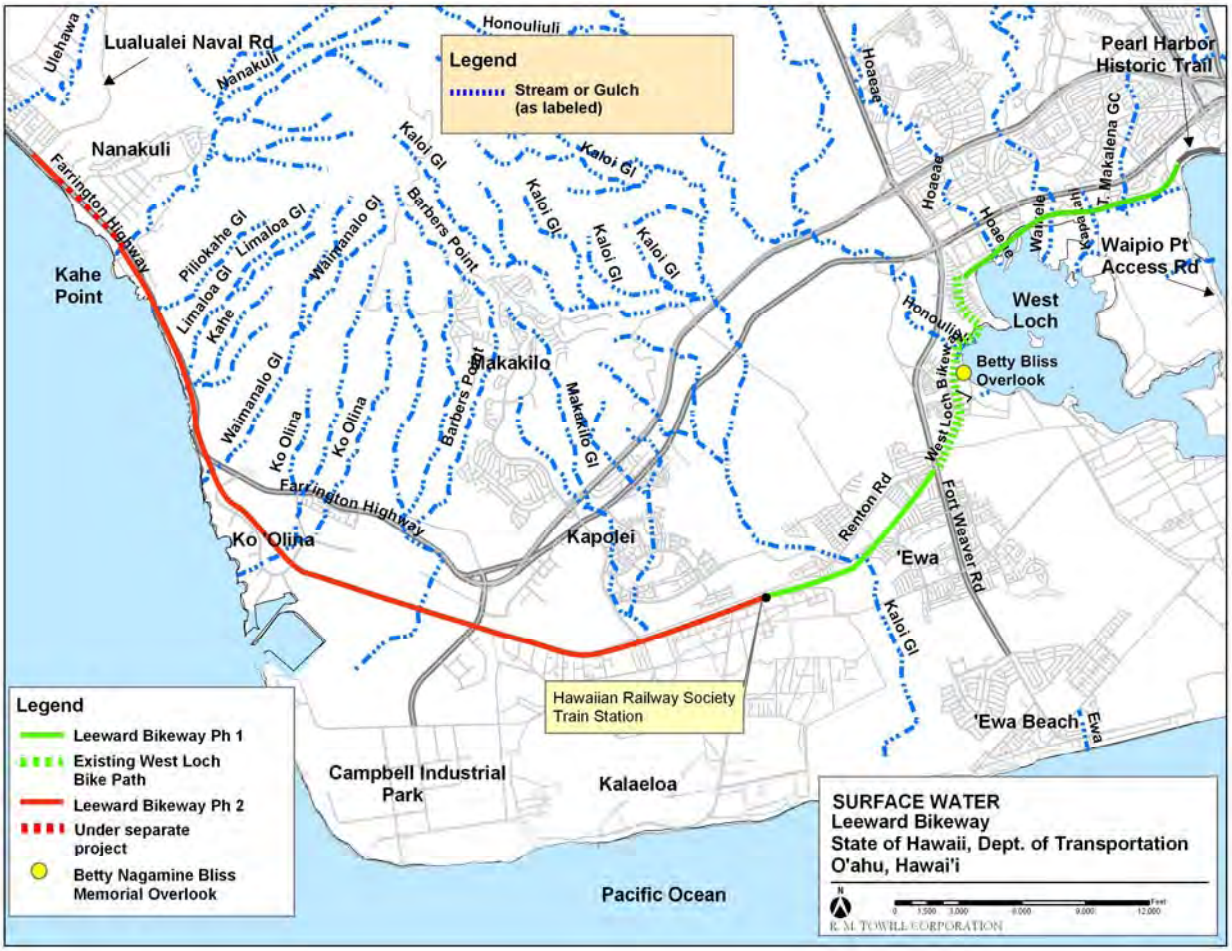

Figure 19. Surface Water Map

The three perennial streams within the project area include: Waipahu Drainage Canal (Kahu Channel), charged by Wailani Stream mauka of Waipahu town; Waikele Stream; and Kapakahi Stream.

- ***Waipahu Drainage Canal (Kahu Channel)*** – The Kahu Channel crosses the project area west of Waipi‘o Point Access Road and just north of the Ted Makalena Golf Course. The Canal drains much of the eastern portion of Waipahu town discharging into the Middle Loch of Pearl Harbor. Side channels extend east and west along the mauka and makai side of the existing West Loch Bike Path in the vicinity of the bridge. The concrete bridge across the channel at the Ted Makalena Golf Course also supports petroleum and gas pipelines on the mauka and makai sides of the structure. The water is brackish and tidal in nature (Earth Tech, 2000).
- ***Waikele Stream and Kapakahi Stream*** – These two stream crossings consist of the remnants of steel railroad bridges supporting petroleum pipelines. Phase I of the project will require demolition and replacement of remnant railroad bridges traversing these two streams. The Waikele Stream originates in the Ko‘olau Mountains and drains the second largest watershed on O‘ahu. The Kapakahi Stream is a tributary of Waikele Stream,

formed just north H-1 freeway. The most extensive water resource and wetland assets related to the proposed Bikeway are associated with the mouth of these two streams. The Kapakahi Stream drains through a narrow channel running along the west side of Waipahu Depot Road while Waikele Stream enters West Loch further west.

Nearly all of the proposed bridges in the project (three in the Nānākuli/Kahe area and two in the ʻEwa Plain) cross these normally-dry gulches. Kaloʻi Gulch, located northwest of the project area, is an intermittent water course. The gulch is part of the drainage network that emanates from the Waiʻanae Mountain Range and drains a portion of the Makakilo community. Water collected in Kaloʻi Gulch is conveyed under Interstate H-1 and continues towards the ocean from Kalaeloa.

After completion of the Bikeway improvements, stormwater will continue to follow existing drainage patterns and take advantage of existing drainage infrastructure.

Potential Effects and Proposed Mitigation

Potential for adverse impacts to surface water from construction activities associated with this project will be addressed through the following proposed measures and practices:

- Runoff from construction areas will be regulated through adherence to the National Pollutant Discharge Elimination System (NPDES) permit conditions. Best management practices (BMPs) will be employed to prevent soil loss and sediment discharges from work sites. Project activities and operation of the system following project completion will comply with Department of Health (DOH) regulations as set forth in HAR, Title 11 Chapter 54 - Water Quality Standards, and Chapter 55 - Water Pollution Control.
- Discharge pollution prevention measures will be employed in all phases of the project. Control measures will be in place and functional before construction activities begin, and will be maintained throughout the construction period. A site-specific plan to prevent runoff and the discharges of other pollutants into State waters, including removal procedures for the construction site BMPs, will be prepared by the construction contractor as part of the project construction plan. The construction plan will be submitted to the DOH-Clean Water Branch for review.
- The BMPs will include guidelines and mitigation measures to prevent runoff, discharge pollution, and other detrimental impacts related to construction activities. In addition, BMPs will include contingency plans to respond to heavy rainfall conditions.
- Mitigation measures, in addition to the discharge pollution controls described above, shall include, but not be limited to, the following:
    - Clearing and excavation shall be held to the minimum necessary to meet project design and construction plan requirements.
    - Construction shall be phased to minimize the exposure time of cleared or excavated areas. Existing ground cover shall not be destroyed, removed or disturbed more than 20 calendar days prior to the start of construction.
    - Stabilization shall be accomplished by temporarily or permanently protecting the disturbed surface from rainfall impacts and runoff.

  - Storm water flowing toward active project areas shall be diverted as much as practicable using appropriate controls, including berms and silt fences, as determined by the contractor according to site conditions.
  - Areas that remain unfinished for more than 30 calendar days shall be hydro-mulched or seeded to provide temporary soil stabilization.

- The project contractor will select locations for stockpiling construction material. Stockpile sites will be identified in the site-specific BMPs and construction plans. A sediment retention berm or silt fence will be installed around the down-slope side of stockpile sites to retain sediment discharges during heavy rainfall.
- The contractor, based on professional experience and site conditions, may modify the proposed BMP mitigation measures as necessary to account for unanticipated or site specific conditions.

Potential Impacts of Alternatives

No alternative considered would have an adverse effect on surface water.

3.1.5 Wild and Scenic Rivers Act (Sections 7(b) and (c))

There are no wild and scenic rivers in the State of Hawai‘i according to the National Park Service.

Potential Effects and Proposed Mitigation

No impacts are anticipated and no mitigation is therefore proposed.

Potential Impacts of Alternatives

No alternative considered would have an adverse effect on wild or scenic rivers.

3.1.6 Wetlands – Leeward Bikeway

The U. S. Army Corps of Engineers (USACE) and the EPA define wetlands as: *those areas that are inundated or saturated by surface or ground water at a frequency and duration sufficient to support, and that under normal circumstances do support, a prevalence of vegetation typically adapted for life in saturated soil conditions*. Wetlands generally include swamps, marshes, bogs, and similar areas. The USACE evaluates three indicators of wetlands when making wetland determinations: (1) vegetation; (2) soil; and (3) hydrology. All three characteristics must be present during some portion of the growing season for an area to be a wetland. If the area occurs in a flood plain or otherwise has low spots in which water stands at or above the soil surface during the growing season, it meets the criteria for wetland hydrology.

Pouhala Marsh – Leeward Bikeway

The open salt-water marsh near Waipahu Depot Road (former Pouhala Fishpond, renamed Pouhala Marsh) is considered part of the Waikele watershed and is comprised of a remnant fishpond and coastal marsh in the West Loch area of Pearl Harbor. This 70-acre area is owned by the CCH and the State of Hawai‘i and is approximately 500 feet from the proposed Bikeway (**Figure 20**).

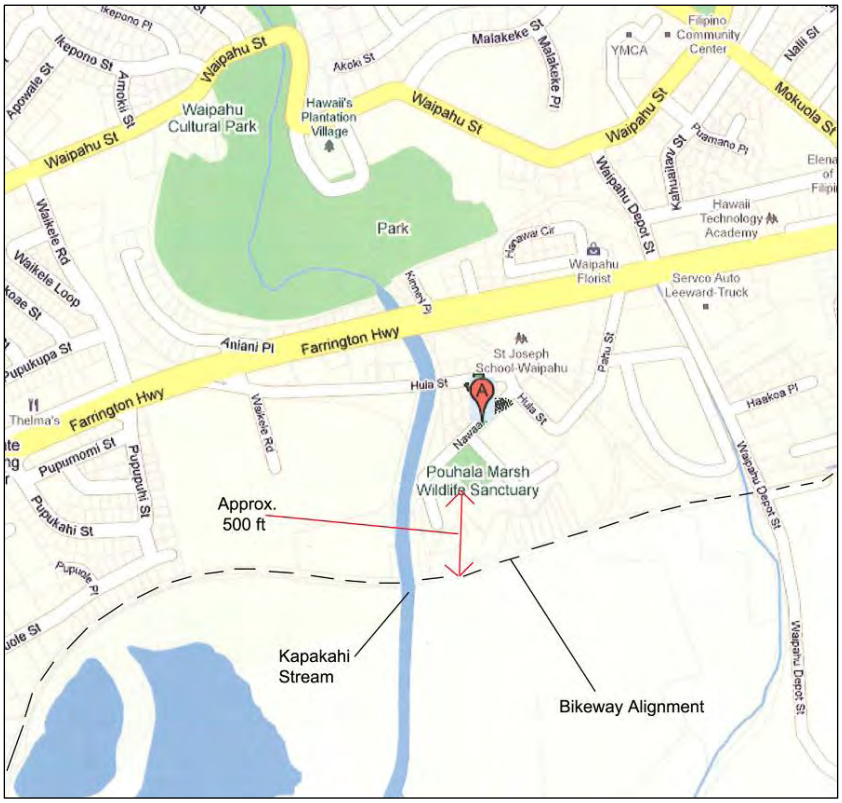

Figure 20. Pouhala Marsh Wildlife Sanctuary Location

The Pouhala Marsh area is undergoing a lengthy restoration and enhancement process initiated over ten years ago under a partnership between the State of Hawai‘i, USFWS, and Ducks Unlimited.

Restoration activities include vegetation clearing, sculpting basins, levee removal, debris removal, placement of fish screens, fencing and removal of fill material. Most work is performed by community volunteers. Pouhala Marsh is the largest remaining wetland habitat in Pearl Harbor, serving as habitat for native endangered waterbirds and several species of migratory shorebirds. A land-lease agreement between the CCH and the State will allow the State to manage the entire area as a wildlife sanctuary (Hawai‘i Nature Center, 2010).

3.1.7 Wetlands – Pearl Harbor National Wildlife Refuge (PHNWR)

Native wetland ecosystems on O‘ahu have undergone tremendous changes over time. As human populations expanded, residential, commercial, and agricultural developments and other activities have contributed to the loss of wetland habitats. Accidental and intentional introductions of non-native plants and animals have also been factors in the decline of wetland ecosystems. PHNWR units support a significant portion of the endangered waterbird population of O‘ahu. These Refuge units are not easily accessible to the public thus limiting the opportunities to learn about the resources they protect. Public knowledge and support of the Refuge and its programs helps provide support for the resources and their preservation (USFWS, 2010).

Pouhala Marsh (**Section 3.1.6**) serves as an intermediate wetland to serve birds migrating between the two PHNWR Units. The removal of the red mangrove (*Rhizophora mangle*), clean up of the area, and restoration efforts have resulted in increased foraging habitat for stilts and migratory shore birds. Invasive species removal and restoration efforts are ongoing at this site (USFWS, 2010).

3.1.8 Water Resources Regulatory Requirements under the Clean Water Act

The Clean Water Act (CWA) of 1977 (33 USC §§ 1251 et. seq.) regulates pollutant discharges that could affect aquatic life forms or human health and safety. The major sections of the CWA applicable to the proposed action are:

Section 401 of the CWA requires a Water Quality Certification (WQC) be obtained from the State for actions that require a Federal permit to conduct an activity, construction or operation that may result in discharge to waters of the United States. The State of Hawai‘i, Department of Health, Clean Water Branch (DOH-CWB) issues the WQC for Hawai‘i waters.

Section 402 of the CWA requires a National Pollution Discharge Elimination System (NPDES) general permit for point source discharges including storm water discharges associated with construction activities. This permit is expected to be required based on the use and disturbance of a land area that will exceed 1.0 acres and the discharge of storm water from the construction site to waters of the U. S. The DOH-CWB issues the NPDES for Hawai‘i waters.

Section 404 of the CWA, and Executive Order (EO) 11990, Protection of Wetlands, regulates development activities in or near streams or wetlands. Section 404 regulates development in streams and wetlands and requires a permit from the United States Army Corps of Engineers (USACE) for dredging and filling in wetlands.

The following agencies will be contacted to establish jurisdictional authority and permitting requirements:

- Department of the Army, Corps of Engineers
- Department of Health, Clean Water Branch, State of Hawai‘i

Potential Effects and Proposed Mitigation – Leeward Bikeway

Construction activities for the Bikeway will be completed with as little disruption as possible to the identified wetland-type areas of concern. Runoff from construction areas will be regulated through adherence to the National Pollutant Discharge Elimination System (NPDES) permit conditions. Best Management Practices (BMP) will be

employed to prevent soil loss and sediment discharges from work sites. Project activities and operation of the system following project completion will comply with Department of Health (DOH) regulations as set forth in Hawai‘i Administrative Rules, Title 11 Chapter 54 - Water Quality Standards, and Chapter 55 - Water Pollution Control.

Pursuant to Section 401 of the Clean Water Act of 1977, a Water Quality Certification from the DOH will be obtained, if required. Further, a Water Quality Monitoring Plan will be prepared to monitor water quality, as required, during construction.

Pursuant to Section 404 of the Clean Water Act, consultation will be sought from the Corps of Engineers for any work within stream crossings. If required, a Section 404 permit will also be obtained.

Mitigation measures for construction equipment and supplies, including petroleum products, are expected to consist of confined storage areas away from stream and wetland areas. Storage containers will be equipped with containment devices to contain spills or releases. All refueling and maintenance activities will take place on paved land, away from sensitive areas. To the extent possible, equipment will be kept free of pollutants during construction activities. Garbage and waste receptacles will be provided on site for waste containment. All wastes will be removed from the project area after completion of the project.

A contingency plan to control accidental spills of petroleum products shall be developed and implemented at the project site. Absorbent pads and containment booms shall be stored on site to facilitate quick response and clean-up of any spills. The contractor also will not dump any material in the streams or wetlands.

Erosion control BMPs will be used to control turbidity and minimize negative impacts to stream and wetland habitats. Natural drainage flows will be maintained for the duration of the project so as not to affect the movement of fish and other aquatic species upstream and downstream of the project site.

Removal of any existing illegally dumped waste material within the ROW could occur during clearing and grading activities. In the event that subsurface contamination is encountered, it will be identified and handled appropriately in accordance with State of Hawai‘i and EPA regulations. A mitigation plan and measures will be in place to address unforeseen pipeline breakage or punctures during bridge construction/ pipeline relocation and/or during grading activities. To mitigate problems in transporting hazardous materials and wastes, transporters of such materials are required follow DOT and EPA regulations.

Potential Effects and Proposed Mitigation – Betty Nagamine Bliss Memorial Overlook

The No Action alternative would not result in significant changes to hydrology or water quality at the PHNWR.

The establishment of the Overlook in the Hono’uli’uli Unit of the PHNWR would not change the hydrology or water resources in the area. The construction of the Overlook will require some mangrove removal to restore the nearshore bird habitat and provide an opportunity to view West Loch. Mangrove removal may temporarily suspend sediments in the near shore environment. Best Management Practices and use of booms and other

sediment control devices will be employed to reduce the impacts to water quality to insignificant levels (USFWS, 2010).

The use of pesticides and herbicides and other chemical treatment by the USFWS on the Refuge would continue to be in accordance with applicable laws. Proper use of chemicals for work within the Refuge would ensure protection of water resources affected by Refuge activities. Therefore, the construction of the Overlook would not have significant impact on waters of the U. S.

Potential Impacts of Alternatives

No significant impacts to water resources are expected to result from this project.

3.1.9 Drainage

The Pearl Harbor watershed covers approximately 145 square miles (93,000 acres) and constitutes about one quarter of the streams that drain into the harbor. Two of the streams (Honoʻuliʻuli and ʻAiea) are intermittent, while Waikele, Waiawa, Waimano, Waimalu, Kalauʻuao, and Hālawa are perennial streams. High sediment production areas are typically located in the steep, high rainfall areas of the upper watersheds that feed into Pearl Harbor. Surface water flowing in these streams may be used to irrigate agricultural fields in Central Oʻahu or may be impounded in reservoirs (USFWS, 2010).

Storm water runoff throughout the project area is conveyed in both natural drainage channels and improved drainage systems comprised of concrete pipes, culverts, drain inlets, and lined and unlined ditches. Surface water drainage typically begins high in the mountains during rainstorms and proceeds down gradient, collecting in streams and dry gulches. A portion of surface water infiltrates through the streambeds and over sections of the ʻEwa Plain across the project area, recharging the underlying aquifer. Potential issues arise when gulches or streams are changed in their course or carrying capacity, causing flooding and scour damage, which in turn affects water quality downstream, ultimately polluting marine water bodies and decreasing the supply and quality of groundwater sources.

The project will benefit from improvements already made to the railroad ROW to support train operations between the ʻEwa Station and Kahe Point as well as extensive regional drainage systems constructed to support master planned communities in Central Oʻahu and ʻEwa, such as Waipiʻo, West Loch, ʻEwa Villages, Villages of Kapolei, and Ko ʻOlina. Minor drainage improvements, such as replacement of existing concrete culverts in several locations, will be included in construction improvements.

Along the Waiʻanae Coast, Farrington Highway and the railroad bed are typically at higher elevations than the landscape mauka (eastward) of these structures, causing flooding during heavy rains. Because the proposed Bikeway and former OR&L railroad bed is raised above the existing topography in many areas, these elevated portions of the project area have the potential to adversely impact drainage. However, existing drainage culverts will be maintained during the development of the proposed Bikeway (Earth Tech, 2000).

Potential Effects and Proposed Mitigation

Existing drainage facilities will be kept intact or improved as a result of this project. Short-term and long-term effects on storm water drainage are outlined below for the Bikeway and Overlook project components.

Planned improvements will require grading work to achieve proper elevations and grades for Bikeway construction. Potential impacts include discharge of sediments or other pollutants in construction-related storm water runoff. During construction, project activities will be conducted in compliance with HAR 11-54 Water Quality Standards, HAR 11-55 Water Pollution Control, and City and County of Honolulu grading and erosion control standards. Because planned improvements will result in more than one acre of ground disturbance during construction, project activities will be subject to a NPDES Notice of Intent (NOI) Form C for Storm Water Discharges Associated with Construction Activity from the State DOH-CWB. The permit requires implementation of BMPs, including site management measures and physical controls (e.g. diversion berms, silt fences, detention ponds) to reduce pollutants in construction storm water runoff and ensure that the project complies with State water quality standards.

General BMPs will include the following:

General Best Management Practices (BMPs)

- Limit construction near drainageways to avoid the potential for release of sediments into stormwater.

Before Construction

- Existing ground cover will not be destroyed, removed or disturbed more than 20 calendar days prior to start of construction.
- Erosion and sediment control measures will be in place and functional before earthwork may begin, and will be maintained throughout the construction period. Temporary measures may be removed at the beginning of the work day, but shall be replaced at the end of the work day.

During Construction

- Clearing shall be held to the minimum necessary for grading, equipment operation, and site work.
- Construction shall be sequenced to minimize the exposure time of cleared surface areas. Areas of one phase shall be stabilized before another phase can be initiated. Stabilization shall be accomplished by protecting areas of disturbed soils from rainfall and runoff by use of structural controls such as PVC sheets, geotextile filter fabric, berms or sediment basins, or vegetative controls such as grass seedling or hydromulch.
- Temporary soil stabilization with appropriate vegetation shall be applied on areas that remain unfinished for more than 30 calendar days, and permanent soil stabilization using vegetative controls shall be applied as soon as practicable after final grading.
- All control measures shall be checked and repaired as necessary, e.g., weekly in dry periods and within 24 hours after any heavy rainfall event. During periods of prolonged rainfall, daily checking shall be conducted.

Following Construction

- All areas of ground disturbance will be stabilized with landscaping consisting of various plant species and ground covers.

During Adverse Weather Conditions

- The contractor shall listen to weather reports daily while conducting work. If an emergency weather warning is issued, work shall cease. All equipment and materials shall be secured against wind, rainfall and flooding, and the work area cleared of construction debris to the extent practicable. Work shall not resume until conditions improve and weather warnings are rescinded.
- Prior to recommencement of work activities following an event, the Contractor shall inspect all BMPs, including silt fence, sandbag barriers, and stabilized construction entrance, to ensure that they are not damaged, and that all BMP's are properly installed and functioning
- Construction materials and debris that is dispersed due to wind or rainfall shall be collected by the Contractor and reused or disposed of in compliance with State and County regulations.

  Impacts related to construction activities will be of short duration and will cease upon completion of the project.

Construction of the Bikeway will result in an increase in impervious area and related surface runoff. Due to the narrow, linear nature of the path, the increase in runoff from project improvements is expected to be slight in relation to the size of the project corridor.

Best Management Practices will be followed according to the standard protocol used by USFWS when constructing facilities within established wetland and/or Refuge areas. The Overlook project will not significantly increase impermeable surfaces as the platforms and decking will be elevated above the ground.

Potential Impacts of Alternatives

No significant impacts to drainage are expected to result from this project.

3.1.10 Natural Hazards

Earthquakes

The Uniform Building Code (UBC) provides minimum design criteria to address the potential for damage due to seismic disturbances. The range of seismic risk varies from Zone 0, indicating no damage, to Zone 4, indicating major damage. The island of O'ahu is in Seismic Zone 2, as established by the UBC, indicating a moderate risk of damage from earthquake (RMTC, 2009).

Potential Effects and Proposed Mitigation Measures

The project will be constructed for a long-term design life in accordance with the 2003 International Building Code seismic design standards for O'ahu. Components of the bikeway most susceptible to potential earthquake damage, including the replacement of eight bridge crossings, will be subject to maintenance and upkeep as a part of the State's transportation infrastructure.

The design of Overlook facilities will be consistent with geotechnical findings to determine requirements for seismic resistance.

Potential Impacts of Alternatives

No significant impacts due to earthquakes are expected to result from this project.

Flood Zones and Floodplain Management (24 CFR Part 55, Executive Order 11988)

The Federal Emergency Management Agency (FEMA) has prepared Flood Insurance Rate Maps (FIRMs) for the project area which includes the following flood zone designations (**Figure 21, Figure 22, and Figure 23**):

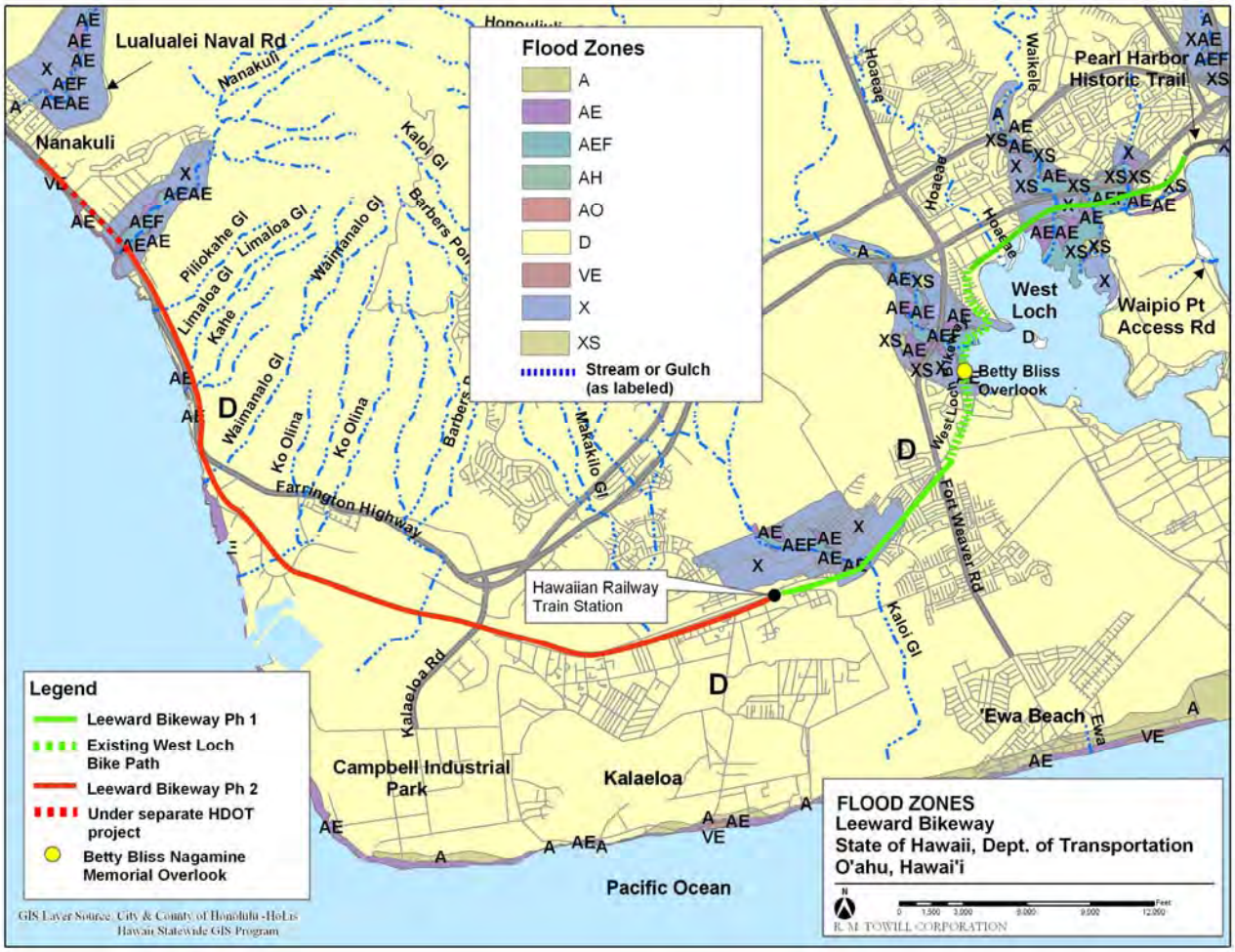

Figure 21. Flood Zones in the Project Area

A – Areas of 100 year flood, base flood elevations not determined.

AE – Areas of 100 year flood, base flood elevation determined.

XS – Areas of 500 year flood; areas of 100 year flood with average depths of less than one foot or within the drainage area less than one square mile, and areas protected by levees from 100 year flood.

X – Areas determined to be outside the 100 year flood plain.

D – Areas in which flood hazard is undetermined but flooding is possible.

VE – Areas of 100 year coastal flood with velocity (wave action), base flood elevations determined (Coastal High Hazard District) – only a small area on the Wai‘anae Coast within the project area.

Executive Order 11988, Floodplain Management, requires Federal agencies to take action to reduce the risk of flood damage; minimize impacts of floods on human safety, health, and welfare; and restore and preserve natural and beneficial values served by floodplains. Federal agencies must consider the proximity of their actions to or within floodplains.

The project area is predominantly in flood zone “D,” where flood risk is not determined but flooding is possible. The relatively flat topography and mid-plain location of much of the Bikeway do not generate concern about flood risk. However, of importance to the design of the Bikeway are areas where the flood risk has been identified as a major design consideration.

Two areas are especially of interest, as they are located in flood plains expected to be inundated during a 100-year flood. The drainage areas of Waikele and Kapakahi Stream in the Waipahu flood plain, and the “VE” area in Nānākuli.

- **Nānākuli (Figure 22).** The coastal area designated “VE,” from Nānākuli residential development on Farrington Highway to Lualualei Naval Road, exists in Nānākuli near the western terminus of the Bikeway.

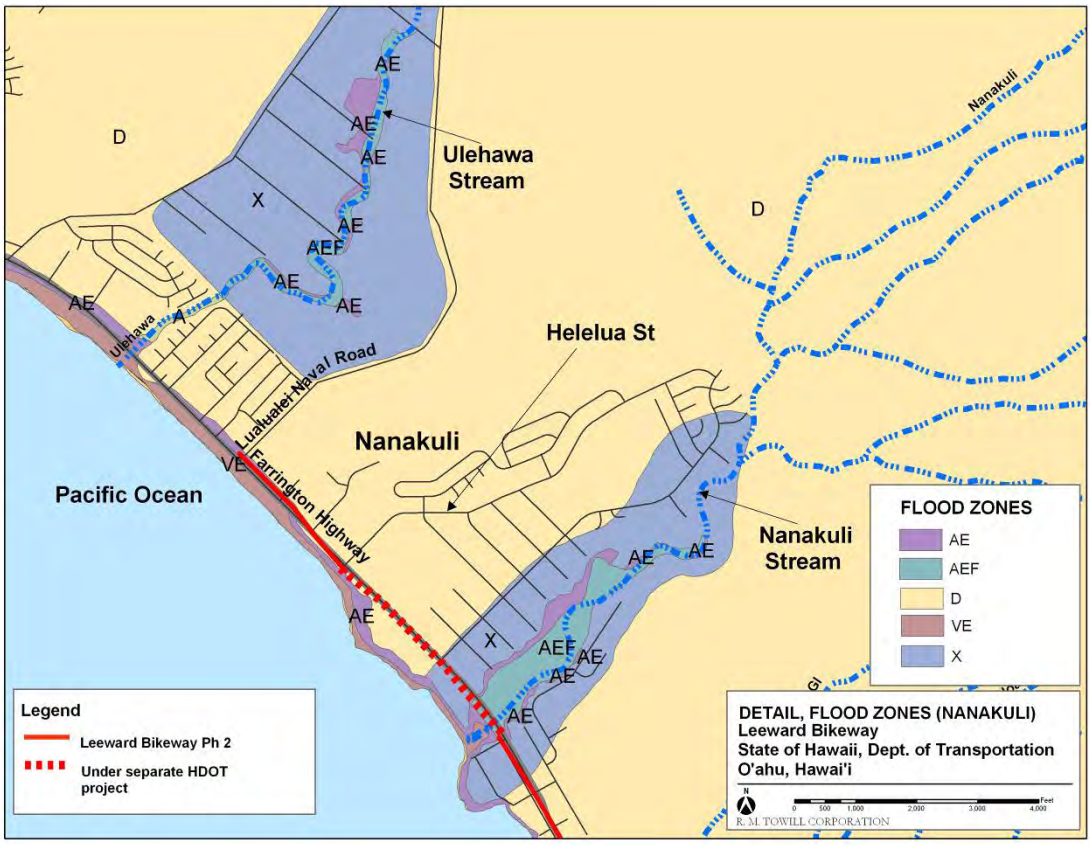

Figure 22. Detail of Flood Zones (Nānākuli)

- **Waipahu (Figure 23).** Existing railroad bridges spanning the Waikele Stream and Kapakahi Stream must be replaced to accommodate plans for the Bikeway. Bridge design will conform to the "no-rise" requirements of the Federal Emergency Management Agency which prevent any addition to floodplain damage potential.

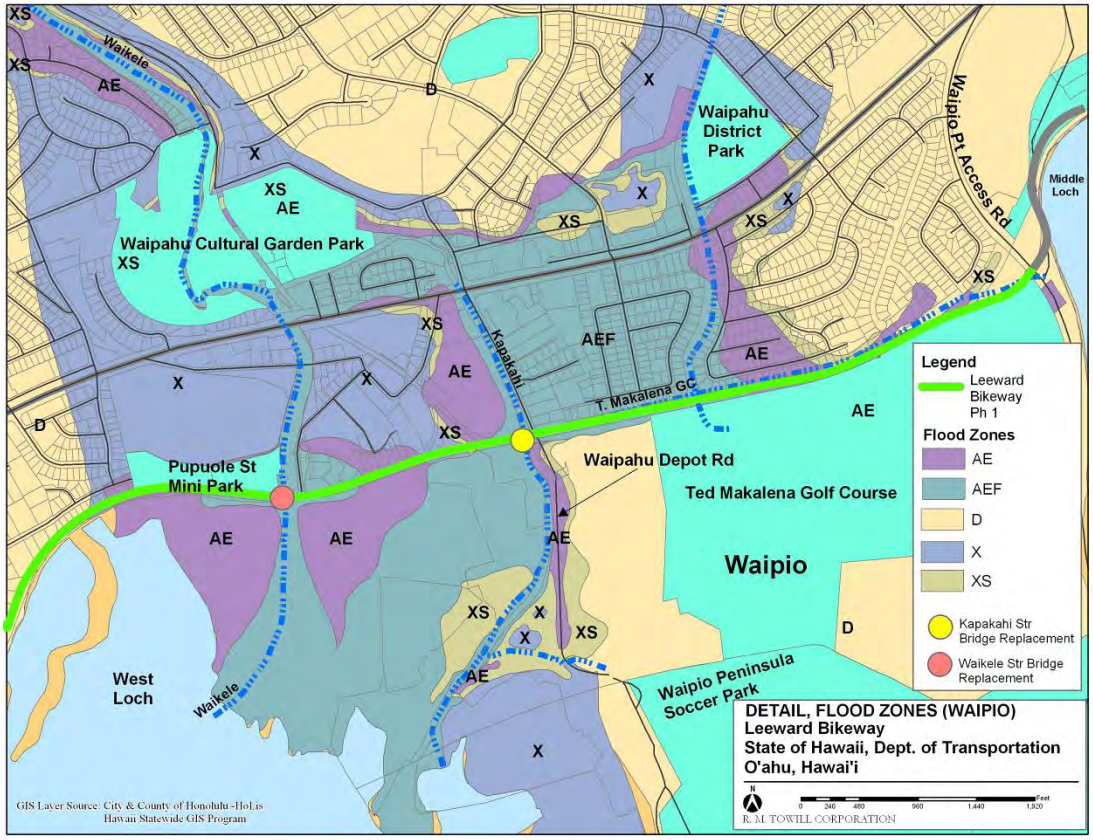

Figure 23. Detail of Flood Zones (Waipahu)

Potential Effects and Proposed Mitigation

The project is not expected to exacerbate flood conditions. Engineering studies for improvements within the floodway and Coastal High Hazard zone are being undertaken during the design stage. In any area where development is proposed within a floodway, a registered professional engineer will certify that the work will not cause any increase in the base flood elevation during the occurrence of the base flood discharge.

The National Flood Insurance Program (NFIP) prohibits the use of fill for structural support of buildings in wave hazard (V) zones. Although no buildings are planned, fill may be used for grading if the fill does not interfere with the free passage of floodwaters or debris under buildings or cause ramping or deflection of floodwaters that will adversely affect adjacent buildings or property and thereby create additional flood damage potential.

In any construction area with a VE flood zone designation, an opinion of No Adverse Potential Effects on wave dynamics during coastal storms due to any fills in the V-zone will be provided by a professional coastal geologist or other professional familiar with coastal processes and wave dynamics.

Design and construction of proposed improvements will be performed in compliance with all pertinent CCH regulations.

Potential Impacts of Alternatives

No significant impacts are expected to result from this project.

Hurricanes

Hawai‘i’s northeast trade winds average between 10 and 20 mph, with occasional periods with 40-60 mph occurring. When wind speeds exceed 70 mph, storms are characterized as hurricanes in which “Category” 1 has wind speeds between 75-95 mph and Category 5 has wind speeds exceeding 155 mph. Hurricanes occasionally approach the Hawaiian Islands, but rarely reach the islands with hurricane-force wind speeds.

The Island of O‘ahu has been affected twice since 1982 by devastating hurricanes, ‘Iwa in 1982 and ‘Iniki in 1992. Passing hurricanes have generated the highest wave heights along the south-facing shores and may coincide with a high tide and typically generate a strong storm surge. The wave action generated by hurricanes ‘Iwa (1982) and ‘Iniki (1992) varied from 10-20 feet.

Potential Effects and Proposed Mitigation

The Bikeway and related bridge structures will be designed to meet or exceed the minimum requirements of the American Association of State Highway Transportation Officials (AASHTO) and AASHTO Load Resistance Factor Design (LRFD) specifications for pedestrian and bicycle use.

Coastal areas of the project will be more vulnerable to hurricanes than inland areas of the ‘Ewa Plain. Although prediction of these natural occurrences is difficult, it is reasonable to assume that future events will occur. The project site is, however, no more or less vulnerable than the rest of the island to the destructive winds and torrential rains associated with hurricanes. Drainage improvements and conformance with flood plain design requirements are expected to minimize any expected impacts from hurricanes.

Potential Impacts of Alternatives

No significant impacts are expected to result from this project.

Tsunami

A tsunami is a series of destructive ocean waves generated by seismic activity that could potentially affect shorelines of Hawai‘i. Tsunami occurred in Hawai‘i in 1946, 1957, 1960, 1964, and 2010. Prior to the Chilean earthquake-generated tsunami in February 2010, which generated a few inches of wave action in Hawaii, the run-up heights of previous tsunami varied from one to 14 feet. The OR&L railroad track has previously been affected by tsunami activity. On April 1, 1946, a tsunami hit the north shore of O‘ahu in the early morning, and destroyed a "long section" on the track. Two weeks later, it was repaired by the OR&L and nearby plantation workers and put back into service (Hawaiian Railway Society, 1994).

State of Hawai‘i Civil Defense has established tsunami evacuation zones and maps for all coastal areas in Hawai‘i. **Figure 24**, showing State of Hawai‘i GIS data, shows a part of project area within the tsunami evacuation zone, specifically Ali‘inui Drive (Ko 'Olina) to Lualualei Naval Road on the Wai‘anae coast. Although the project area in the vicinity of Pearl Harbor is not within a designated tsunami evacuation zone, it is still coastal and therefore somewhat vulnerable to high wave action.

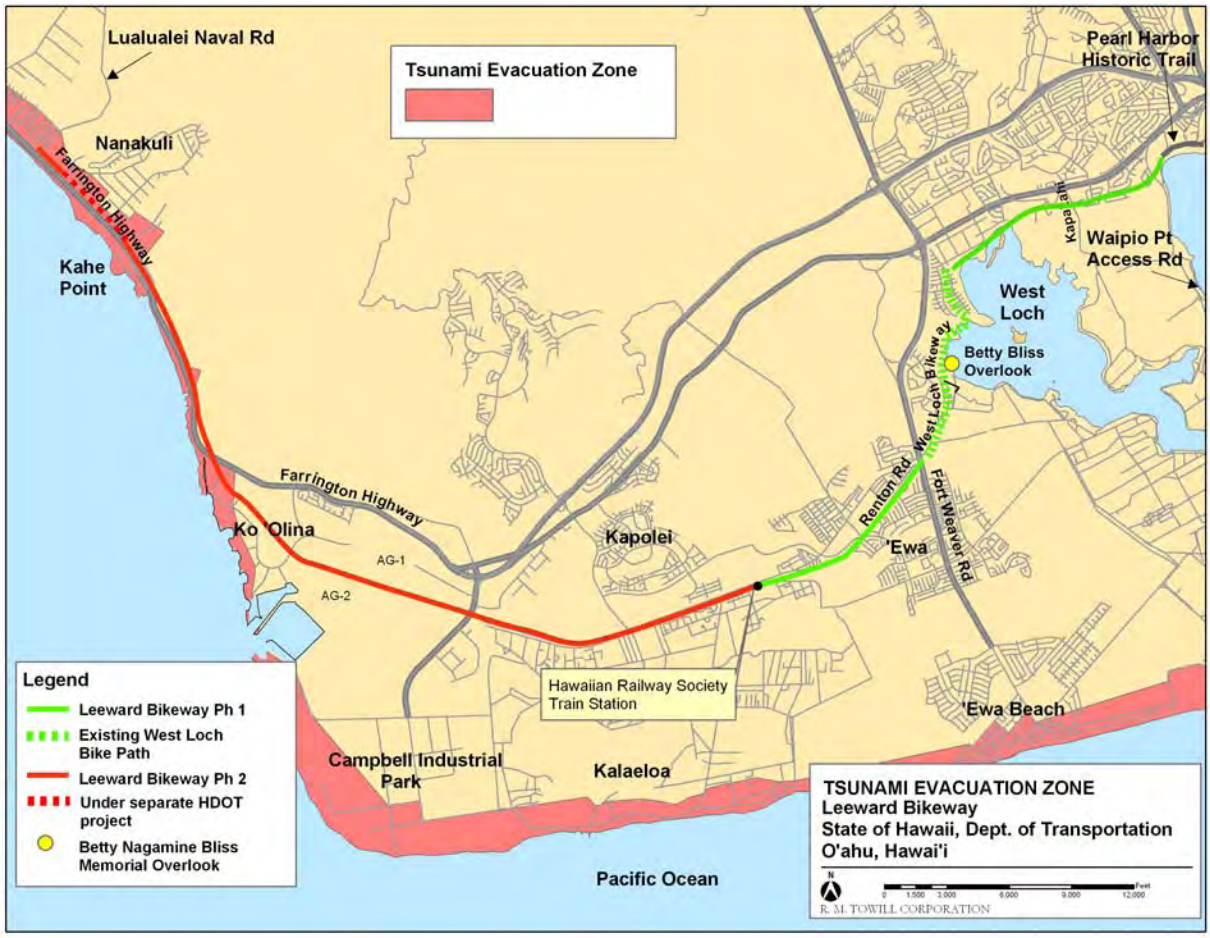

Figure 24. Tsunami Evacuation Zone

Potential Impacts and Mitigation

Coastal segments of the Bikeway are located within the tsunami evacuation zone and will be more vulnerable to tsunami than inland areas of the ‘Ewa Plain. The Bikeway will potentially attract more path users to coastal areas susceptible to tsunami inundation. The existing Civil Defense tsunami warning system of sirens and public announcements has been shown to provide reasonable amount of time for people to evacuate potential inundation areas. The pathway will facilitate evacuation by improving access for emergency personnel to enter vulnerable shoreline areas to conduct patrols and issue warnings, and by providing an alternative route for public evacuation away to safe areas.

Potential Impacts of Alternatives

No significant impacts to water resources are expected to result from this project.

3.1.11 Scenic and Visual Resources

Leeward Bikeway

Visual resources impart scenic, visually aesthetic qualities to a natural, rural, or urban environment. These resources are assessed during the environmental impact analysis process to determine whether or not a project will be compatible with the existing landscape. The planning documents for the ʻEwa and Waiʻanae Districts take into account the preservation of visual landmarks and significant vistas. The former OR&L ROW is present on the Waipiʻo Peninsula, in the shores of West Loch, the ʻEwa Plain and the Waiʻanae Coast area. Not only are the views from the proposed project important, but so are the views from other areas that include the proposed Bikeway. As a result, the project area for visual resources is the coastal areas along the Waiʻanae Coast and West Loch, and the ʻEwa Plain area (Earth Tech, 2000).

View plains in proximity to the project area include:

- Views of the ocean from Farrington Highway between Kahe Point and the boundary of the Waiʻanae Development Plan Area;
- Views of Na Pu'u at Kapolei, Makakilo, and Palailai; Makai views from the Ko 'Olina area;
- Mauka and makai views throughout the route;
- Views of central Honolulu and Diamond Head;
- Views of the Waiʻanae and Koʻolau Mountains from major roadways including Farrington Highway;
- Views of Pearl Harbor from Farrington Highway in the vicinity of Waipahu High School;
- Views from Lualualei Naval Road to Ko 'Olina Resort; and
- Views from Waiʻanae coast beach parks and the Pacific Ocean.

Betty Nagamine Bliss Memorial Overlook

The Overlook will provide a new opportunity to view the natural areas and resources of Pearl Harbor in an area previously off-limits to the public. Planned removal of exotic plant species (mangrove and kiawe) from the area will open up new vistas over the PHNWR, West Loch, and toward the Waiʻanae Mountains. One key purpose of the Overlook is to provide a means to share the visual, scenic, natural, and historic resources of the PHNWR.

Potential Impacts and Mitigation

The Bikeway will create new opportunities for people to enjoy scenic views from West Loch to the Waiʻanae Coast. The Bikeway infrastructure, including an asphalt concrete path constructed at grade, and limited signage provided for information, education, and historic interpretation, will be noticeable, but will not degrade scenic values.

The Overlook will have the beneficial impact of an unobstructed view of West Loch and the natural resources of the PHNWR.

Potential Impacts of Alternatives

No significant impacts are expected to result from this project.

3.1.12 Noise (24 CFR Part 51B)

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

Different sounds have different frequency content. When describing sound and its effect on a human population, A-weighted (dBA) sound levels are typically used to account for the response of human ear. The term "A-weighted" refers to a filtering of the noise signal to emphasize frequencies in the middle of the audible spectrum and to de-emphasize low and high frequencies in a manner corresponding to the way the human ear perceives sound. This filtering network has been established by the American National Standards Institute (ANSI). The A-weighted noise level has been found to correlate well with a person's judgment of the noisiness of different sounds and has been used for many years as a measure of community noise.

Permissible occupational noise exposure levels and durations are defined in 29 CFR Part 1910.95. The DOH monitors noise issues in accordance with HRS, Chapter 342F.

The major contributors of noise in the vicinity of the project area are motor vehicles on nearby roads and periodic passing of historic railroad trains operated by the Hawaiian Railway Society between Kahe Point and their Renton Road ‘Ewa Station/Museum. During the operation of the railroad at unguarded railroad crossings, the Federal Railway Administration (FRA) requires all trains to blow two long blasts, a short blast and a long one. In the areas of these roads, traffic is somewhat continuous and ambient daytime noise levels are consistent with an urban area.

Estimated noise levels for the roadway areas are between 60-70 and 80-85 dBA, with an estimated 85-95 dBA for the railroad. The nearest sensitive noise receptors (human) to the proposed Bikeway project include residential developments in ‘Ewa, West Loch, Ko ‘Olina and Waipi‘o and people present in the beach parks, schools and homes on the Wai‘anae coast. Sensitive wildlife may be present along the proposed bikeway in the wetlands, stream and estuarine areas of West Loch and other undeveloped locale.

Use of the Bikeway by cyclists and pedestrians is not expected to be a significant source of ambient noise. Ambient noise in the proposed project area is generated from natural and man-made sources. Because of various uses throughout the project corridor, some areas are more subject to noise than others. Urban and resort areas are subject to more human-generated noise, which includes vehicular traffic, recreational activities, and individual home and business uses. Along the coastal corridor of the project, remote noise from aircraft combined with naturally occurring sounds from wind and other sources generates relatively low background noise.

Construction activities for the Bikeway will generate noise which could impact nearby areas. Noise levels of diesel powered construction equipment typically range from 80 to 90 dBA at 50 feet distance. The actual noise levels produced are dependent on the construction methods

employed during each phase of the construction process. Earth moving equipment, that may include diesel engine powered bulldozers, trucks, backhoes, front-end loaders, graders, etc., will probably be the noisiest equipment used during construction. Pile driving or blasting are not anticipated.

Pertaining to the Overlook portion of the project, ambient noise levels at the Refuge units are relatively low, in the range of 40 to 50 dBA or less. Occasionally low flying aircraft will disrupt the quiet of the Refuge Units, particularly at Waiawa Unit, although the Honoʻuliʻuli Unit borders the flight path to Honolulu International Airport. (USFWS, 2010).

Potential Effects and Proposed Mitigation

All project activities will comply with HAR Chapter 11-46, Community Noise Control. Excessive noise levels generated by construction activities will require that a noise permit be filed with the DOH, Noise, Radiation and Indoor Air Quality Branch. The provisions of the noise permit will require that contractors use mufflers on all combustion powered construction vehicles and machinery, and maintain all noise attenuation equipment in good operating condition. Faulty equipment will be repaired or replaced. Additionally, trucks and other construction vehicles will be routed to avoid residential communities whenever possible.

Construction of the proposed project will introduce increased noise in the area immediately surrounding the project site from work crews and the operation of construction equipment. The scope and scale of the work is not likely to generate construction-related noise at a level that would adversely affect nearby businesses or roadway travelers. Mitigative measures to minimize or reduce potential noise impacts will include limiting construction activities to daylight working hours outside of peak traffic periods from about 8:30 am to 3:30 pm and inspecting all combustion powered machinery to ensure the equipment is in proper working order and muffled in accordance with law.

Under current permit procedures, noisy construction activities are normally restricted to the hours between 7:00 AM and 6:00 PM, Monday through Friday, and between 9:00 AM and 6:00 PM on Saturday. Construction activities and use of heavy equipment will be scheduled as much as possible during daylight hours to avoid disturbing area residents during the evening. If work during the nighttime hours is required, a variance from the existing state noise regulations will be requested from the DOH. Construction activities will be suspended on Sundays and during holidays.

Public viewing of PHNWR natural resources is considered a “quiet activity” undertaken to avoid disturbance to water birds. Noise levels are not expected to change as a result of the project.

Potential Impacts of Alternatives

No significant impacts are expected to result from this project.

3.1.13 Air Quality

The State of Hawaiʻi has attained National Ambient Air Quality Standards established by the EPA to protect human health and welfare. In addition, the State complies with its own set of ambient air quality standards which are more stringent than EPA’s. There are no air quality

issues related to the use of the site for a shared pedestrian-bikeway facility or public use of the Overlook site, because the facilities will not be utilized by motorized vehicles capable of generating exhaust.

During construction, there are potential pollutants that may affect air quality at the project site, including the following:

- Vehicular traffic traveling to and from the project area (additional sources of CO and CO_2);
- Fugitive dust emissions from excavation and construction;
- Soil and concrete/asphalt removal or placement (particulate); and
- Removal of sediment (possible odor issues if the sediment is from an anaerobic environment).

Because conditions in the project area attain air quality standards, vehicles to be used during construction activities represent a very minor increase in the number of vehicles traversing the area daily. Additionally, the prevailing tradewinds rapidly carry pollutants offshore limiting the effect on receptors.

Potential Effects and Proposed Mitigation – Leeward Bikeway

Potential cumulative effects to air quality include the beneficial effect of a reduction in emissions from internal combustion engines as a result of increased use of non-motorized modes of transportation. No long-term negative consequences related to air quality are expected as a result of the project. The project may result in some small long-term benefits to air quality through increased use of bicycles by commuters, causing a reduction in vehicle exhaust.

Construction vehicles will be scheduled to arrive and depart the site during non-peak traffic hours. In addition, the construction area will be limited to a short segment of the former OR&L ROW at any given time, and much of that ROW does not abut air pollution receptors such as homes and businesses.

State air pollution control regulations require that there be no visible fugitive dust emissions at the construction site boundary. Therefore, an effective dust control plan will be implemented by the project contractor to ensure compliance with HAR, Chapter 11-59 and 60. Fugitive dust emissions can be controlled to a large extent by watering of active work areas, using wind screens, keeping adjacent paved roads clean, and by covering open-bodied trucks. Dust control measures will include, but not be limited to, the following:

- Planning phases of construction to minimize dust generating activities.
- Minimizing the use of dust generating materials and centralizing material transfer points and on-site vehicle travel ways.
- Locating dusty equipment in areas of least impact.
- Providing an adequate water source at the site prior to start-up of construction activities.
- Grassing bare areas, including slopes, starting from the initial grading phase.

- Providing adequate dust control measures during weekends, after hours, and prior to daily start-up of construction.
- Mitigating construction-related exhaust emissions by ensuring that project contractors properly maintain their internal combustion engines and comply with HAR Chapters 11-59 and 11-60, regarding Air Pollution Control.

Potential Effects and Proposed Mitigation – Betty Nagamine Bliss Memorial Overlook

There would be an insignificant amount of fugitive dust and other minor pollutant emissions during construction related to the occasional use of gas-powered tools and vehicles at the site under the action alternative.

Potential Impacts of Alternatives

No significant impacts are expected to result from this project.

3.2 Biological Environment

3.2.1 Fauna – Leeward Bikeway

Much of the alignment of the former OR&L ROW traverses urbanized areas, and does not contain habitat for rare or listed threatened or endangered species. Common animals observed along the alignment include mongooses, black rat (*Rattus rattus*) and Polynesian rat (*R. exulans*). Rats prey on birds and their eggs and nestlings. Other exotic species of mammal are the house mouse (*Mus muscula*), dogs (*Canis familiaris*), and cats (*Felis catus*).

The habitat within the Bikeway alignment is dry with standing water present only at the muliwai at Nānākuli Stream and Keaneoio Gulch. A previous avifaunal study observed a total of 14 species along the Bikeway alignment, with all but three alien to the Hawaiian Islands. The Ruddy Turnstone, Wandering Tattler, and Pacific Golden Plover are common indigenous immigrants in this area (Earth Tech, 2000).

Potential Impacts and Mitigation

The construction of the proposed Bikeway is not anticipated to result in adverse effects to any protected avifauna or terrestrial fauna species. There is no designated critical habitat in the project area. The portion of the ROW extending west from Waipi‘o Depot Road to approximately the western boundary of Waipahu Intermediate School passes close to the PHNWR and wetland areas used by at least two endangered endemic waterbirds for resting and foraging. These areas do not function as primary habitat for avifauna or terrestrial fauna and are not expected to be adversely affected by use of the Bikeway following construction.

The impacts to aquatic biota, plants, birds, and terrestrial mammals for both the Bikeway and the Overlook will be short-term and related to construction activities such as clearing of vegetation and noise associated with the proposed action.

Potential adverse effects to avifauna and terrestrial fauna could result from the Bikeway functioning as a vector for the dispersal of competing, invasive animal species. Unrestrained dogs on the path also pose a potential threat to wildlife in adjacent areas.

The natural drainage flow will be maintained for aquatic biota, vegetation will be inspected for nesting birds prior to clearing activities, and the use of the wetland-type area will be held to a minimum. Construction activities may disrupt loafing activities of native birds. The muliwai contained in the Bikeway area are not primary habitats for waterbirds and loafing behavior is expected to resume after construction. Construction activities would also cease and/or be redirected in the event that nesting birds are encountered.

The noise and activity associated with constructing the proposed Bikeway along this section may cause Hawaiian stilt and Hawaiian duck populations to vacate the loafing area during the course of construction. However, there is adequate comparable habitat within relatively close proximity to the site to provide alternate loafing areas for any potentially displaced birds. It should be noted that "loafing areas" are not primary habitats for the birds; they are used primarily for resting and socializing. Nesting and feeding occur elsewhere. If there is no additional mechanical and/or human disturbance of the area during construction, the waterbirds may become acclimated to the construction activity. Additionally, it is logical to assume that following the completion of construction and the restoration of the site there will be no long term effects to Hawaiian stilts or Hawaiian ducks.

During the clearing and construction phase of the project, project activities will cease if any nesting threatened and endangered species are determined to be in the area. The DLNR and the USFWS will be contacted for guidance before proceeding. Following completion of the proposed project, the area will be restored and revegetated to as close to its original condition as possible. Areas of restoration are expected to recover quickly based on the favorable climate and soil conditions.

The following mitigation measures were developed in consultation with USFWS, NMFS, and DOFAW for a comparable coastal bike path project and will be evaluated during formal consultation under the Endangered Species Act, Section 7.

Avoidance

The planned path alignment will avoid the vegetated areas along the coastal bluff where Wedge-tail Shearwater and Nēnē are known to nest. No critical habitat is present in the project area.

Fencing

Creation of a dedicated, recreational path will eliminate the informal paths that currently thread through the nesting grounds to access the shoreline. Fencing will be used in selected locations to maintain protection of adjacent areas such as the wetland.

Lighting Minimization

- Designed lighting will be kept to the minimum required for safety and security.
- Lighting will use low-intensity sources that emit long wavelength light (e.g. yellow or amber globes).
- Permanent light sources will be shielded and angled downward to eliminate glare that could disturb or disorient animals.

Signage

- Signs will be installed at appropriate intervals and locations along the path.
- Signage content will include:
  - Education about protected species' status, biology, habitat, seasonal behavior.
  - Education about threats to protected species, including: human interaction (harassment, feeding, habitat destruction), loose dogs and other feral animals.
  - Emphasize keeping dogs on leash, including citation of individual liability and penalties. Consider inclusion of a photograph showing birds killed by dogs.
  - Instructions on what to do if a downed bird or fledgling is encountered with contact information for the following agencies.
    1. Downed or Injured Seabird or Waterbird: USFWS, 808-792-9400)
    2. Downed Shearwater: Save Our Shearwaters, 808-246-4348)
  - Information about local, state and Federal laws and penalties
  - Logos of participating agencies – USFWS, NMFS, City and County of Honolulu, State of Hawai‘i, others as appropriate.

Construction Activities

- The USFWS will be consulted to inspect the site for nesting Hawaiian water birds before the onset of the nesting season and not more than three days before construction activities begin and after any delay in work of three or more days (during which water birds may attempt nesting) during the nesting season.
- If a nest is discovered, work will cease within a minimum radius of 100 feet of the nest for a minimum of 60 days; if a nest with chicks is discovered, work will cease for 30 days. These standard guidelines are intended to protect chicks, and may be shortened if monitoring is conducted often enough to note when chicks have fledged (usually five to six weeks after hatching).
- If a previously undiscovered nest is found after work begins, work will cease within a minimum radius of 100 feet of the nest and USFWS will be contacted (808-792-9400) within 24 hours.
- Information about seabird fallout will be provided to all staff working on the site prior to the initiation of work.
- A cat kennel will be kept on site during construction to temporarily hold downed seabirds.
- Contact USFWS (808-792-9400) within 24 hours of finding a downed seabird. If alive, place the bird in the cat kennel and contact Save Our Shearwaters (808-246-4348) immediately for further instruction on where to bring the bird.
- The following recommended BMPs for Construction activities will be incorporated into the project as appropriate to minimize impacts on protected resources:
  - Turbidity and siltation from project-related work should be minimized and contained to within the vicinity of the site through the appropriate use of

effective silt containment devices and the curtailment of work during adverse tidal and weather conditions.

- Any construction-related debris that may pose an entanglement hazard to protected species must be removed from the project site if not actively being used and/or at the conclusion of the construction work.
- No project-related materials (fill, revetment rock, pipe, etc.) should be stockpiled in the water (intertidal zones, reef flats, stream channels, etc.).
- Any project-related materials and equipment placed in the water are to be free of pollutants.
- No contamination (trash or debris disposal, alien species introductions, etc.) of marine environments (reef flats, lagoons, open ocean, etc.) adjacent to the project site should result from project-related activities.
- Fueling of project-related vehicles and equipment should take place away from the water. A contingency plan to control the accidental spills of petroleum products at the construction site should be developed. Absorbent pads, containment booms, and skimmers should be stored on-site to facilitate the cleanup of petroleum spills.
- Underlayer fills will be protected from erosion with core-loc units (or stones) as soon after placement as practicable.
- Attempts must be made to prevent discharge of dredged material into the marine environment during the transporting and off-loading of dredged material.
- Return flow of, or run-off from, dredged material stored at inland dewatering or storage sites must be prevented.

3.2.2 Fauna – Betty Nagamine Bliss Memorial Overlook

Nonnative Fauna

The greatest threats to the wetland ecosystem at the Hono‘uli‘uli Unit are invasive, non-native plants and animals (i.e., predatory small mammals, discarded house plants, and seed dispersal).

Nonnative faunal species found within the PHNWR are shown in **Table 3**.

Table 3. Nonnative Animal Species List, PHNWR

Common Name	Scientific name	Hawaiian Name
Mammals		
Dog	*Canis familiaris*	ʻīlio
Cat	*Felis catus*	pōpoki
Indian mongoose	*Herpestes auropunctatus*	manakuke
House mouse	*Mus musculus*	ʻiole
Polynesian rat	*Rattus exulans*	ʻiole
Norway rat	*Rattus norvegicus*	ʻiole
Black rat	*Rattus rattus*	ʻiole
Fish		
Milkfish	*Chanos chanos*	awa
Cuban molly	*Limia vittata*	
Engel's mullet	*Moolgarda engeli*	
Mullet	*Mugil cephalus*	`ama`ama
Acute-jawed mullet	*Neomyxus leuciscus*	
Sailfin molly	*Poecilia latipinna*	
Shortfin molly	*Poecilia mexicana*	
Gracile lizardfish	*Saurida gracilis*	
Black chin tilapia	*Sarotherodon melanotheron*	
Invertebrates, aquatic		
Asian clam	*Corbicula fluminea*	
Mud crab	*Scylla serreta*	
Invertebrates, terrestrial		
Waterstrider	*Halobates hawaiiensis*	
Midge	*Chironomus spp.*	
Midge	*Polypedilum nubifer*	
Cane spider	*Heteropoda venatoria*	
Rambur's forktail damselfly	*Ischnura ramburii*	
Lesser brown scorpion	*Isometrus maculatus*	kopiana
Centipede	*Scolopendra subspinipes*	kanapī
Reptiles and Amphibians		
Cane toad	*Bufo marinua*	poloka
Common house gecko	*Hemidactylus frenatus*	moʻo ʻalā
Red-eared slider	*Trachemys scripta elegans*	

Avifauna

The Waipiʻo Peninsula fostered sugarcane production until 1994. The man-made wetlands associated with sugar cane on the peninsula supported large numbers of waterbirds. The area was also a major migratory shorebird and waterfowl stopping off point between September and April each year. However, between 1995 and the present, the settling ponds along Pearl Harbor dried up and became overgrown with introduced vegetation. No coastal wetland habitat suitable for waterbirds or shorebirds remains (USFWS, 2010).

Furthermore, the shoreline areas of most of Pearl Harbor are now heavily vegetated with the red mangrove (*Rhizophora mangle*) which virtually eliminates nearshore mudflat habitat. As

mangrove, an introduced species to Hawai‘i, spreads covering intertidal mudflats, local and migratory waterbirds are impacted. Mangrove forms a dense canopied forest blocking list and altering substrate characteristics. The size and quantity of a mangrove forest precludes endangered Hawaiian stilt and other migratory waterbirds that winter in Hawai‘i from feeding in the intertidal zone. The changes resulting from mangrove forests might even impact fish and invertebrates living in this environmental community (USFWS, 2010).

The intertidal zone is important as a foraging area for a variety of waterbirds because of the quantity and diversity of invertebrates occupying this habitat and eaten by water-dependant birds and other organisms. Increased foraging habitat and food resources contribute to the recovery of the endangered Hawaiian stilt and provide wintering foraging habitat important to overwintering migratory waterbirds from thousands of miles away (USFWS, 2010).

The artificial aquatic ecosystems at the Hono‘uli‘uli Unit and Waiawa Units of the PHNWR are currently some of the best freshwater marshes in O‘ahu and are particularly significant in light of reduced habitat for waterbirds elsewhere in the vicinity (USFWS, 2010).

Considering the small area of each of the PHNWR Units, wildlife resources are quite diverse with ample representatives from invertebrate and vertebrate groups. The diversity is achieved through regular active management aimed at providing food, cover, and nesting habitat required by the wetland wildlife. While management focuses on the endangered waterbirds, a host of other species benefit from the management. **Table 3** above, provides the species list of non-avian animals found in the PHNWR**.**

Field surveys by the USFWS have documented the presence of at least 81 bird species utilizing the Refuge. Of these, 54 species are water-related species requiring wetland environments. Some are resident while many are migratory, spending the Fall, Winter and early Spring on the refuge. Six resident waterbirds occur regularly, including the four native endangered waterbirds. Forty-eight of the waterbird species are migratory. The resident Hawaiian short-eared owl, State listed as endangered also occurs on the refuge intermittently. Migratory shorebirds averaged about 10 individuals at any one time with numbers of some individuals as high as 70.

A variety of nonnative birds are established in the project area including the Shama Thrush (*Copsyshus malabaricusi),* Japanese Bush Warbler (*Cettia diphone*), Japanese White-eye (*Zosterope japonicas japonicus*), Red Vented Bulbul (*Pycnonotus cafer*), Red-whiskered Bulbul (*Pycnonotus jocosus*), Common Mynah (*Acridotheres tristis*), Spotted Dove (*Streptopelia chinensis*), Zebra Dove (*Geopelia striata*), and the Barn Owl (*Tyto alba*).

Table 4 on the following pages provides the species list for avifauna at the PHNWR (USFWS, 2010).

Table 4. Avifauna Species List, PHNWR

Avifauna (E) = Federally listed as Endangered; (E*) = State listed as endangered on Oahu		
Common Name	**Scientific Name**	**Hawaiian Name**
Plovers & Dotterels		
Black-bellied Plover	*Pluvialis squatarola*	
Pacific Golden-Plover	*Pluvialis fulva*	kōlea
Semipalmated Plover	*Charadrius semipalmatus*	
Killdeer	*Charadrius vociferus*	
Avocets & Stilts		
Hawaiian Stilt (E)	*Himantopus mexicanus knudseni*	ae‘o
Sandpipers & Phalaropes		
Greater Yellowlegs	*Tringa melanoleuca*	
Lesser Yellowlegs	*Tringa flavipes*	
Wandering Tattler	*Heteorscelus incanus*	‘ūlilī
Spotted Sandpiper	*Actitis maclaria*	
Black-tailed Godwit	*Limosa limosa*	
Bar-tailed Godwit	*Limosa lapponica*	
Ruddy Turnstone	*Arenaria interpres*	‘akekeke
Red Knot	*Calidris canutus*	
Sanderling	*Calidris alba*	hunakai
Semipalmated Sandpiper	*Calidris pusilla*	
Western Sandpiper	*Calidris mauri*	
Least Sandpiper	*Calidris minutilla*	
Pectoral Sandpiper	*Calidris melanotos*	
Sharp-tailed Sandpiper	*Calidris acuminata*	
Solitary Sandpiper	*Tringa solitaria*	
Marsh Sandpiper	*Tringa stagnatilis*	
Dunlin	*Calidris alpina*	
Stilt Sandpiper	*Calidris himantopus*	
Ruff	*Philomachus pugnax*	
Short-billed Dowitcher	*Limnodromus griseus*	
Long-billed Dowitcher	*Limnodromus scolopaceus*	
Common Snipe	*Gallinago gallinago*	
Wilson’s Phalarope	*Phalaropus tricolor*	
SEABIRDS & GULLS		
Great frigatebird	*Fregata minor*	‘iwa
Laughing gull	*Leucophaeus atricilla*	
Bonaparte's gull	*Chroicocephalus philadelphia*	
Ring-billed gull	*Larus delawarensis*	
Herring gull	*Larus argentatus*	

Table 4. Avifauna Species List, PHNWR (continued)

HERONS & IBIS		
Great blue heron	*Ardea herodias*	
Snowy egret	*Egretta thula*	
Cattle egret	*Bubulcus ibis*	
Black-crowned night-heron	*Nycticorax nycticorax*	ʻaukuʻu
White-faced ibis	*Plegadis chihi*	
GEESE & DUCKS		
Greater white-fronted goose	*Anser albifrons*	
Black brant	*Branta bernicla*	
Cackling goose	*Branta hutchinsii*	
Canada goose	*Branta canadensis*	
Gadwall	*Anas strepera*	
Eurasian widgeon	*Anas penelope*	
American widgeon	*Anas americana*	
Mallard	*Anas platyrhynchos*	
Hawaiian duck **(E)**	*Anas wyvilliana*	Koloa maoli
Blue-winged teal	*Anas discors*	
Northern shoveler	*Anas clypeata*	Koloa mohā
Northern pintail	*Anas acuta*	Koloa māpu
Garganey	*Anas querquedula*	
Green-winged teal	*Anas carolinensis*	
Canvasback	*Aythya valisineria*	
Ring-necked duck	*Aythya collaris*	
Tufted duck	*Aythya fuligula*	
Greater scaup	*Aythya marila*	
Lesser scaup	*Aythya affinis*	
Bufflehead	*Bucephala albeola*	
DIURNAL RAPTORS		
Osprey	*Pandion haliaetus*	
Northern harrier	*Circus cyaneus*	
Peregrine falcon	*Falco peregrinus*	
UPLAND GAME BIRDS		
Gray francolin	*Francolinus pondicerianus*	
Ring-necked pheasant	*Phasianus colchicus*	
GALLINULES & COOTS		
Hawaiian moorhen (E)	*Gallinula chloropus sandvicensis*	'alae 'ula
Hawaiian coot (E)	*Fulica alai*	ʻalae keʻokeʻo
PIGEONS & DOVES		
Rock pigeon	*Columba livia*	
Spotted dove	*Streptopelia chinensis*	
Zebra dove	*Geopelia striata*	
Mourning dove	*Zenaida macroura*	
OWLS		
Barn owl	*Tyto alba*	
Hawaiian Short-eared Owl (E*)	*Asio flammeus sandwichensis*	pueo

Table 4. Avifauna Species List, PHNWR (continued)

BULBULS		
Red-vented bulbul	*Pycnonotus cafer*	
BUSH-WARBLERS		
Japanese bush-warbler	*Cettia diphone*	
White-rumped shama	*Copsychus malabaricus*	
MYNAS		
Common myna	*Acridotheres tristis*	
WHITE-EYES		
Japanese white-eye	*Zosterops japonicus*	
CARDINALS		
Northern cardinal	*Cardinalis cardinalis*	
Red-crested cardinal	*Paroaria coronata*	
FINCHES		
Saffron finch	*Sicalis flaveola*	
House finch	*Carpodacus mexicanus*	
SPARROWS		
House sparrow	*Passer domesticus*	
Java sparrow	*Padda oryzivora*	
WAXBILLS & MANNIKINS		
Common waxbill	*Estrilda astrild*	
Red avadavat	*Amandava amandava*	
Nutmeg mannikin	*Lonchura punctulata*	
Chestnut munia	*Lonchura atricapilla*	

Table 5 provides the USFWS Rare, Threatened and Endangered Species List for animals within the PHNWR.

Table 5. Rare, Threatened and Endangered Species List, PHNWR

Scientific Name	Common Name	Origin	Hawaiian Name
Avocets & Stilts			
Himantopus mexicanus knudseni	Hawaiian Stilt	End. (E)	ae‘o
Ducks			
Anas wyvilliana	Hawaiian duck	End. (E)	Koloa maoli
Gallinules & Coots			
Gallinula chloropus sandvicensis	Hawaiian moorhen	End. (E)	'alae 'ula
Fulica alai	Hawaiian coot	End. (E)	‘alae ke‘oke‘o
Owls			
Asio flammeus sandwichensis	Hawaiian Short-eared Owl	End. (E)	pueo
Native Plants			
Arecaceae			
Pritchardia remota		End. (E)	Loulu
Boraginaceae			
Heliotropium curassavicum	Seaside heliotrope	Ind.	
Convolvulaceae			
Jaquemontia ovalifolia	Oval-leafed clustervine	Ind.	pā‘ūohi‘iaka
Cucurbitaceae			
Sicyos sp.	‘Ānunu	End.	‘Ānunu
Cyperaceae			
Bolboschoenus maritimus	kaluhā	Ind.	kaluhā
Mariscus javanicus	Marsh cyprus	Ind.	‘ahu‘awa
Cyperus laevigatus		Ind.	makaloa
Cyperus polystayscos	flatsedge	Ind.	
Fabaceae			
Sesbania tomentosa		End. (E)	‘ohai
Malvaceae			
Abutilon menziesii	Red ilima	End. (E)	Ko‘oloa‘ula
Sida fallax	Yellow ilima	Ind.	‘ilima
Thespesia populnea	Milo	Ind.	milo
Nyctaginaceae			
Boerhavia repens	Alena	Ind.	alena
Poaceae			
Sporobolus virginicus	Beach dropseed	Ind.	‘aki‘aki
Potamogetonaceae			
Ruppia maritima	Widgeon grass	Ind.	
Scrophulariaceae			
Bacopa monnieri	Water hyssop	Ind.	‘ae‘ae
Solanaceae			
Solanum americanum	Popolo	Ind.	popolo
Sterculiaceae			
Waltheria indica	‘Uhaloa	Ind.	‘uhaloa

* The taxonomy and nomenclature of the plants are in accordance with Wagner et al. (1999).

Table 6 summarizes data relative to sightings as indicators of the population of various endangered waterbirds in the Hono'uli'uli Unit of the PHNWR (USFWS, 2010).

Table 6. Average and Peak Endangered Waterbird Numbers, PHNWR, 2000-2009

Source: PHNWR Files

	Hawaiian Stilt	Hawaiian Coot	Hawaiian Moorhen	Hawaiian Duck*
Maximum Population	155	389	6	18
Average Population	48	120	2	1

Notes: Hawaiian duck numbers cannot be used with confidence. Variation in observable characteristics and genetic testing in lowland wetlands in Hawai'i suggest most, if not all birds are mallard x Hawaiian duck hybrids (USFWS, 2010; Source: PHNWR Files)

Native Insects

Very little survey work has been done on the current status and distribution of native insects at the PHNWR Refuge. The candidate crimson Hawaiian damselfly (*Megalagrion leptodemas*) has been reported. Other types of native insects that are likely found within the proposed Refuge include the native Kamehameha butterfly, moths, flies, dragonflies, spiders, beetles, etc. (USFWS, 2010).

Aquatic Fauna

Native aquatic species reported from streams include the indigenous goby or 'o'opu nakea (*Awaous guamensis*), an endemic shrimp or 'opa'e kalaole (*Atyoides bisulcata*), and a native freshwater sponge (*Heteromyenia baileyi*). Other native aquatic animals may include the larval stages of damselflies as well as other insects, worms, snails and other wildlife associated with riparian and aquatic habitats (USFWS, 2010).

Fishes include a variety of introduced aquarium species including swordtails (*Xiphophorus helleri*), Japanese loach (*Misgurnus anguillicaudatus*), and mosquitofish (*Gambusia affinis*). The giant toad (*Bufo marinus*), Tahitian prawns (*Macrobrachium lar*), and crawfish (*Procambarus clarkii*) are also common (USFWS, 2010).

Potential Effects and Mitigation Measures – Betty Nagamine Bliss Memorial Overlook

The greatest threats to the wetland ecosystem at the Hono'uli'uli Unit are invasive, non-native plants and animals (i.e., predatory small mammals, discarded house plants, and seed dispersal). Information and education are essential to promote support for management actions relating to these threats. The proposed Overlook will provide the opportunities to engage the public and provide information to improve understanding of and reduction of threats to the wetland ecosystem. In addition to learning about wetland resources and their threats, the proposed Overlook would allow the USFWS to acknowledge the partnerships with the Navy and Department of Transportation, Airports Division in the creation and maintenance of the Refuge.

The USFWS will implement BMPs within the PHNWR during construction of the Overlook according to their established protocols for habitat management. The Overlook will be designed to mostly obscure movement by visitors, through use of screening materials to reduce disturbance to wildlife. The sites are close enough to provide adequate views of the wetlands and wildlife without being obtrusive to the wildlife. Construction could be restricted to dates outside of the peak stilt nesting season (April – July) to eliminate disturbance to these sensitive birds. Management of vegetation and water levels on the refuge could also be manipulated to minimize bird use in close proximity of the construction sites (USFWS, 2010).

Informational and educational signage on the path and at the Betty Nagamine Bliss Memorial Overlook will be used to raise public awareness and support for management actions related to threats. In compliance with ESA Section 7, HDOT will consult with the USFWS throughout the project development period and afterwards through its partnership on the Overlook to support programs that raise public understanding and support for efforts to eradicate threats to protected avifauna and terrestrial fauna species.

Potential Impacts of Alternatives

The No Action alternative for the Overlook assumes the continuation of current management actions at the Refuge. The site for Alternative 2 (Waiawa Unit) is more upland and would not include mangrove removal although other exotic vegetation would need to be removed.

3.2.3 Flora – Leeward Bikeway

A botanical and wetlands botanical survey was completed at the project area as part of previous FEA for the Leeward Bikeway. The flora study area included the former OR&L ROW, and the areas bordering it. Also included in the project area were wetlands bordering the ROW, stream estuaries and muliwai (coastal salt marshes) within and downstream of the ROW. The botanical survey was completed to document the species of plants observed along the railroad ROW and to provide estimates of their abundance. Endangered species listed by the USFWS as well as native plants, which are increasingly rare in lowland, coastal and urban areas of Hawai‘i, were given particular attention during the survey. The period of the survey (rainy season) was advantageous in that fast-growing annuals were readily observed. However, there is still a possibility that some species may have remained dormant, and therefore, not observed. For the survey of the flora, the study area was divided into three main study areas (same as biological surveys): the Pearl Harbor Shore, the ‘Ewa Plain, and Wai‘anae Coast. Several different vegetation types were encountered in these areas including:

- Cultivated/fallow lands (former sugar cane fields)
- Occupied lands (residential, industrial, commercial, recreational and roadways)• Strand vegetation (pockets of coastal ecosystem plants)
- Wetland vegetation (mangrove, pickleweed swamp, cattail and salt marsh) and
- Inland ecosystems (kiawe forest, koa haole scrub, and weedy communities)

'Ewa Plain

Extending from the southwestern end of the West Loch Bike Path to the Wai'anae coast, flora on the 'Ewa Plain portion of the project area is characterized by inland ecosystems, cultivated/fallow lands and occupied land. The indigenous 'ilima plant was present along the south side of the tracks, north of Kalaeloa.

Wai'anae Coast

This portion of the Bikeway alignment contains vegetation typical of strand vegetation, occupied land and inland ecosystems. In open areas between 'Manners' and Pili o Kahe Beach Parks, buffel grass dominates; however, ma'o or Hawaiian cotton is also present as well as the 'ilima. In general, endangered species were not encountered along the railroad ROW.

Pearl Harbor Shore

The portion of Bikeway extending from Waipi'o Point Access Road to the West Loch Bike Path is substantially different from the other portions of the study area due to its position near the estuarine waters of Pearl Harbor. Typical vegetation types across this portion of the study area include occupied lands and wetland vegetation comparable to those found within the PHNWR.

Potential Impacts and Mitigation – Leeward Bikeway

The construction of the proposed Bikeway is not anticipated to result in adverse impacts to any protected plant species. No negative impact on plant habitats or specific plant communities along the corridor is expected. However, certain measures will be taken to promote native vegetation in the project area.

Construction of the proposed Bikeway will have short-term impacts on vegetation along the project area. No threatened or endangered plants have been observed; the occurrences of native plants were rare due to the weedy plant species that dominate the previously disturbed environment. Two exceptions to this were the presence of native plant areas and wetland-type areas. Near a segment of the Wai'anae Coast between Manners Beach Park and Pili o Kahe Beach Park in Nanakuli, approximately a dozen endemic shrubs of ma'o (native cotton, *Gossypium sandvicense*) were present. Another area with species of interest was near the west end of the north fence line of the former BPNAS or Kalaeloa area where numerous large 'ilima (sedge/flax) plants were found growing.

Biological survey results report that the proposed construction activities would most likely disturb the wetland-type areas associated with the project area in the West Loch area and stream and muliwai crossings, but are not expected to cause significant long-term effects. The wetlands lying close to the project area are of generally poor quality, in part because of access afforded to those who dump illegally, and in part because of poor water circulation in what were once Hawaiian fishponds, arising from extensive growth of mangrove, an introduced species.

Once the Bikeway is completed, signage is recommended to provide information on the plants and caution hikers and bicyclists about damaging the plants. To the extent possible, disturbed areas will be revegetated with indigenous plant species to reduce erosion. Additionally, all project-related materials will be placed or stored in ways t avoid or minimize disturbance to the sensitive vegetation areas.

The impacts to aquatic biota are anticipated to be short-term and related to construction activities. Nearly all the proposed bridges for the project (3 in the Nanakuli/Kahe area and two in the ‘Ewa Plain) cross normally dry gulches. The construction activities for the proposed bridges over the Waikele and Kapakahi Streams will result in increased turbidity at the site and will negatively affect the local aquatic population. The construction of these new spans will not have significant long-term impacts on either estuary. It is anticipated that the existing stream ecology will re-establish itself following the completion of these activities. It is also anticipated that aquatic species will not suffer long-term negative effects from increased short-term turbidity because of the existing degraded and silted condition of their habitat.

Erosion control best management practices (BMPs) will be used to control turbidity and minimize negative impacts to stream and wetland habitats. Natural drainage flows will be maintained for the duration of the project so as not to affect the movement of fish and other aquatic species upstream and downstream of the project site.

Since proposed Bikeway alignment is situated along wetland areas and Pearl Harbor, mitigation should include the following:

- Site work should be scheduled for period of minimal rainfall.
- Areas denuded of vegetation should immediately be replanted or covered as quickly as possible to control erosion.
- Construction materials, petroleum products, debris and landscaping products should be prevented from falling, blowing, or leaching into the aquatic environment.

3.2.4 Flora – Betty Nagamine Bliss Memorial Overlook

The Hono‘uli‘uli Unit of the PHNWR has been highly modified by human activities and invasive non-native plants. Hono‘uli‘uli was originally bordered by sugar cane fields. Thickets of exotic trees, primarily kiawe are prevalent. This brush can harbor mongoose, feral dogs and cats, and rats. Nonnative plants and animals are one of the primary threats to the Refuge. Nonnative plants compete with native species for space, light, water, and nutrients. These include Haole koa (*Leucaena leucocephala*), Kiawe (*Prosopis sp.*), and the red mangrove (*Rhizophora mangle*), along with several grasses and herbaceous plants. Approximately 20,000 square feet of mangrove and 8,700 square feet of kiawe will be removed as part of this project. The mangrove will be removed through non-invasive methods to kill the exotic trees while leaving the roots intact to minimize disturbance to waters. The remaining exotic trees may be removed through the use of an excavator. Best Management Practices will be employed throughout the process. (USFWS, 2010).

Through adaptive management on the Hono‘uli‘uli Unit several native wetland plants have been encouraged to grow from dormant seeds in the soil. The most common natives that have appeared are `ahua `awa (*Cyperus javanicus*), Aki aki grass (local name) or Seashore dropseed (*Sporobolus virginicus*), Makai (*Bolboschoenus maritimus*), Makaloa (*Cyperus laevigatus*), Pa‘uohi‘i aka (*Jacquemontia ovalifolia*), Water hyssop (*Bacopa monnieri*), and Kipukai (*Heliotropium curassavicum*). Native species have been replaced by exotic ecosystems. Among the predominant invasive weeds at the Refuge are *Pluchea sp.* and Knotweed (*Paspalum distichum*) (USFWS, 2010).

Non-native plants encountered within the PHNWR are listed in **Table 7**.

Table 7. Non-Native Plants, PHNWR		
Non-native plants		
Scientific Name	Common Name	Hawaiian Name
Alternanthera pungens	khaki weed	none
Amaranthus aspera		
Amaranthus spinosus	spiny amaranth	pakai kuku
Amaranthus viridis	Slender amaranth	
Asystasia gangetica	Chinese violet	none
Atriplex semibacatta	Australian saltbush	none
Batis maritima	saltwort, pickleweed	‘akulikuli
Bidens alba	beggertick	
Bidens pilosa	beggertick	
Calyptocarpus vialis		
Chloris barbata	Swollen finger grass	
Coccinia grandis	Scarlet-fruited gourd	
Cynodon spp.	Bermuda grass	none
Desmanthus virgatus	Virgate mimosa	
Echinochloa sp.	wild millet, millet	none
Eleocharis geniculata	spikerush, bent spikerush	none
Ipomoea alba	moonflower	
Ipomoea cairica	Five-fingered morning glory	
Ipomoea obscura		
Ipomoea trilobata	Little bell	
Leptochloa uninervia.	sprangletop	none
Leucana leucocephala	none	koa haole
Panicum maximum	Guinea grass	none
Paspalum disticum	knot-grass	none
Passiflora foetida	Red-fruited passion flower	
Pluchea indica	marsh fleabane	none
Pluchea carolinensis	marsh fleabane	none

Table 7. Non-Native Plants, PHNWR		
Non-native plants		
Pritchardia remota	none	loulu
Prosopis pallida	mesquite	kiawe
Rhizophora mangle	Red mangrove	
Ricinus communis	Castor bean	
Sesbania tomentosa	none	ohai
Setaria verticillata	Bristly foxtail	
Sida spinosa	Spiny sida	
Typha sp.	cattail	none

Source: USFWS 2010.
* The taxonomy and nomenclature of the plants are in accordance with Wagner et al. (1999).

Table 8 presents information about the native plant species of PHNWR.

Table 8. Non-Native Plant Species, PHNWR			
Native Plant Species (E) = Endangered			
Scientific Name	Common Name	Origin	Hawaiian Name
Aizoaceae			
Sesuvium portulacastrum	sea purslane	Ind.	ʻākulikuli
Arecaceae			
Pritchardia remota		End. (E)	Loulu
Boraginaceae			
Heliotropium curassavicum	Seaside heliotrope	Ind.	
Convolvulaceae			
Jaquemontia ovalifolia	Oval-leafed clustervine	Ind.	pāʻūohiʻiaka
Cucurbitaceae			
Sicyos sp.	ʻĀnunu	End.	ʻĀnunu
Cyperaceae			
Bolboschoenus maritimus	kaluhā	Ind.	kaluhā
Mariscus javanicus	Marsh cyprus	Ind.	ʻahuʻawa
Cyperus laevigatus		Ind.	makaloa
Cyperus polystayscos	flatsedge	Ind.	
Fabaceae			
Sesbania tomentosa		End. (E)	ʻohai
Malvaceae			
Abutilon menziesii	Red ilima	End. (E)	Koʻoloaʻula
Sida fallax	Yellow ilima	Ind.	ʻilima

Thespesia populnea	Milo	Ind.	milo
Nyctaginaceae			
Boerhavia repens	Alena	Ind.	alena
Poaceae			
Sporobolus virginicus	Beach dropseed	Ind.	ʻakiʻaki
Potamogetonaceae			
Ruppia maritima	Widgeon grass	Ind.	
Scrophulariaceae			
Bacopa monnieri	Water hyssop	Ind.	ʻaeʻae
Solanaceae			
Solanum americanum	Popolo	Ind.	popolo
Sterculiaceae			
Waltheria indica	ʻUhaloa	Ind.	ʻuhaloa

Source: USFWS 2010.
* The taxonomy and nomenclature of the plants are in accordance with Wagner et al. (1999).

Table 9 presents information about the rare, threatened and endangered plant species of PHNWR's Hono'uli'uli Unit.

Table 9. Honoʻuliʻuli Unit, Pearl Harbor National Wildlife Refuge - Rare, Threatened and Endangered Species Lists

Scientific Name	Common Name	Origin	Hawaiian Name
Native Plants			
Arecaceae			
Pritchardia remota		End. (E)	Loulu
Boraginaceae			
Heliotropium curassavicum	Seaside heliotrope	Ind.	
Convolvulaceae			
Jaquemontia ovalifolia	Oval-leafed clustervine	Ind.	pāʻūohiʻiaka
Cucurbitaceae			
Sicyos sp.	ʻĀnunu	End.	ʻĀnunu
Cyperaceae			
Bolboschoenus maritimus	kaluhā	Ind.	kaluhā
Mariscus javanicus	Marsh cyprus	Ind.	ʻahuʻawa
Cyperus laevigatus		Ind.	makaloa
Cyperus polystayscos	flatsedge	Ind.	
Fabaceae			
Sesbania tomentosa		End. (E)	ʻohai
Malvaceae			
Abutilon menziesii	Red ilima	End. (E)	Koʻoloaʻula
Sida fallax	Yellow ilima	Ind.	ʻilima
Thespesia populnea	Milo	Ind.	milo
Nyctaginaceae			
Boerhavia repens	Alena	Ind.	alena

Poaceae			
Sporobolus virginicus	Beach dropseed	Ind.	ʻakiʻaki
Potamogetonaceae			
Ruppia maritima	Widgeon grass	Ind.	
Scrophulariaceae			
Bacopa monnieri	Water hyssop	Ind.	ʻaeʻae
Solanaceae			
Solanum americanum	Popolo	Ind.	popolo
Sterculiaceae			
Waltheria indica	ʻUhaloa	Ind.	ʻuhaloa

Source: USFWS 2010.
* The taxonomy and nomenclature of the plants are in accordance with Wagner et al. (1999).

Potential Impacts and Mitigation – Betty Nagamine Bliss Memorial Overlook

No significant impacts are expected to result from this project. Under the Preferred Alternative for the Overlook, the facility would be a stopping-off place and point of interest along the Bikeway alignment. This feature would require removal of existing mangrove trees along the shoreline immediately in front of the site. The removal of dense exotic mangrove trees recreates a natural tidal flat that attracts and is beneficial to migrant shore birds, as well as Hawaiian stilts (USFWS, 2010).

Temporary disturbance to the site would occur during construction. However, Best Management Practices will be required to minimize impacts to water quality, soil loss and erosion. Vegetation at the sites, primarily exotic species, will be removed as needed for construction but will be replaced with native vegetation as a feature of the project. This native vegetation will be placed and maintained in such a way as to provide a natural screen between the overlook and the wetlands but at a height that will not obstruct the view (USFWS, 2010).

Potential Impacts of Alternatives

No significant impacts are expected to result.

3.3 Existing Public and Private Services and Facilities

3.3.1 Energy Corridor

Starting from the Kalaeloa area, and extending to the Waipahu area, several underground petroleum pipelines are present in the former OR&L ROW. These underground pipelines are located to the south of the tracks in the vicinity of the Kalaeloa area and then north of the tracks near the Hawaiian Railway Society facility through Waipahu. This “energy corridor” applies only to the Bikeway aspect of the project.

Potential Effects and Mitigation Measures – Leeward Bikeway

The energy corridor facilities attached to existing railroad bridges will be accommodated via encasement either beneath or on the side of the bridge. The location of underground petroleum lines will be verified with the respective owners prior to any ground disturbance along the alignment.

Potential Effects and Mitigation Measures – Betty Nagamine Bliss Memorial Overlook

The Overlook will not require relocation or installation of utilities, so no mitigation is needed.

3.3.2 Roadways and Traffic

The Bikeway project is not expected to have adverse effects on roadway facilities. Traffic patterns will not be affected because the Bikeway is strictly for bicyclist and pedestrian use and is almost entirely out of roadway ROWs. At places where the facility crosses several roadways, Bikeway users, including bicyclists and pedestrians, are expected to use the established street crossing infrastructure at existing roadway intersections. Such road crossings on the alignment include:

- Roosevelt Avenue, Kalaeloa (major collector)
- Fort Weaver Road (major arterial)
- Kapolei Parkway (major arterial)
- Waipahu Depot Road (minor collector)
- Waipi‘o Point Access Road (minor collector)

The Overlook aspect of the project is not expected to affect traffic or roadways, as the only access to the facility will be for bicyclists and pedestrians using the established West Loch Bike Path via a short access road within an established State of Hawai‘i easement. Therefore, no mitigation for effects to traffic and roadways is necessary.

Potential Effects and Proposed Mitigation – Leeward Bikeway

Positive transportation opportunities that may be provided by the implementation of the proposed bikeway include the following:

- An alternative transportation mode that provides access between Nānākuli and Waipahu.
- Wai‘anae Coast: Increased access to portions of Nanakuli and Lualualei Valleys will occur as well as schools, businesses and beach parks present along the coast.
- ‘Ewa Plain: Increased access to the Barbers Point Harbor and Marina, Ko ‘Olina Resort, Campbell Industrial Park, The City of Kapolei town center, and State of Hawai‘i offices, parks and residences.
- Waipahu: Increased access to the West Loch coastline, Waipahu town center, parks and residences as well as Waipahu Intermediate, Waipahu High School and bikeway links to Leeward Community College.

In the long-term, creation of a separate and clearly delineated shared-use Bikeway will have a positive impact on traffic by enhancing the safety of pedestrians, bicyclists, and motor vehicle operators alike and improving connectivity between trip origins, such as residential areas, and destinations, such as employment centers and recreational facilities such as parks and beaches.

Perceptions of safety and convenience are two of the key factors that influence an individual's choice of transportation mode. By enhancing both safety and convenience, the planned Bikeway facilities are expected to attract more people to consider bicycling as a viable form of transportation for commuting with a potential, corresponding reduction in motor vehicle congestion as a beneficial result.

The Bikeway also will result in a temporary increase in vehicle trips attributable to workers traveling to and from work sites, and the use of construction vehicles during the course of work. All construction-related traffic impacts are temporary, however, and will cease upon project completion.

The proposed Bikeway will consist of a 9 - 10 foot wide asphalt path with two foot graded shoulders on either the mauka or makai side of the former OR&L railroad tracks. In the limited space left after Bikeway construction, bare dirt will be hydroseeded. Maintenance will be performed by the DOT O'ahu District Maintenance Section, and will include cutting grass and performing repairs.

Potential Effects and Proposed Mitigation – Betty Nagamine Bliss Memorial Overlook

None of the alternatives for the Overlook would have a significant effect on the population or the local community of the planning area. Proposed public use (as envisioned under Alternatives 1 and 2) would be at relatively low levels and would be directly related to roads. Refuge management and low levels of public use would not significantly increase traffic on public or private roads.

Potential Impacts of Alternatives

No significant impacts are expected to result from the alternatives considered for the Overlook.

3.3.3 Fire and Emergency Medical Services

The proposed Bikeway is located in proximity of the Pearl City, Waipahu, Kapolei, and Wai'anae Fire Stations.

Medical services, including emergency care, are available at St. Francis West Hospital in 'Ewa and Pali Momi Hospital in Pearl Ridge.

Potential Effects and Proposed Mitigation

The proposed project is not expected to have an adverse impact on fire, police and medical services. Access will remain open throughout project implementation. The proposed roadway expansion will improve access for emergency vehicles and equipment traveling through the area.

The project is not expected to result in a significant increase in calls for services. Development of a dedicated path is expected to improve bicycle and pedestrian safety by separating those activities from motor vehicle traffic.

Fire apparatus access will be maintained throughout the construction site for the duration of the project. The Honolulu Fire Department will be notified if there is any interruption in the existing fire hydrant system during the project.

With regard to security, access to neighboring properties has existed since the development of the OR&L railroad approximately 100 years ago. With the development of the proposed Bikeway, access will be restricted, a Code of Conduct will be posted and additional police patrols will be requested. At points of entry, unauthorized vehicular entry will be restricted with the placement of pedestrian friendly bollards (barricades). The bollards will be placed at the edges of the Bikeway and at the center of the bikeway to allow pedestrians and bicycles in, but not vehicles. To allow emergency vehicle access, these bollards may be removable or a gate will be placed next to them. Access will also be restricted from dusk to dawn along the Bikeway; lighting will not be provided to discourage night-time use.

For Bikeway users, a Code of Conduct will also be required for safe Bikeway use and to promote protection of neighboring properties. The Code of Conduct will be posted on signs at entry points to the proposed bikeway, and will contain the following directives:

- Stay on the trail in continuous movement.
- Respect rights of all trail users as well as adjacent homeowners and properties.
- Ride single file keeping to the right of the trail.
- Give warning before passing other trail users.
- Only leased pets are welcomed, you must clean up after your pet.
- Unauthorized and motorized vehicles are prohibited.
- Use of radios is prohibited.
- Bikeway hours are from dawn to dusk.
- No dumping, littering or loitering. Please use trash receptacles.
- Do not take or harm any plants or animals; areas outside the trail may contain sensitive plants and animals.
- Use bikeway at your own risk.
- Warning: Golf course ahead.

Currently, the Honolulu Police Department has a temporary bicycle patrol in the Waipahu area. None are located in the ‘Ewa and Wai‘anae areas due to lack of existing bikeways in those regions. With the development of the proposed bikeway, the City and County of Honolulu Council members, Police Department and Mayor as well as the Mayors Advisory Committee on Bicycling will be notified of the requirement for permanent bicycle patrols in the Waipahu, ‘Ewa and Wai‘anae areas in association with the constructed Bikeway.

The creation of the pathway will require additional burdens to be placed on the above discussed public services. The need for “special” patrols by the Police may be required. Access by emergency services may require the identification of access points.

3.3.4 Public Safety and Security

The proposed Bikeway and Overlook involve two police districts. The portion east of Kunia Road will be in District 3, which is headquartered in Pearl City, while the portion west of Kunia Road will be in District 8, headquartered in Kapolei.

Development of the proposed Leeward Bikeway will require security and maintenance measures for the protection and enjoyment of path users and adjacent property owners.

Access to neighboring properties has existed since the development of the OR&L Railroad. With the development of the proposed bikeway, however, access will be restricted, a Code of Conduct will be required and additional police patrols will be requested. At points of entry, unauthorized vehicular entry will be restricted with the placement of pedestrian friendly barricades. The barricades will be placed at the edges of the bikeway and at the center of the bikeway to allow pedestrians and bicycles in, but not vehicles. To allow emergency vehicle access, these barriers may be removable or a gate with locks will be placed next to them. Access will also be restricted from dusk to dawn along the bikeway; lighting will not be provided to discourage night-time use. For bikeway users, the Code of Conduct will maintain safe bikeway use and promote protection of neighboring properties (Earth Tech, 2000).

As indicated, a Code of Conduct is proposed and will be posted on signs at entry points to the proposed bikeway.

The temporary Honolulu Police Department's bicycle patrol in the Waipahu area and none in the ʻEwa and Waiʻanae areas reflects the fact that there are few bikeways in the ʻEwa and Waiʻanae areas. As indicated, with the development of the proposed Bikeway, the City and County of Honolulu Council members, Police Department and Mayor as well as the Mayors Advisory Committee for Bicycles will be notified of the requirement and need for permanent bicycle patrols.

3.3.5 Potable Water

The City and County of Honolulu Board of Water Supply provides water to the Leeward Oʻahu area. The regional potable water system is made up of supply wells, storage reservoirs, booster pump stations, and transmission lines.

Potential Effects and Proposed Mitigation

The proposed project is not expected to have an adverse impact on water service in the area. A temporary increase in water consumption will result from dust control measures implemented during construction. No landscaping is planned that would require ongoing irrigation water.

Water lines extending over existing railroad bridges will be replaced in coordination with the Honolulu Board of Water Supply. Underground pipes, cables, or conduits known to exist are identified on the construction drawings and indicated in the plans. The contractor shall verify the locations and depths of the facilities and exercise proper care in excavating the area.

No new water fountains or other water-using facilities are proposed for the Bikeway or Overlook parts of the project and no landscaping or associated irrigation is planned.

Potential Impacts of Alternatives

No adverse impacts are anticipated to result from the alternatives considered for this project.

3.3.6 Solid Waste

Solid waste collection for residences is provided on O‘ahu by the CCH Department of Environmental Services. Commercial enterprises hire solid waste collection firms to pick up and transport their solid waste.

The primary landfill on O‘ahu is the Waimānalo Gulch Sanitary Landfill which is upland of the Bikeway alignment in Nānākuli. A high percentage of solid waste is incinerated at the CCH’s Garbage to Energy facility. Construction debris is also accepted at the PVT landfill.

During field reconnaissance events, it has been noted that unregulated dumping has occurred in some areas along the Bikeway alignment. Discarded appliances, abandoned cars, and piles of solid waste were noted in the areas from Ko 'Olina to Waipi‘o Point Access Road. Although this debris is not typically hazardous, there is the possibility that hazardous materials may be contained in appliance components (i.e., coolants, gasoline, cleaning solvents, etc.).

Potential Effects and Proposed Mitigation

No impacts to solid waste facilities are anticipated. Construction debris, to the extent feasible, will be re-used on the project site rather than transporting it to a landfill. All other construction debris will be disposed off at an approved landfill.

Construction debris from the project site will be disposed of by the construction contractor or via a private company. The collected waste will be disposed at the City and County of Honolulu’s garbage-to-energy plant or at the Waimānalo Gulch Sanitary Landfill or at a private facility depending on the composition of the waste. Based on a study of past uses of the site it is not anticipated that any hazardous material will need to be disposed of. Construction debris (unused material), rocks and aggregate will be reused on-site to the extent feasible. Items that cannot be re-used will be disposed at an approved disposal facility.

3.3.7 Communications

Hawaiian Telcom has both overhead and underground telecommunications facilities in the project area, as does Oceanic Time Warner Cable.

Potential Effects and Proposed Mitigation

No impacts to cable, television, or telephone infrastructure or services will result from the proposed Bikeway. There will be no long term increase in electricity use because the Bikeway will not be equipped with lighting.

The location of electrical and telecommunication utilities will be identified on construction drawings and the contractor will be responsible for knowing the location of such utilities prior to ground disturbance.

3.3.8 Energy

Several power corridors exist in the project vicinity. Two overhead systems, both owned and operated by the Hawaiian Electric Company (HECO), traverse the ʻEwa Plain parallel with the former OR&L ROW. One of these systems, just south of the ROW, uses large metal poles and carries two 138kV and two 46 kV mounted transmission line circuits. The system just north of the rail line uses wooden poles and carries one 46kV transmission circuit and one 12kV distribution circuit.

Potential Effects and Proposed Mitigation

The relocation or removal of utility poles and appurtenances has been avoided to the extent possible in the project design.

The proposed action will require the use of fossil fuels for the operation of construction equipment and machinery. While this use of fuel cannot be avoided, such use is not expected to be any greater than comparable development projects requiring this resource.

To reduce the release of carbon dioxide and related "greenhouse gas" constituents associated with the use of internal combustion powered equipment, machinery, and vehicles the construction contractor will be required to adhere to the following practices:

- Minimize the idling time of engines that are not in active use.
- Maintain all internal combustion powered equipment, machinery and vehicles in proper working order.
- Utilize fuel efficient equipment, machinery and vehicles, as much as possible and whenever feasible.

Potential Impacts of Alternatives

No adverse impacts are anticipated to result from the alternatives considered for this project.

3.3.9 Parks and Recreational Resources

Recreational resources near the Bikeway alignment include county parks and four 18-hole golf courses (Ted Makalena, West Loch, ʻEwa Villages and Ko ʻOlina). Note that none of these parks is designated for funding under the Land and Water Conservation Fund (LWCF) and therefore consultation under Section 6(f) LWCF, as amended, is not required for this project.

The City and County of Honolulu owns and operates the following parks (from east to west and shown in **Figure 25**).

- Waipiʻo Point Soccer Park
- West Loch Shoreline Park
- Pride Fields
- Kamokila Community park
- ʻEwa Mahiko Park
- Kahe Point Beach Park
- Tracks Beach Park
- Nānākuli Beach Park
- Ulehawa Beach Park

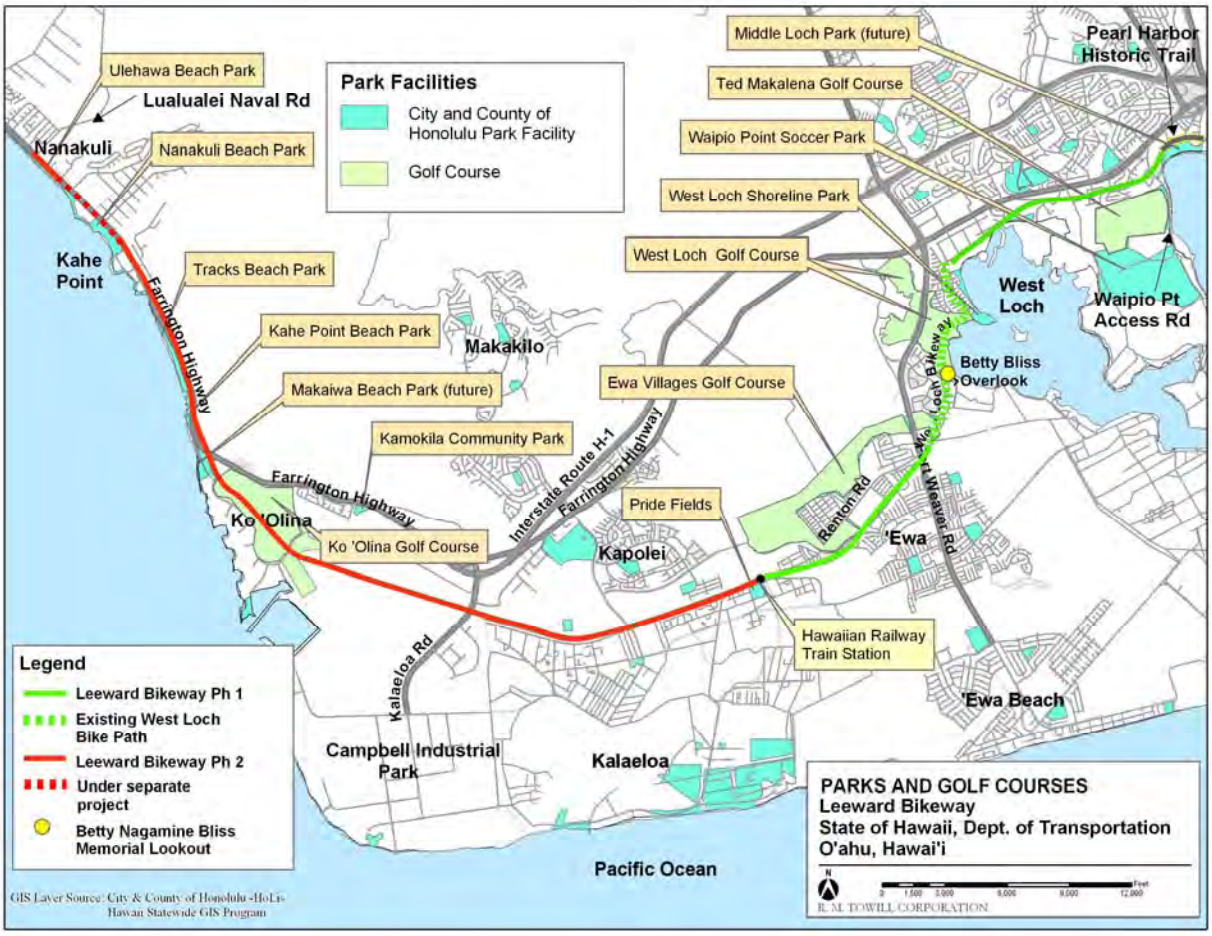

Figure 25. Parks and Golf Courses

In addition to the parks listed above, the CCH as identified two "future" parks, at Middle Loch Park in the Pearl Harbor area and Makaiwa Beach Park on the Wai'anae Coast.

The Bikeway project will create a new outdoor recreational amenity and link regions of O'ahu in the security of a shared-use facility.

The Overlook project will provide a new outdoor recreational amenity and provide access to natural resources that has heretofore been unavailable to the public.

Potential Effects and Proposed Mitigation

Rather than creating adverse effects on parks and recreation, this project will be an enhancement over current conditions and present unique new amenities for leisure activity. It will also link the many parks situated along or near the alignment.

The planned Bikeway will expand outdoor recreational opportunities and enhance existing recreational facilities, and thereby meet one of the recreation priorities of the 2008 Statewide Comprehensive Outdoor Recreation Plan (SCORP).

The Overlook will create a new educational amenity and increase awareness of natural resources of Pearl Harbor.

3.3.10 Schools

Existing public schools within approximately 3,000 feet of the railroad ROW are shown in **Figure 26** and listed below, from the western terminus of the project in Nānākuli to the eastern terminus on the Waipi‘o Peninsula.

Public School	**Area Served**
Nanaikapono Elementary School	Nānākuli
Kapolei High School	Kapolei
Kapolei Intermediate School	Kapolei
Kapolei Elementary School	Kapolei
‘Ewa Elementary School	‘Ewa
Holomua Elementary School	‘Ewa
Waipahu Intermediate School	Waipahu
Waipahu Elementary School	Waipahu
Waipahu High School	Waipahu
Leeward Community College	Pearl City

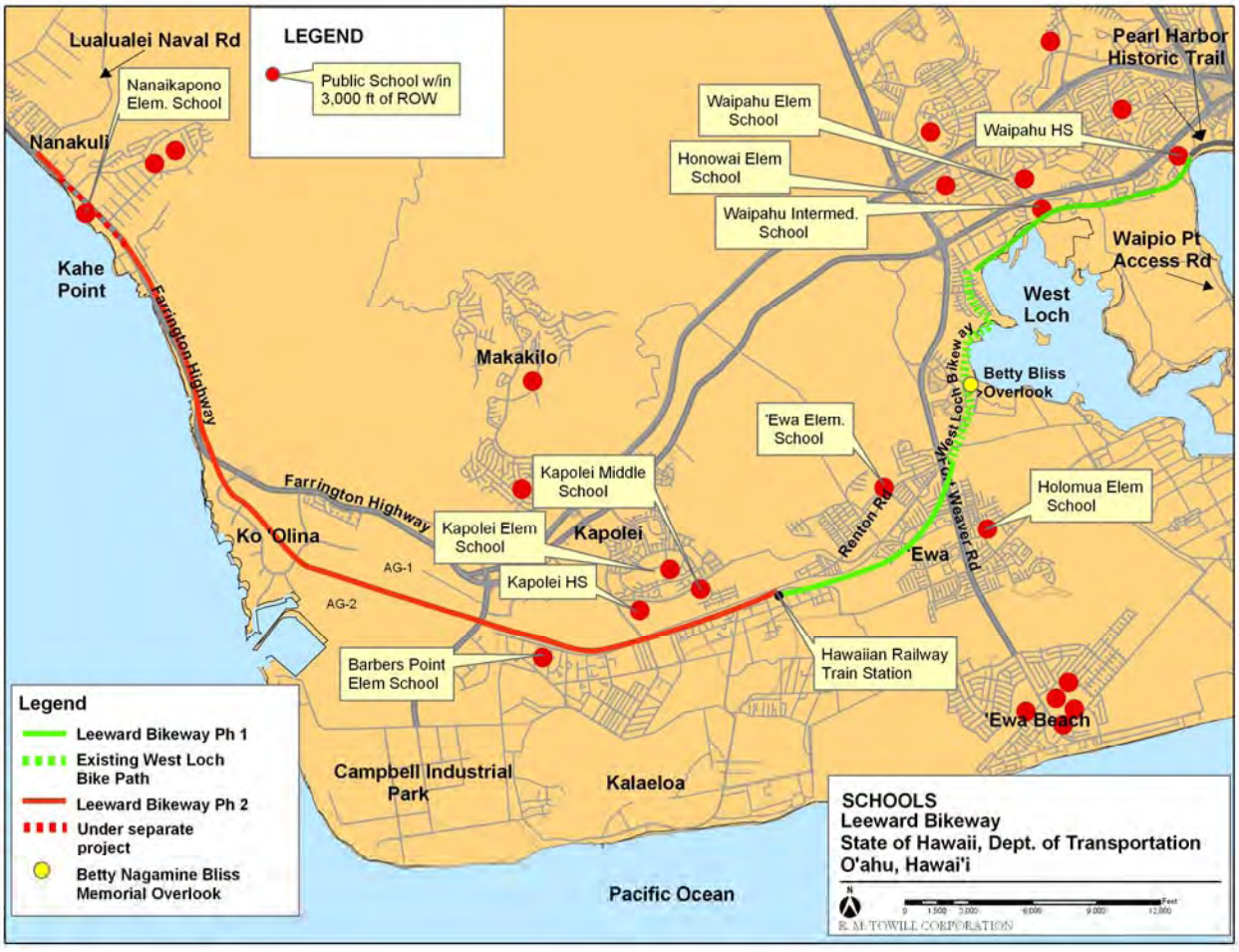

Figure 26. Schools

Potential Effects and Proposed Mitigation

The creation of the Bikeway will improve access to all of the schools listed above. The proposed Overlook will create new educational opportunities for nearby schools.

Potential Impacts of Alternatives

No adverse impacts are anticipated to result from the alternatives considered for this project.

3.4 Socio-Economic Environment

3.4.1 Population and Employment

The development of the Bikeway should not induce or decrease economic or population growth in the project vicinity or region. Construction activities and resultant employment will represent the most significant direct impact on the socio-economic environment of the project area. The socioeconomic characteristics of the proposed project area include demographics, employment, and commercial activities.

Most of the Bikeway straddles the ʻEwa Plain, which has changed drastically over the last two decades. During this period, residential developments replaced sugar cane plantations and substantial development occurred in ʻEwa and the City of Kapolei, Oʻahu's "second city," including construction of shopping centers, movie theaters, water parks and government offices. Increased development of Campbell Industrial Park has occurred while BPNAS was closed and a reuse program was undertaken by the State's Hawaiʻi Community Development Authority. Whereas the ʻEwa Development Plan area is specifically targeted for urbanization, the Central Oʻahu area is expected to maintain a slow growth rate and the Waiʻanae district is expected to retain its rural character and low population density.

The City and County of Honolulu, in updating its development plans for the project area, has summarized socio-economic projections to 2030 in three key ways: population, housing units and non-construction jobs.

Tables 10, 11 and **12** indicate the following regarding the forecast of socioeconomic trends:

All three demographic sectors are expected to rise dramatically in the ʻEwa region, where almost half of Oʻahu's population growth, a third of new housing units jobs, and 38% of the new jobs are expected.

Central Oʻahu is expected to have about one-fifth of the island's population growth and 18% of growth in both housing stock and employment.

The Waiʻanae district is expected to have a very low share of population and housing growth (3% of the island total) and virtually no change in jobs.

Table 10. Population

DP/SCP Area	Population 2000 (actual)	Population 2030 (projected)	Total Change 2000-2030	Share of Total O‘ahu Change from 2000-2030
Total O‘ahu	876,156	1,117,313	241,157	100%
Central O‘ahu	148,208	196,080	47,872	20%
‘Ewa	68,696	177,590	108,894	45%
Wai‘anae	42,259	50,943	8,684	4%

Table 11. Housing Units

DP/SCP Area	Housing Units 2000 (Actual)	Housing Units 2030 (Projected)	% of Total O‘ahu Change	Share of Total O‘ahu Change from 2000-2030
Total O‘ahu	315,988	428,415	112,427	100%
Central O‘ahu	45,878	65,855	19,977	18%
‘Ewa	20,797	57,938	37,141	33%
Wai‘anae	12,356	16,022	3,666	3%

Table 12. Non-Construction Jobs

DP/SCP Area	Non-Construction Jobs 2000 (Actual)	Non-Construction Jobs 2030 (Projected)	% of Total O‘ahu Change	Share of Total O‘ahu Change from 2000-2030
Total O‘ahu	476,228	605,313	129,085	100%
Central O‘ahu	44,356	66,924	22,568	18%
‘Ewa	14,689	63,076	48,387	38%
Wai‘anae	6,724	6,883	159	0.1%

For most of the 20th century, Central O‘ahu and ‘Ewa were dominated by plantation agriculture, mostly sugarcane. With the decline of sugar, a considerable amount of land was converted to housing. In 2000, Central O‘ahu had about 149,000 residents. In 2000, ‘Ewa had about 14,650 residents. Together, that makes up approximately 33% of the O‘ahu’s population. Due to the location of the Leeward Bikeway and the Hono‘uli‘uli Refuge, the communities in ‘Ewa will be the population that is most likely to utilize the Bikeway and Overlook.

Pearl Harbor is one of the nation’s most important naval military facilities and is a nationally recognized estuary and tourist attraction. Approximately 3,000 visitors per day and over 1,000,000 visitors per year come to Pearl Harbor, mostly to visit the World War II Valor in the Pacific National Monument which includes the USS Arizona and the USS Missouri. The proposed Bikeway will provide additional opportunities for the public to explore Pearl Harbor and learn about the natural, historical, and cultural resources. The public park called Shoreline Park at West Loch Estates hosts visitors on a regular basis that may walk along the bike path and the shoreline areas of Pearl Harbor.

According to the USFWS, an estimated 5,000 visitors a year would have the opportunity to view the Refuge and its resources from the proposed Overlook. The proposed Overlook will provide new opportunities for wildlife observation, photography, environmental education, and interpretation at Pearl Harbor. Access to this Refuge Unit and the Overlook is limited to foot and bicycle traffic along the Pearl Harbor Historic Trail/West Loch bike paths and the former OR&L right-of-way. In addition to the direct benefits that the Overlook will have for the public and community, the proposed project will include the removal of invasive mangroves which have encroached on available foraging habitat for Hawaiian stilts and migratory shore birds (USFWS, 2010).

Potential Effects and Proposed Mitigation

The proposed action will require the use of fossil fuels for the operation of construction equipment and machinery. While this use of fuel cannot be avoided, such use is not expected to be any greater than comparable development projects requiring this resource.

Potential Impacts of Alternatives

No adverse impacts are anticipated to result from the alternatives considered for this project.

3.4.2 Right-of-Way Acquisition Requirements

The proposed use of the former OR&L ROW for the Bikeway will not provide adequate area in a few isolated areas, mostly in Waipahu and Waipi‘o. Requirements for acquisition of isolated, narrow linear strips of land to ensure adequate shoulder areas are under review by project engineers and are estimated as shown in **Table 13** and **Table 14**. The total land taking required for this project, including all locations, will be approximately 0.54 acres.

The land to be used for the Overlook is owned in its entirety by the U. S. Navy and managed by the USFWS. Therefore, no land acquisition will be necessary to implement the Overlook portion of this project.

Table 13. Estimates of Additional ROW Required, Phase 1 of Leeward Bikeway

	TMK	Area of Land Take in Acres (AC)	Area of Land Take in Sq Ft (SF)	Width of Land Take (Ft)	Length of Land Take (Ft)	Owner
1	91069003	0.33 AC	14,394 SF	5.5	2,617	Ewa Industrial Park LLC
2	91069010	0.04 AC	1,600 SF	2.5	640	Coral Creek Golf Inc.
3	91061023	0.02 AC	654 SF	3.0	218	Hawaiian Electric Co. Inc.
4	91010120	0.07 AC	3,056 SF	3.0	10,198	Gentry Investment Properties
5	93001021	0.05 AC	2,260 SF	15	151	City and County of Honolulu
6	94011027	0.02 AC	764 SF	15	51	United States of America
7	93002029	0.02 AC	743 SF	15	50	City and County of Honolulu

Table 14. Land Use Designations for Land Takings, Phase 1 of Leeward Bikeway

	TMK	Owner	Current Land Use	Zoning	State Land Use District
1	91069003	Ewa Industrial Park LLC	Undeveloped	AG-1	Agricultural (Western Section); Urban (Eastern Section)
2	91069010	Coral Creek Golf Inc.	Golf Course (edge)	AG-1	Urban
3	91061023	Hawaiian Electric Co. Inc.	Undeveloped	A-1 Low Density Apt	Urban
4	91010120	Gentry Investment Properties	Undeveloped	P-1 Restricted Preserv.	Conservation
5	93001021	City and County of Honolulu	Golf Course	AG -2 (Golf Course)	N/A
6	94011027	U.S. A.	Undeveloped	R-5 (N) P-1 (S)	Urban (N taking) Conservation (S taking)
7	93002029	City and County of Honolulu	Undeveloped, Part of Ted Makalena Golf Course property	P-1 Restricted Preserv.	Conservation

Potential Effects and Proposed Mitigation

Land takings for provision of adequate shoulders for the Bikeway will result in the taking of seven (7) 2.5 to 15 foot wide linear strips of land in Phase 1, totaling 0.54 acres. Phase 2 requirements are not yet known because work is in the conceptual engineering stage. However, due to the mostly adequate size of the former OR&L ROW to accommodate the project, any required takings are expected to be of a similarly isolated and small-scale nature.

No displacement or relocation of land owners or lessees is expected to be required for construction of the Bikeway. No adverse effects with regard to relocation or displacement are anticipated.

3.4.3 Native and Migratory Bird Viewing in Urban O‘ahu

There are presently no easily accessible areas to watch native and migratory birds in the urban Honolulu corridor. Further, there is currently no public access for viewing at either Unit of the PHNWR other than through special use permits. Access is difficult and concerns over impacts to endangered waterbirds have limited the development of public use programs. The Hawai‘i Nature Center hosts its third grade wetland program at the Hono‘uli‘uli Unit during the non-nesting season of the Hawaiian stilts. Over 5,000 students visit Hono‘uli‘uli Refuge annually (USFWS, 2010).

The USFWS recognizes that Hawaii’s economy is highly dependent upon tourism and government spending. Direct visitor expenditures are about $1.0 billion annually, nearly one-third of Hawaii’s Gross State Product. Greater outdoor recreational opportunities can strengthen the visitor industry. Specifically, bird watching is a national pastime. The number of people who took trips from home specifically to watch birds has skyrocketed since 1980. Sixty-three million people in the United States watch and feed wild birds each year. That is one out of every three adults (USFWS, 2000). A 1990 survey by Fortune magazine showed that twice as many vacationers preferred to watch birds than play golf. Bird watching is most prevalent between the ages of 30 and 70 and is considered one of America’s favorite forms of outdoor recreation. Bird-related recreation contributes enormous sums of money to local and state economies (USFWS, 2010).

Nearly 18 million adults take trips annually for the express purpose of watching birds. On these trips, birdwatchers purchase gasoline, food, camera film, souvenirs and other supplies. They rent hotel rooms and cars. They eat at restaurants and buy airline tickets. All told, $29 billion is pumped into the economy each year by bird and other wildlife watchers. Birdwatchers spend an average of $100 million in each state, which, in turn, directly supports more than 200,000 jobs and generates more than $1 billion in state and Federal taxes (USFWS, 2010).

Potential Effects and Proposed Mitigation

The proposed Overlook would allow the public to view and learn about the resources found at the Refuge, add an attraction for visitors, and provide a viewing platform for bird watchers and photographers, whom have the potential to boost the local economy.

Opportunities for the public to see, enjoy, and learn about Hawaiian natural and cultural history of West Loch and the refuge would increase the public’s interest in, understanding of, and support for the Service’s conservation programs.

With the development of the Overlook, the public would gain greater understanding and awareness of recovery efforts for endangered waterbirds which would foster support. Removal of the invasive mangroves will allow additional views and increase foraging habitat for avifauna. The public will gain greater understanding and awareness of recovery efforts for endangered waterbirds which is expected to foster support for the Refuge's wildlife stewardship programs.

Potential Impacts of Alternatives

No adverse impacts are anticipated to result from the alternatives considered for this project.

3.4.4 Historic and Archaeological Resources

An archaeological resources background research was completed by International Archaeological Research Institute, Inc. (IARII) in January 2000, and was included the Final EA (2000)[3]. The project area or Area of Potential Effect (APE) defined for cultural resources is the former OR&L ROW. It should be noted that the entire project area has been previously disturbed from the original construction and maintenance of the railway in years past and is therefore considered still valid.

According to the archaeological survey and background research, construction of the proposed Bikeway will have "no effect" on the qualities that make the former OR&L ROW significant. Further, the project has the potential to make this significant historic site more accessible to a larger segment of the public. It is recommended that information about the history of the railroad be made available with signage along the bikeway or by other means.

Results from consultation with the island of O'ahu Historic Preservation Specialist (Collins, 2000) at DLNR, and results from an archaeological survey[4] performed by the International Archaeological Research Institute, Inc., indicate that three historic sites are known along the proposed bikeway route, including the former OR&L railroad, a former traditional Hawaiian burial site, and the former Pouhala fishpond. Locations of possibly sensitive cultural and historic sites include:

- Former gulches within the abandoned sugarcane fields across the 'Ewa Plain. Traditional Hawaiian historic sites may have existed across the 'Ewa Plain. However, steam plow work for sugar cane cultivation, which routinely reached depths of 3 ft. has probably destroyed any historic sites that were not deeply buried. There are no recorded surface sites along the proposed bikeway route from Kahe Point to the terminus east of Fort Weaver Road.
- The section from Kahe Point to the terminus at Lualualei Naval Road, where two retaining walls and three bridges are proposed, appear to be near areas of beaches and with a potential to contain unmarked human burials, similar to the burial discovered at SHPD Site 50-80-12-4061.

[3] Appendix A-Leeward Bikeway Record of Consultation, 2000. See letter dated July 7, 2000, from State Historic Preservation Division regarding HRS, Chapter 6E consultation for project.

[4] See Appendix A.

- The section connecting the existing West Loch and Pearl Harbor Bike Paths runs along the makai edge of urbanized Waipahu town, but crosses over the former fishponds Loko Pouhala and Loko Eo. Fishpond sediments associated with Loko Pouhala are likely to exist in the wetland in Waikele ahupua'a. It is unlikely that intact sediments associated with Loko Eo would be found because these were most probably disturbed or destroyed when the pond was filled more than a half century ago, thus the site is not eligible for listing on the State and National Registers of Historic Places.

Betty Nagamine Bliss Memorial Overlook

The Honoʻuliʻuli Unit of the PHNWR was previously used for sugar cane production before it became a refuge in 1976. Earlier use also included a car dump and salt evaporation ponds (Master Plan, 1983). The area was initially carved into four ponds and then reconfigured into two ponds. Pearl Harbor is ringed by numerous Hawaiian fishponds. Many of these have been obliterated by the construction of reservoirs, cane fields, mud ponds, roads, and raised ditches related to former sugar cane use. The former OR&L ROW contains portions of the railroad which are listed on the National Register of Historic Places.

Consultation under Section 106 of the National Historic Preservation Act will be coordinated between the Leeward Bikeway project and the Farrington Highway project cited above under the joint 2003 MOU to ensure consistent implementation of the project's elements including mitigation measures. For the portion of the project involving the Overlook, consultation under Section 106 will be performed by USFWS.

Prehistoric, Historic, and Traditional Resources

The APE is situated within the ahupuaʻa of Waikele, Ewa and Waiʻanae, in the ʻEwa and Waiʻanae Districts, in the south southwest coast of Oʻahu. These ahupua'a contained almost all the necessary constituent for a traditional Hawaiian life. In the Pearl Harbor area, agriculture and fishpond cultivation were the predominant economic activities. Prominent archaeological features present in the Pearl Harbor area include heiau, and fishponds (McAllister 1933). Many of these features have been disturbed by cattle ranching, development of rice patties, sugarcane plantations, and Pearl Harbor Naval Base as well as modem activities. On the Waipiʻo Peninsula, several fishponds were present in the vicinity of the APE. Loko Eo at the north end of the peninsula covered 137 acres and was surrounded on three sides by land with a wall approximately 2,040 feet long, extending to the fourth side (McAllister,1933). The wall was 6 feet wide and four feet high, composed of coral. It was significantly widened to accommodate a "plantation train" (McAllister 1933). Kaahukuu and Pouhala ponds were 41 and 23 acres, respectively, and were located on the northwestern side of Waipiʻo Peninsula, (McAllister, 1933). Results of the cultural resources survey (conducted in 2000 by IARII), indicate that it is unlikely to encounter fishpond sediments associated with Loko Eo or Ulumoku due to past agricultural practices and filling. However, fishpond sediments associated with the former Pouhala pond may exist within the vicinity of the APE. Hawaiians also apparently populated the broad open areas of the ʻEwa district in the many gulches that are present there. Hawaiians probably used holes and pits in the coral for shelter, and if soil was present, for cultivation. The most prominent archaeological features present across the ʻEwa Plain include heiau, enclosures and platforms, many of which have been disturbed by cattle ranching and modem activities (McAllister 1933). Results of the cultural resources survey indicate that due to agricultural activities, encountering cultural resources in this portion of the APE is unlikely. The portion of

the APE extending along the Waiʻanae Coast has expanses of beach sand present. Beach sand was used as burial sites for pre-contact Hawaiians. Results of the cultural resources survey indicate that a pre-contact burial site in the beach sand was found along the Waiʻanae Coast portion of the APE. The remains at this site (State Historic Preservation Division [SHPD] site 50-80-12-4061) were removed for reinterment at another location, and the site is no longer significant. However, the possibility exists that other burials may be present in the area. (IARII, 2000).

Historic Buildings and Structures

The single historic structure within the APE is the former railway and appurtenances of the OR&L. The construction of the railway from the Pearl Harbor to Waiʻanae (Nānākuli) area began in the late 1800s, and is linked to the development of Leeward Oʻahu. The railroad tracks along the Oʻahu shoreline were built on a bed composed of hard coral deposits (Bonnel, 1997). The track itself is narrow gauge, but should not be confused with the portable tracks used in sugar cane fields (Hawaiian Railway Society, 1994).

In 1975, with the aid of the Hawaiian Railway Society, the stretch of track from Lualualei Naval Road to approximately 300 feet east of Fort Weaver Road was placed on the National Register of Historic Places (NRHP) (Hawaiian Railway Society, 1994). A second section of ROW, approximately 1,000 feet long, along the West Loch Bike Path was deemed eligible for listing on the NRHP as well.

Potential Effects and Proposed Mitigation

Although there are no known or expected significant historical or archaeological resources within the railroad ROW, other than those discussed above, and at either of the Refuge Units, all precautions in accordance with the purpose and intent of HRS, Chapter 6E, will be taken to avoid impacting any resources that become known during construction. Currently, the HDOT has resumed consultation with the SHPD to review the project and complete the preparation of an archaeological monitoring plan by a qualified Hawaiʻi licensed archaeologist (SHPD, July 7, 2000). The monitoring plan will be subject to review and approval by the SHPD prior to the start of any earthmoving activities.

In the unlikely event of the discovery of any human skeletal remains (ʻiwi), the construction contractor will be instructed to cease all work within the area of the inadvertent find and the State Hawaii Preservation Division, DLNR, will be contacted at 692-8015, for further instructions regarding the find. The HDOT will be responsible for implementing early coordination and subsequent actions as may be directed by the SHPD for the preservation of the find. Resumption of work on the project may only be permitted at the direction of the SHPD.

Potential Impacts of Alternatives

The No Action alternative represents the continuation of the current status of archaeological and historic resource protection and management. Under the No Action alternative no new information will come to light associated with the Refuge Units.

3.4.5 Cultural Resources

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

A review of the proposed project site in accordance with the requirements of Session Laws of Hawai‘i (SLH), Act 50, was undertaken to identify the relationship of the project area to the requirements of Act 50. A cultural resources survey completed for this project indicates that the former OR&L railroad is the main historic feature along the proposed project area. Possible Hawaiian burials may exist in the sands along the Wai‘anae Coast portion of proposed project area, and fishpond sediments could occur in the vicinity of the former Pouhala fishpond near Waikele Stream.

The developed nature of the project site involving its longtime use as the former OR&L ROW is not expected to be conducive to the presence of wahi pana (a storied place) or the gathering of important native species that may include tī, flowering plants, or other species bearing fruit. However, while some sections of the existing ROW are in active use by the HRS for train operations, it is possible that other presently unused sections of the ROW may be associated with cultural uses that are not yet known. In order to address this possibility, the SHPD will be consulted and a list of names will be generated for further cultural consultation. The results of the consultation effort including coordination to address Section 106, NHPA, requirements, will be provided in the forthcoming Final EA document for this project.

Potential Effects and Proposed Mitigation

Past and future possible actions have been identified in the vicinity of the proposed project area and APE:

- In the Waipahu area, the Pouhala Marsh restoration project was undertaken by Ducks Unlimited, the State of Hawai‘i, USFWS and the City and County of Honolulu.
- Development makai of Farrington Highway is restricted in the Wai‘anae Coast portion of the project area. As a result, development of most of that portion of the project area is not anticipated. However, in the ROW, the HRS is planning on refurbishing track and four bridges from Ko 'Olina to Lualualei Naval Road, with some work in progress or completed (Howard, 2000). Since numerous construction activities have the potential to occur at the same time as the proposed project, coordination between HDOT and the various developers and agencies will occur in order to reduce and mitigate short-term primary impacts. Long-term cumulative impacts from the proposed project on cultural resources are not anticipated based on the longstanding designation and use of the former OR&L ROW by the HRS.

Due to the possibility of unknown burials occurring in the Kahe Point to Lualualei Naval Road section of the proposed project area, a qualified archaeologist will monitor construction activities for the retaining walls and bridges, as well as areas of cut slope requiring excavation along the previously described areas. In general, if cultural materials, particularly human remains are unexpectedly discovered during construction, ground-disturbing activities will cease in the immediate area and the SHPD will be

contacted. If the remains are less than 50 years in age, as determined by the SHPD and/or qualified archaeologist, the Honolulu Police Department will be contacted. If native Hawaiian remains are encountered, the O‘ahu Island Burial Council (OIBC) will be notified by the HDOT for further action and determination regarding the disposition and preservation of the remains.

Near Waikele Stream, the former Pouhala Fishpond, a new stream crossing is being proposed instead of renovating the existing, old debilitated railroad bridge. Intact fishpond sediments may be exposed and disturbed which would constitute an action representing an adverse effect on historic sites. In this case, a data recovery plan to collect samples for characterization of the ancient setting will be commissioned, if required, by the HDOT for preparation by a qualified archaeologist licensed in the State of Hawai‘i. The HDOT will be responsible for the implementation of the data recovery plan as approved by the SHPD.

In summary, the mitigation of potential adverse effects of construction that the proposed project may have on cultural or historic sites will involve the preparation of the following plans by a qualified licensed archaeologist for review and comment by SHPD and the OIBC prior to construction:

- An Archaeological Monitoring Plan to address the construction of retaining walls and bridges in the Kahe Point to Lualualei Naval Road section of the proposed project area;
- A Burial Treatment Plan to address the inadvertent discovery of human remains and their treatment; and,
- A Data Recovery Plan to collect former fish pond sediment samples for characterization of the ancient setting in the Pouhala Fishpond area.

As noted above, should any archaeologically significant artifacts, bones, or other indicators of previous onsite activity be uncovered during construction, work will be halted and their treatment will be in strict compliance with the requirements of SHPD, DLNR.

Section 4
Relationship to Governmental Land Use Plans, Policies, and Controls

4.1 Deed to Property for the Leeward Bikeway (Appendix A)

In 1980, the U. S. Department of Transportation transferred the title of the former OR&L railroad ROW to HDOT. A provision of the deed to the railroad ROW requires HDOT to use the transferred land for "highway purposes, i.e. bicycles lanes or paths and pedestrian walkways." The limits of this land transfer are from the Hono'uli'uli-Honea boundary to the Wai'anae Coast at Lualualei Naval Road in Nānākuli.

The deed stipulates that the use of the transferred land comply with provisions of Federal laws and regulations which protect archaeological, historic and cultural resources. Additionally, the deed supports, under 23 USC Section 217, the construction of "…separate or preferential bicycle lanes or paths and pedestrian walkways in conjunction with Federal-aid highways" (USA, 1980).

4.2 Agreement between USFWS and DOT – Requested by NPS/USFWS

In 2003, the USFWS and the FHWA (for U. S. DOT) entered in a cooperative agreement (Agreement) for the purposes of constructing an overlook at the Hono'uli'uli Unit of the PHNWR. The HDOT, as a cooperating agency, was also a party to the agreement. The Agreement outlined the basic responsibilities of the signatory agencies, namely to assign responsibility for the funding and construction of the improvements. The design of the Betty Bliss Memorial Overlook is the responsibility of the USFWS. Plans were to be integrated with the Bikeway plans being developed by the HDOT.

4.3 Pearl Harbor Historic Trail Master Plan

The Pearl Harbor Historic Trail Master Plan was prepared by the CCH in 2001 as part of the City's "Vision Team" initiative, where O'ahu residents proposed new regional projects to improve their neighborhoods, parks and roads. The Aiea-Pearl City Community Vision Team's project evolved into a long-range master plan for an 18.6 mile rail-and-trail system between 'Aiea and Nānākuli. The Pearl Harbor Historic Trail Master Plan was adopted by the City Council in 2003. The centerpiece of the Pearl Harbor Historic Trail is the former OR&L ROW extending between Aiea and Nānākuli.

A continuous path for bicyclists and pedestrians along the 18.6 mile route is envisioned alongside the historic railroad tracks. The plan calls for expansion of the Hawaiian Railway Society's operating train line, and implementation of the State's planned Leeward Bikeway, parallel to the train route. Governmental policy support for this project was demonstrated in several Hawai'i Senate Resolutions:

- SCR 103 (2004) – Senate Concurrent Resolution 103 supported the construction of the Leeward Bikeway and Pearl Harbor Historic Trail. The plan was to create a bike path and historic multi-use trail, and a outdoor recreation and transportation network. The facility was to utilize the former OR&L ROW lands to educate and preserve

history, to create opportunities for local businesses in the area, and to enhance environmental preservation and education.

- SB-1378 (2005) – Senate Concurrent Resolution 1378 recognized the Pearl Harbor Historic Trail.

The Leeward Bikeway project incorporates the planning conducted by the City's Visioning Team. Portions of the Bikeway that were previously developed by the City, e.g., the Pearl Harbor Bike Path (Waipi'o to McGrew Point, approximately 8.5 miles) and West Loch Shoreline Park (Hoaeae to Fort Weaver Road), were also part of the overall plan.

The proposed Betty Nagamine Bliss Memorial Overlook was included among the educational and interpretive projects in the Pearl Harbor Historic Trail Master Plan. The Plan was completed in May 2001. Some of the recommendations, such as mangrove removal and signage, have been completed since the completion of the Master Plan. However, much of the vision, goals and objectives, have not been implemented. The trail will link points of interest (historic, cultural and natural resources) and activities along the way. Educational and interpretive programs associated with local, state and Federal agencies may also be included.

4.4 City and County of Honolulu Land Use Plans and Regulations

4.4.1 General Plan for the City and County of Honolulu (2002)

The General Plan for the City and County of Honolulu (GP) is a comprehensive statement of objectives and policies which sets forth the long-range aspirations of O'ahu residents and the strategies of actions to achieve them. It is the focal point of a comprehensive planning process that addresses physical, social, economic and environmental concerns affecting the City and County of Honolulu. This planning process serves as the coordinative means by which the City and County government provides for the future growth of the metropolitan area of Honolulu (CCH, 2002a).

The following sections highlight excerpts of the GP that are particularly relevant to this project (emphasis added).

> *V. Transportation & Utilities*
>
> *Objective A. To create a transportation system which will enable people and goods to move safely, efficiently, and at a reasonable cost; serve all people, including the poor, the elderly, and the physically handicapped; and offer a variety of attractive and convenient modes of travel.*
>
> *Policy 1 – Develop and maintain an integrated ground-transportation system consisting of the following elements and their primary purposes:*
>
> *c. Bikeways-for recreational activities and trips to work, schools, shopping centers, and community facilities; and*
>
> *Policy 9 – Promote programs to reduce dependence on the use of automobiles.*
>
> *Policy 11 – Make public, and encourage private, improvements to major walkway systems.*

Discussion:

The GP supports development of bikeways as an important part of the transportation system for recreational use and for transportation to work, schools, shopping, and community facilities. This project encourages bicycle use and reduces dependence on automobiles. The GP also encourages "public improvements…to major walkway systems" such as those provided by this project. The proposed Overlook will be an extension of the bicycle amenities contemplated in the GP.

The Bikeway traverses three DP areas: Central O'ahu; 'Ewa; and Wai'anae. These are discussed in the following sections.

4.4.2 Central O'ahu Sustainable Communities Plan (COSCP)

Supporting the GP are the sustainable communities plans (SCPs) and development plans (DPs) for various regions of O'ahu. Each plan explains the role of the particular region in O'ahu's overall development pattern; the vision statement for the area; land use policies, principles and guidelines; public facilities and infrastructure policies and principles; implementation strategies; and maps of Open Space, Land Use and Public Utilities. The Central O'ahu Sustainable Communities Plan (COSCP) was adopted by the City Council in 2002 as Revised Ordinances of Honolulu (ROH) 02-62. It took effect on February 18, 2003. The COSCP is currently undergoing a five-year update that has not yet been officially adopted. Therefore, quotations contained herein refer to the adopted language of the Ordinance 02-62.

2. Vision for Central O'ahu's Future
2.1 Vision Statement
Creation of an Open Space Network. A Shoreline Park and Preservation Area developed along the entire shoreline in Pearl Harbor's West Loch and Middle Loch will restore the shoreline in Waipahu to public use, provide active and passive recreation facilities, and help create the Pearl Harbor Historic Trail, a pedestrian path, bikeway, and restored historic train system running from Rainbow Marina near Aloha Stadium to the Wai'anae Coast.

2.2.3 Open Space Network
Where possible, drainage, transportation, and utility corridors will be used to create a system of linear greenbelts or greenways characterized by landscaping and bikeways which will connect existing and planned communities.

The Waipahu Shoreline Park will restore public access to the Pearl Harbor West Loch and Middle Loch shoreline, provide passive and active recreational facilities, and help create the Pearl Harbor Historic Trail, a path shared by bikers and pedestrians running from the Rainbow Marina near Aloha Stadium to Nanakuli.

Discussion:

The articulated vision for the COSCP is for a planned open space network which specifically includes a bikeway extending from Aloha Stadium to the Wai'anae Coast, an intent that would be implemented in large part by the proposed Bikeway.

3.4.3.1 OR&L Historic Railway
As recommended in the Waipahu Town Plan (December 1995) and the Pearl Harbor Historic Trail Master Plan (May 2001), the long-term restoration of the OR&L railroad and development of the right-of-way as a world-class heritage and educational corridor would enhance neighboring communities and serve as a major visitor and cultural attraction.

Method of Preservation. The existing railway and associated structures should be repaired or reconstructed to the extent feasible, in order to permit its use for historic and educational rides. Preferably, the route would extend from Aiea to Nanakuli. Currently, the Hawaiian Railway Society operates a train between 'Ewa Villages and Kahe Park near Nanakuli.

Adaptive Reuse. Expansion and use of the railroad to promote the history and culture of the area should be encouraged. There should be a parallel paved shared-use path for bicycles and pedestrians along the length of the rail route, either within or adjacent to the right-of-way. The path should be provided even in those sections where the railroad itself is not operational.

Discussion:

The preservation of the OR&L railway as a public attraction and amenity is supported throughout the COSCP. The "adaptive reuse" of the former OR&L ROW is specifically envisioned to include a paved shared-use path for bicycles and pedestrians along the length of the rail ROW, including areas where the railroad is not operational.

4.1 Transportation Systems / 4.1.4 Bikeways

The proposed bikeway system for Central O'ahu generally incorporates…facilities recommended in Bike Plan Hawai'i (the State Bikeway Plan) and the Waipahu Town Plan. The Exhibit shows existing and planned routes for two types of bicycle facilities: bike paths which are separated from the roadway and bike lanes which are four- to six-foot lanes exclusively for bike use included in the roadway.

Bike Paths. As part of the Pearl Harbor Historic Trail, a major bike path should run east-west along the OR&L right-of-way (with branch routes to the Waipahu Cultural Garden and Leeward Community College). Use of the OR&L right-of-way is to be shared with restored historic train operations.

Discussion:

Figure 27, COSCP Open Space Map, and **Figure 28**, COSCP Public Facilities Map, each depict the Bikeway as integral to the plan. The COSCP encourages bike paths (equivalent of bikeways) which are separated from the roadway. The transportation discussion supports the "major bike path" running east-to-west along the former OR&L ROW. Consistent with the intent of this project, the ROW is to be shared with the Hawaiian Railway Society's train operations.

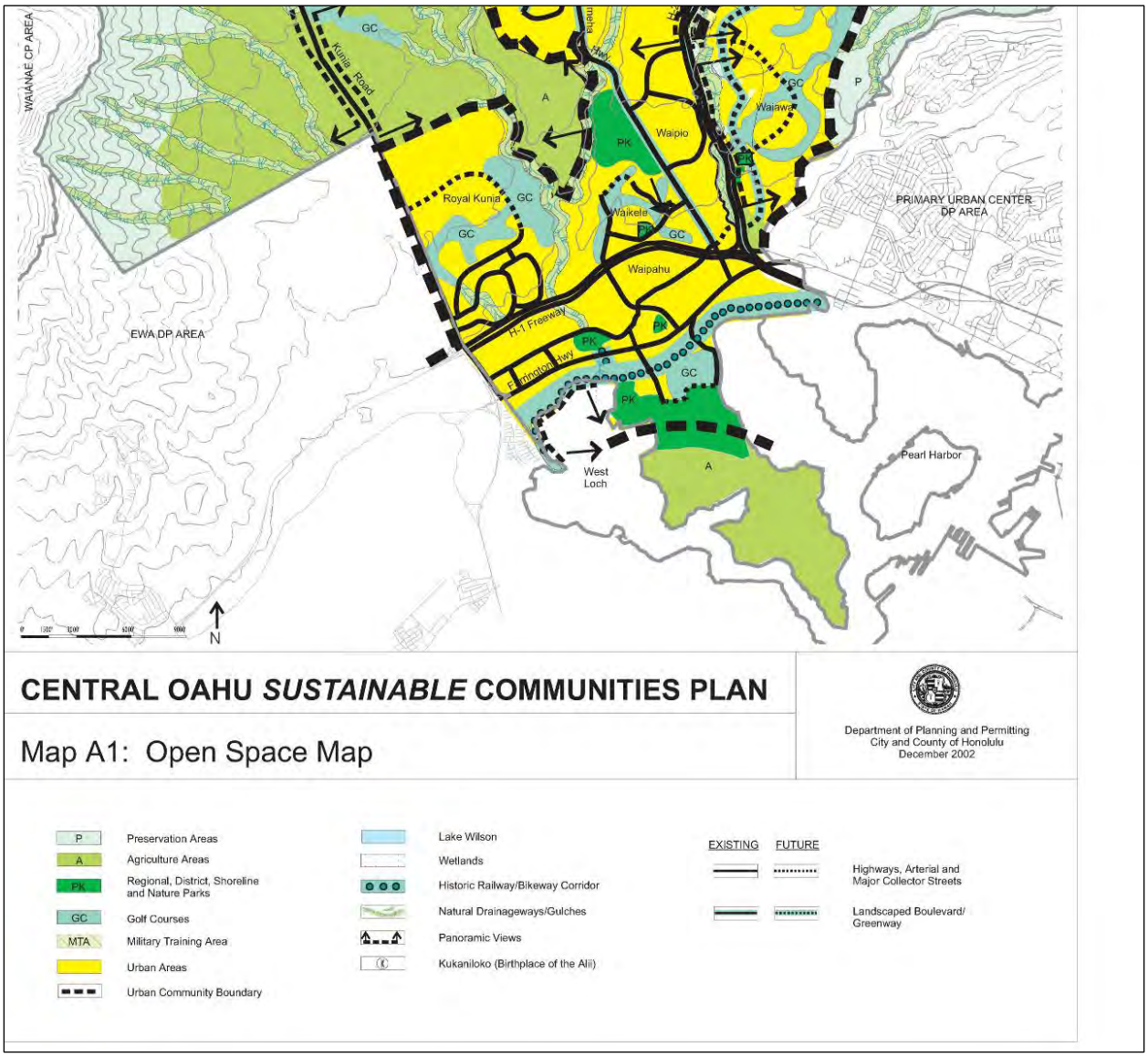

Figure 27. Central O‘ahu Sustainable Communities Plan, Open Space Map

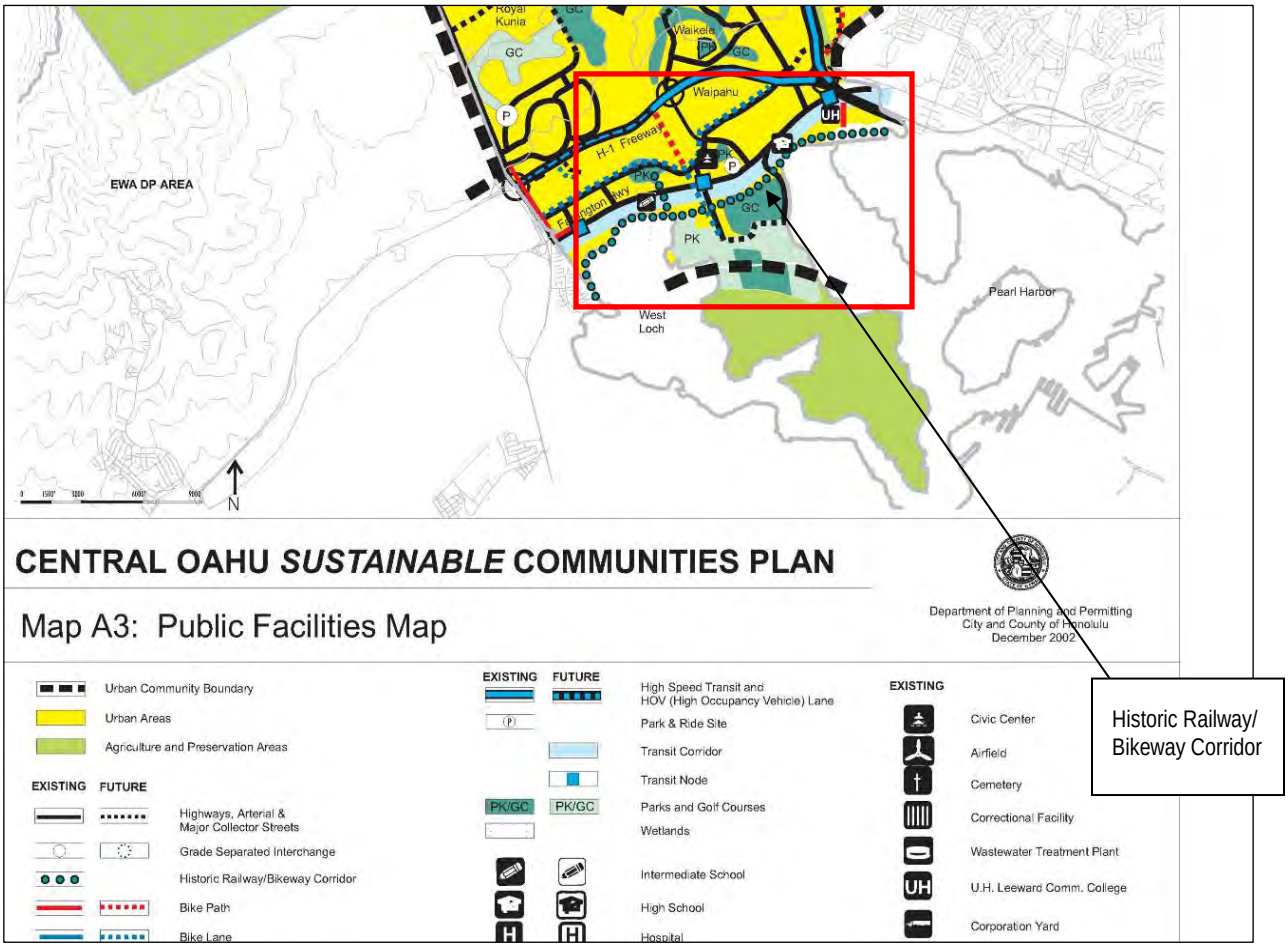

Figure 28. Central O‘ahu Sustainable Communities Plan, Public Facility Map

4.4.3 ‘Ewa Development Plan (EDP)

The current EDP was adopted in 1997 as Ordinance 97-29. The EDP is undergoing a revision process which began in 2003 that is nearing completion. The following provisions of the adopted ordinance are relevant to the proposed Bikeway:

> *3. Land Use Policies, Principles and Guidelines*
> *Dual Use of Drainageways and Utility Corridors.*
> *To create the regional open space network, drainageways and utility corridors should be viewed as opportunities to link major open spaces with pedestrian and bike paths along open corridors.*
>
> **Discussion:**
>
> This project supports the EDP’s expressed goal to use established open corridors, such as the former OR&L ROW (which also serves as a utility or “corridor”), as opportunities to link communities in the region with pedestrian and bike paths. The plan also supports the use of such corridors for more than one purpose, e.g., serving as both a bikeway and a railway track.

4. Public Facilities and Infrastructure
4.1 Transportation Systems
4.1.5 Bikeway System
The Kapolei Area Bikeway Plan, published by Campbell Estate in 1991, establishes a comprehensive bikeway network to serve the 'Ewa Plain. The network would include 56 miles of bikeway facilities, including bike paths (separated from the roadway), bike lanes (four- to six-foot lanes) and bike routes (shared curbside vehicle lane, with minimum 12-foot width).

The Kapolei Area Bikeway Plan (KABP) is part of the City of Kapolei Urban Design Plan… major bike paths should run along the OR&L right-of-way and Kapolei Parkway and along the North-South Road and Fort Weaver Road. Bikeways should be incorporated in other major roadways, and there should be an extensive network of bike lanes within the City of Kapolei and Kapolei Villages.

4.1.7 Planning Principles
Because of its generally even, gradually sloping terrain, 'Ewa offers decided advantages for transportation. Both the terrain and the sunny, low rainfall climate enhance bicycling as an alternative form of transportation as well as for recreation. An improved environment for bicycling and walking also improves the potential for high transit ridership.

Discussion:

The EDP, as well as the Kapolei Area Bike Plan, support use of the formal OR&L ROW as an important part of a network of bikeways throughout 'Ewa. The plan also acknowledges that the relatively flat terrain is favorable to bicycle travel and would encourage families to use the facility together because of the safety of a separate bikeway away from roadways and because of the reduced level of difficulty due to terrain. **Figure 29** shows the entire project route as part of the recommended transportation network.

4.4.4 Wai'anae Sustainable Communities Plan (WSCP)

The WSCP was adopted by Ordinance 00-14 in 2000 and the revision process for the plan has not yet been started. Relevant excerpts of the adopted plan include:

4. Public Facilities and Infrastructure Policies and Guidelines/4.1 Transportation Systems
4.1.1 Overview of Transportation Systems in the Wai'anae District. Traffic congestion could be alleviated through an enhanced public transportation system for the Wai'anae District, including: Development of a bikeway on the old railroad right-of-way.

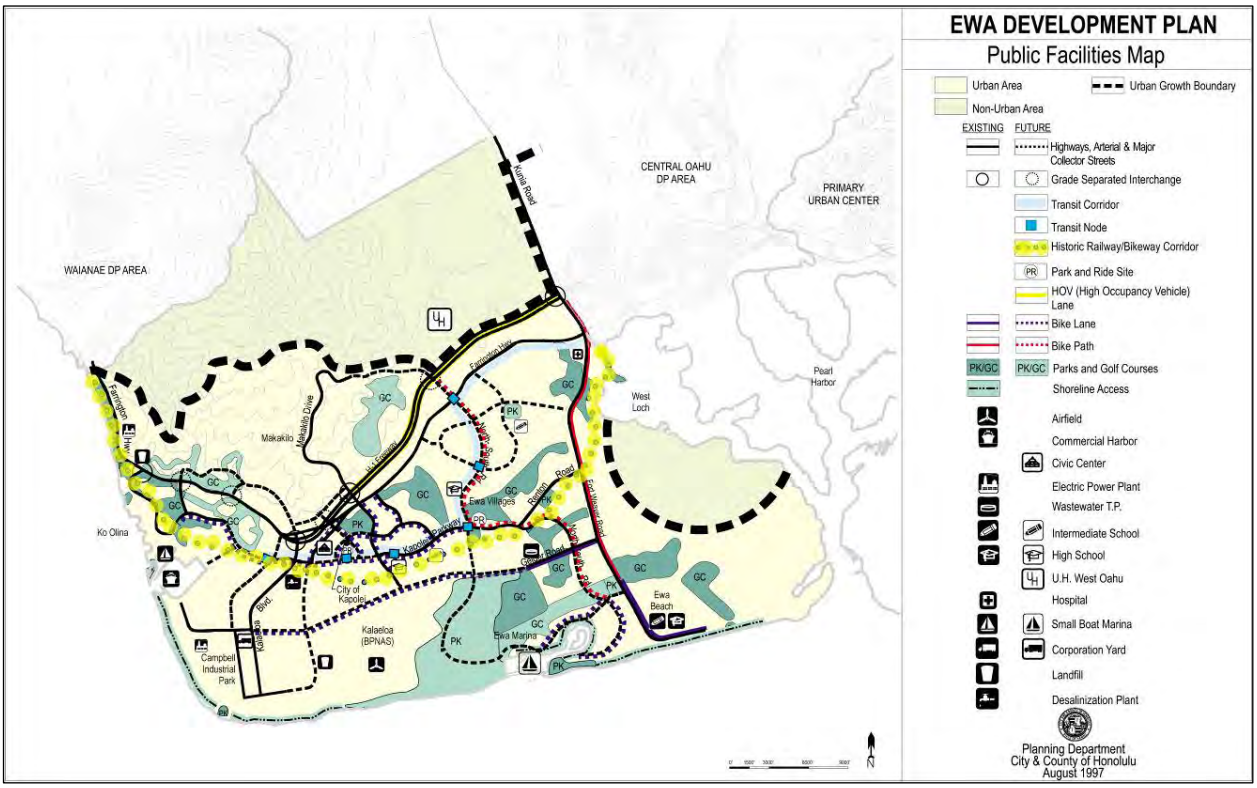

Figure 29. ‘Ewa Development Plan, Public Facilities Map

4. Public Facilities and Infrastructure Policies and Guidelines/4.1 Transportation Systems
4.1.1 Overview of Transportation Systems in the Wai‘anae District. Traffic congestion could be alleviated through an enhanced public transportation system for the Wai‘anae District, including: Development of a bikeway on the old railroad right-of-way.

4.1.2 General Policies Pertaining to Transportation Systems

4.1.2.6 Other Modes of Transportation. Encourage plans and programs for other modes of transportation, including bikeways, pedestrian walkways and paths, and creative use of existing unutilized transportation corridors such as the old OR&L railroad right-of-way. This ROW could be used for a multiuse path for bikers, roller bladers, skateboarders and pedestrians that would be safe from vehicular traffic.

Discussion:

The WSCP supports “…development of a bikeway on the old railroad ROW.” Further, it encourages “…creative use of existing underutilized transportation corridors such as the [former] OR&L ROW.” The plan specifically mentions enhanced user safety which comes from a pathway separated from vehicular traffic.

4.4.5 City and County of Honolulu Zoning

Due to its regional extent, the Bikeway traverses a wide variety of City and County of Honolulu zones. They are listed and portrayed geographically in **Figure 30**.

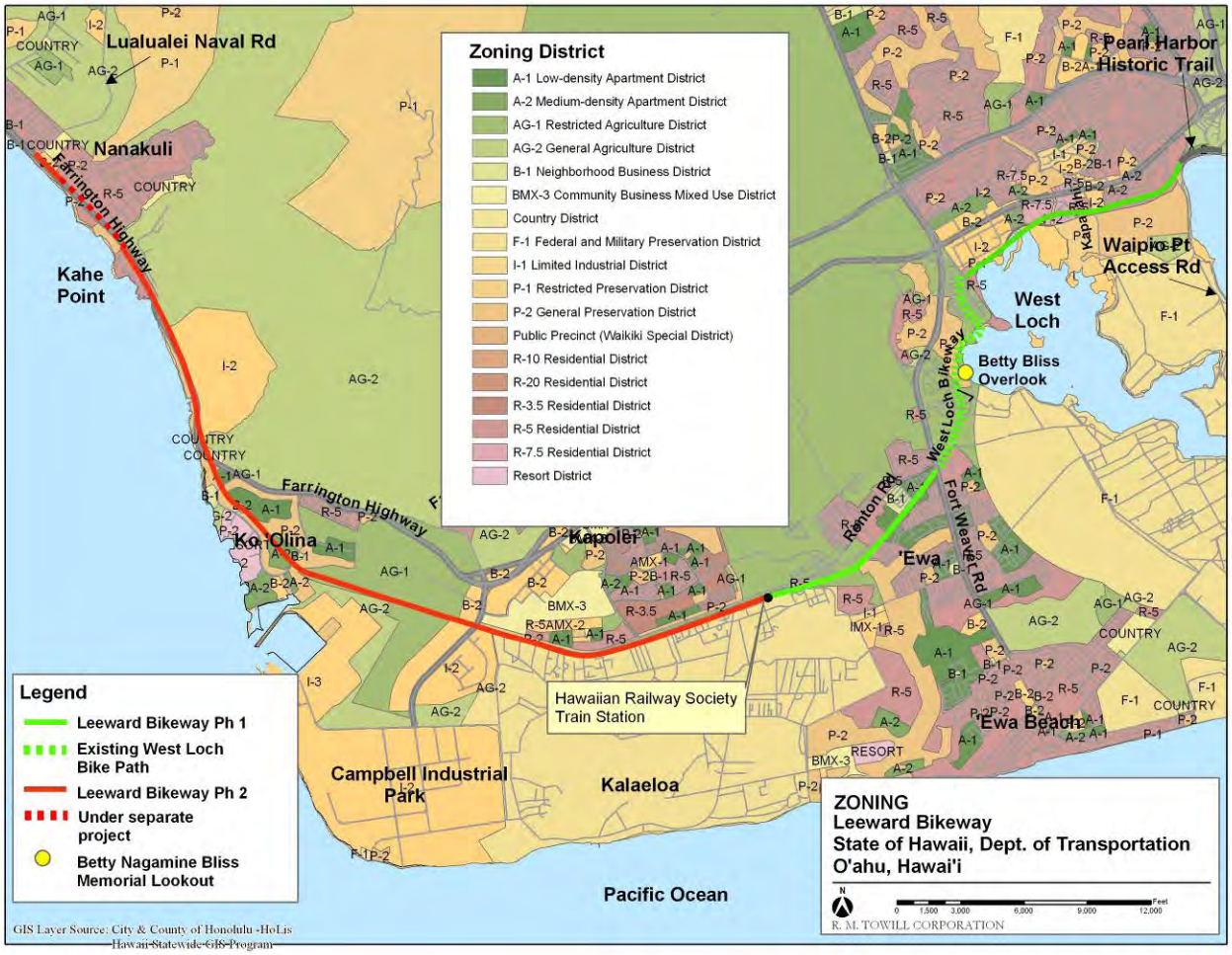

Figure 30. Zoning Map

Discussion:

The proposed Bikeway is a permitted use in all City and County of Honolulu land use zones. In addition, all zoning along the railroad ROW was established after the designation and set-aside of the ROW for railway purposes.

4.4.6 Special Management Area

Sections of the project are located within the Special Management Area (SMA) boundary established by Hawai‘i Revised Statutes (HRS), Chapter 205A, State of Hawai‘i, Coastal Zone Management Law. A Special Management Area Use Permit-Major will be required from the City and County of Honolulu, Department of Planning and Permitting, for coastal portions of the Bikeway alignment shown within the SMA in **Figure 31**.

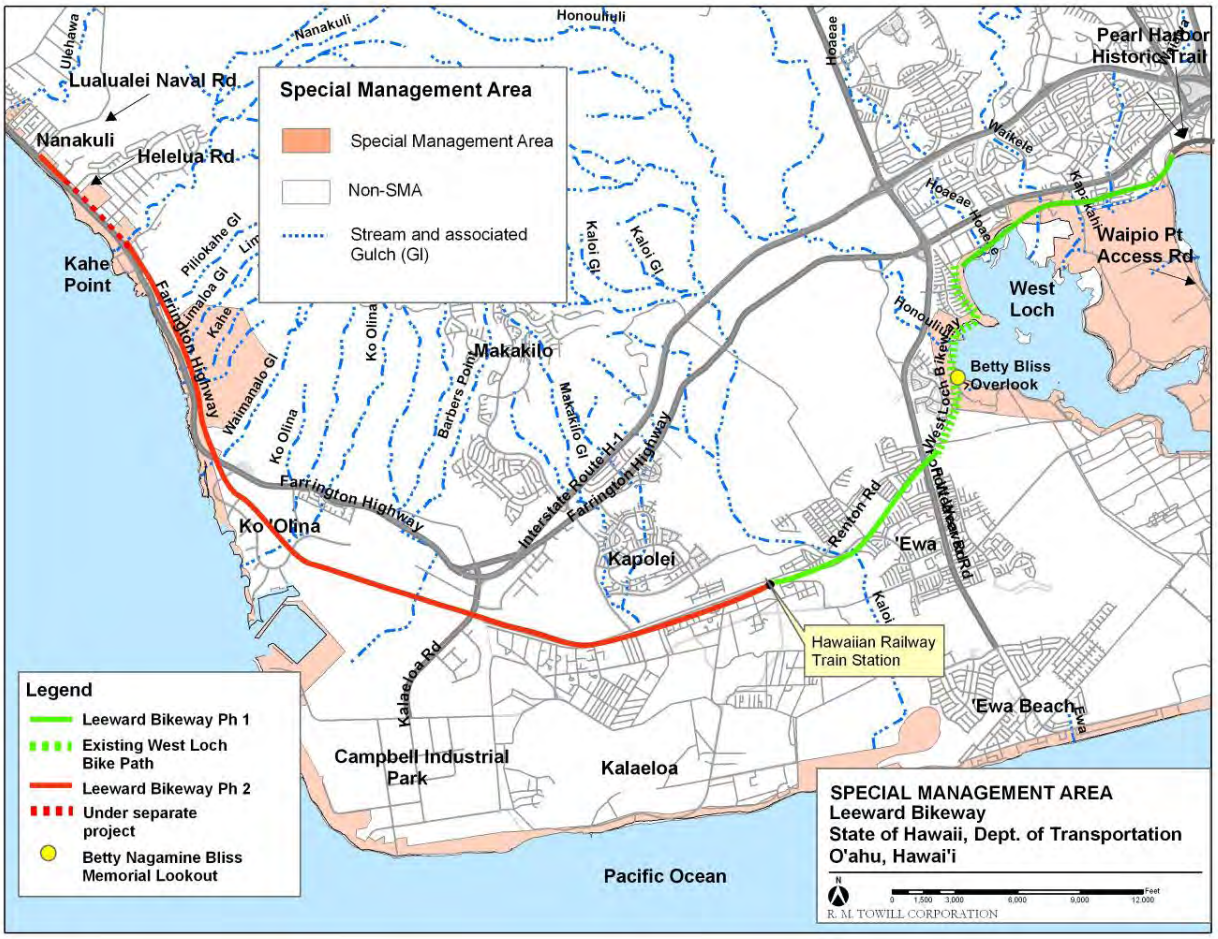

Figure 31. Special Management Area Boundary Map

The potential effects of the proposed project were evaluated based on the SMA guidelines established by the City and County of Honolulu. The following is a discussion of the applicability of the guidelines to the proposed Bikeway:

> *Sec. 25-3.2 Review guidelines*
> *(a) All development in the special management area shall be subject to reasonable terms and conditions set by the council to ensure that:*
> *(a)(1) Adequate access, by dedication or other means, to publicly owned or used beaches, recreation areas and natural reserves is provided to the extent consistent with sound conservation principles;*
>
> **Discussion:**
>
> The project will provide new pedestrian and bicycle access to the coastline around Pearl Harbor's West Loch and along the Wai'anae Coast from Kahe Point to Nānākuli. The improvements along this segment will include a nine- to ten-foot wide concrete bikeway with directional and interpretive signage. No vertical improvements (such as buildings) will be constructed along the Bikeway.

(a)(2) Adequate and properly located public recreation areas and wildlife preserves are reserved;

Discussion:

The project will provide enhanced access to public recreational areas (such as beaches on the Wai‘anae Coast) and wildlife preserves (such as the Pearl Harbor National Wildlife Refuge).

(a)(3) Provisions are made for solid and liquid waste treatment, disposition and management which will minimize adverse effects upon special management area resources; and

Discussion:

Solid waste generated during construction will be disposed of by the contractor at an approved landfill. The potential for the commingling of stormwater runoff with solid waste will be handled in accordance with Best Management Practices under an NPDES permit. No provisions for solid waste disposal are included in the design. SMA resources will not be adversely affected because no wastewater facilities will be provided under the proposed design. Portable toilet facilities will be provided during construction and removed when construction is completed.

(4) Alterations to existing land forms and vegetation; except crops, and construction of structures shall cause minimum adverse effect to water resources and scenic and recreational amenities and minimum danger of floods, landslides, erosion, siltation or failure in the event of earthquake.

Discussion:

The Bikeway will not alter land forms or vegetation. It will enhance rather than adversely affect recreational amenities. The potential for danger from natural hazards will not be increased by project construction.

(b) No development shall be approved unless the council has first found that:
(b)(1) The development will not have any substantial, adverse environmental or ecological effect except as such adverse effect is minimized to the extent practicable and clearly outweighed by public health and safety, or compelling public interest. Such adverse effect shall include, but not be limited to, the potential cumulative impact of individual developments, each one of which taken in itself might not have a substantial adverse effect and the elimination of planning options;

Discussion:

The proposed project is not anticipated to involve a substantial degradation of environmental quality. Planning and design for the project includes mitigation measures to prevent or minimize potential impacts. Potential environmental effects will be limited and should be considered in light of the project’s public benefit. The Leeward Bikeway will serve the public interest in the following ways:

- Promote alternative modes of transportation thereby reducing dependency on the use of automobiles.

- Promote improved cardiovascular health and weight loss by encouraging physical activity through walking and bicycle use.
- Create economic opportunities for businesses and services along the bikeway alignment.
- Preserve public shoreline access.

(b)(2) The development is consistent with the objectives and policies set forth in Section 25-3.1 and area guidelines contained in HRS Section 205A-26;

Discussion:

The Bikeway plan is in compliance with the objectives and policies set forth in HRS, Chapter 205A-2, and Special Management Area guidelines contained in HRS, Chapter 205A-26. See Section 4.4.5, Coastal Zone Management, HRS 205(A), for further discussion.

(b)(3) The development is consistent with the county general plan, development plans and zoning. Such a finding of consistency does not preclude concurrent processing where a development plan amendment or zone change may also be required.

Discussion:

The proposed project will be developed in conformance with the General Plan's policies and those of the Central O'ahu Sustainable Communities Plan, the 'Ewa Development Plan, and the Wai'anae Sustainable Communities Plan. Each of these plans supports dedicated pedestrian and bicycle facilities and specifically supports redevelopment of a portion of the former OR&L ROW for the Bikeway. The project will also be developed in conformance with the City and County of Honolulu Zoning Ordinances as described in Section 4.3.5, City and County of Honolulu Zoning. No development plan amendment or zoning changes will be required.

(c) The council shall seek to minimize, where reasonable:
(c)(1) Dredging, filling or otherwise altering any bay, estuary, salt marsh, river mouth, slough or lagoon;

Discussion:

The project will not involve dredging, filling or alteration of the shoreline configuration where salt marshes, sloughs, river mouths or lagoons are located.

(c)(2) Any development which would reduce the size of any beach or other area usable for public recreation;

Discussion:

No beaches along the coastal shoreline will be reduced in size.

(c)(3) Any development which would reduce or impose restrictions upon public access to tidal and submerged lands, beaches, portions of rivers and streams within the special management area and the mean high tide line where there is no beach;

Discussion:

The former OR&L ROW will be maintained to ensure continued access to the shoreline. Improvements will not eliminate any existing park amenities or reduce the size of any recreation area but will enhance public access to the shoreline and create a regional recreational amenity.

The project corridor will be designed to maintain visual quality and open space. The project path will be constructed at grade on a relatively flat plain that will not obstruct views to or from the coastline. No structures will be built along the coastline in order to maintain open space and the visual resources of the area.

(c)(4) Any development which would substantially interfere with or detract from the line of sight toward the sea from the state highway nearest the coast; and

Discussion:

The project will not alter, and will actually improve, the line of sight toward the ocean by paving and generally improving the appearance of the former OR&L ROW by improving weedy areas planned for improvement under the project.

(c)(5) Any development which would adversely affect water quality, existing areas of open water free of visible structures, existing and potential fisheries and fishing grounds, wildlife habitats, or potential or existing agricultural uses of land.

Discussion:

Project improvements will not encroach on any ocean areas. The former OR&L ROW does not pass through actively cultivated agricultural lands and the proposed project will not reduce the amount of land used for agricultural purposes.

Best Management Practices will be implemented during construction to prevent pollutants from mixing with storm water. The project will not affect existing or potential fisheries or fishing grounds. Water quality will not be adversely affected by the project.

4.4.7 The O‘ahu Bike Plan (July 2009, Draft)

In 1994, the City Council and Mayor adopted Ordinance 94-39 which directed that a bikeway system master plan for urban Honolulu be prepared and updated every five years. In 1999, The Bike Plan was broadened in scope to include the entire island. Recently, The O‘ahu Bike Plan was updated and a Draft O‘ahu Bike Plan dated July 2009 has been circulated for public comment. It is expected that the Final Plan will be completed shortly.

The goals of the 2009 Draft plan are:

1. *To increase the mode share of bicycle trips.*
2. *To enhance cooperation between roadway users.*
3. *To encourage and promote bicycling as a safe, convenient, and pleasurable means of travel.*
4. *To be recognized by the League of American Bicyclists as a Bicycle-Friendly Community.*

Discussion:

The proposed improvements identified in this plan are consistent with and have been recommended in the 2009 Draft O‘ahu Bike Plan.

4.5 State of Hawai‘i Land Use Plans and Regulations

4.5.1 Hawai‘i State Plan

The Hawai‘i State Plan, adopted in 1978 and revised in 1988, serves as a guide for the future long range development of the State by identifying goals, objectives, policies, and priorities. The Bikeway project is consistent with the Hawai‘i State Plan based on a review of the following goals and objectives:

Section 226-6 Objectives and policies for the economy in general.

(b)(2) Promote Hawai‘i as an attractive market for environmentally and socially sound investment activities that benefit Hawai‘i's people.

(b)(14) Promote and protect intangible resources in Hawai‘i, such as scenic beauty and the aloha spirit, which are vital to a healthy economy.

Section 226-11 Objectives and policies for the physical environment--land-based, shoreline, and marine resources.

(b)(3) Take into account the physical attributes of areas when planning and designing activities and facilities.

(b)(8) Pursue compatible relationships among activities, facilities, and natural resources.

(b)(9) Promote increased accessibility and prudent use of inland and shoreline areas for public recreational, educational, and scientific purposes.

Section 226-13 Objectives and policies for the physical environment--land, air, and water quality.

(b)(4) Encourage actions to maintain or improve aural and air quality levels to enhance the health and well-being of Hawai‘i's people.

Section 226-17 Objectives and policies for facility systems--transportation.

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

(b)(10) Encourage the design and development of transportation systems sensitive to the needs of affected communities and the quality of Hawai‘i’s natural environment.

(b)(11) Encourage safe and convenient use of low-cost, energy-efficient, non-polluting means of transportation.

(b)(13) Encourage diversification of transportation modes and infrastructure to promote alternate fuels and energy efficiency.

Section 226-23 Objective and policies for socio-cultural advancement--leisure.

(4) Promote the recreational and educational potential of natural resources having scenic, open space, cultural, historical, geological, or biological values while ensuring that their inherent values are preserved.

(10) Assure adequate access to significant natural and cultural resources in public ownership.

Discussion:

This project supports the above-stated objectives of the Hawai‘i State Plan by providing increased access to shoreline areas, encouraging the use of alternative transportation modes, and the creative reuse of existing facilities (the former OR&L ROW). The Bikeway will also increase the public’s access to resources in public ownership, such as shoreline areas, schools and parks, and the built environment, such as residential development along the ‘Ewa plain and Wai‘anae coast.

4.5.2 State Land Use District Classification

The State Land Use Law (HRS, Chapter 205), adopted in 1961, is intended to preserve and protect Hawai‘i lands, and encourage the uses to which the lands are best suited. All land in Hawai‘i is classified in one of four State Land Use Districts: Urban, Rural, Agricultural or Conservation. The project is primarily within with in the State Urban District with a few areas within the Agricultural District. There are no project areas in the State Conservation District. The project is consistent with allowed uses for the Urban and Agricultural Districts (**Figure 32**).

Discussion:

The former OR&L ROW has been in existence for about 100 years and was originally intended as a rail line for transporting sugarcane, goods, and passengers to various destinations along the Leeward Coast and to other railway lines linking with Honolulu. Agricultural and urban land developments are required to preserve the established ROW. The planned improvements within the ROW will be consistent with the continued preservation of the ROW for railway use. Inasmuch as the proposed project will be located within the ROW adjacent land uses will not be affected.

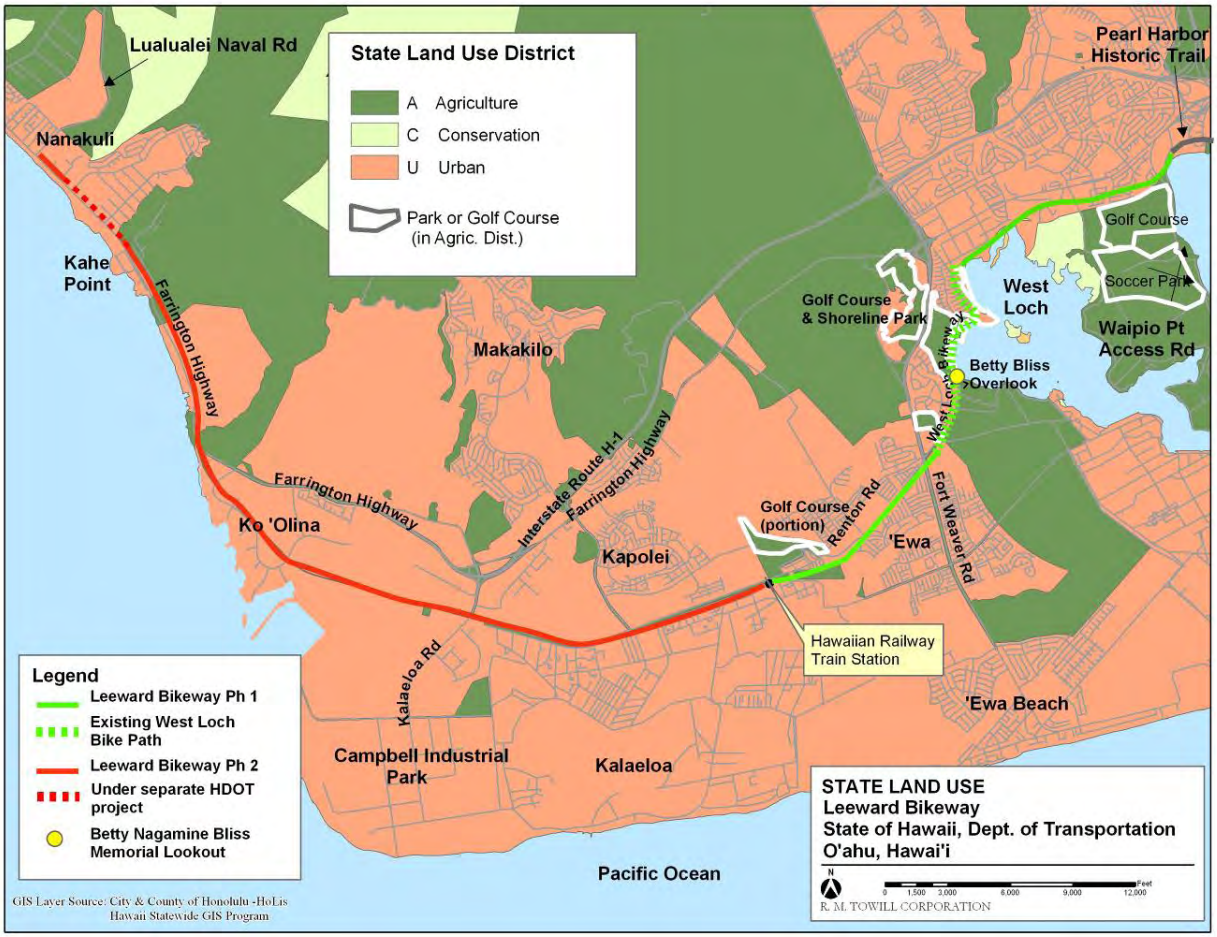

Figure 32. State Land Use Map

4.5.3 Hawai'i Statewide Transportation Plan (HSTP)

The HSTP is a policy document establishing the framework for planning Hawai'i's transportation system. The mission of the HSTP is to provide for the sensible, economic, efficient, and convenient movement of people and goods. The use of bicycling as a multi-modal form of transportation is integrated throughout the major policy elements of the plan. It is referenced most specifically in the goals and objectives of Mobility and Accessibility excerpted below.

> *Goal I: Achieve an integrated multi-modal transportation system that provides mobility and accessibility for people and goods.*
>
> *Objective 3: To promote alternative air, land, and water transportation mode choices.*
>
> *B. Provide safe and continuous routes*
>
> *C. Facilitate and provide walking and bicycling options that meet statewide and community needs. Examples: Provide safe and continuous routes.*

Discussion:

The proposed project advances progress toward the objective of a Hawai‘i multi-modal transportation system by promoting a bicycling option within Leeward O‘ahu. Because the Bikeway will be separated from motor vehicle traffic, the project offers a desired "safe and continuous route" for pedestrians and bicyclists.

4.5.4 Bike Plan Hawai'i 2003 (BPH)

Bike Plan Hawai‘i 2003 is a State Department of Transportation master plan serving as a guide for enhancing Hawai‘i's bicycling environment through a variety of channels including grassroots initiatives to government actions. The plan recognizes that bicycle facilities have become integral to our state and city transportation infrastructure (Bike Plan Hawai‘i 2003).

BPH is also intended to serve as a blueprint for future programs and facility improvements, such as the Leeward Bikeway.

Discussion:

The proposed project is consistent with the BPH which identifies the Leeward Bikeway as a project that is "underway" as a major element of O‘ahu's bikeway system.

4.5.5 Coastal Zone Management, HRS 205(A)

The State of Hawai‘i has designated the Coastal Zone Management Program (CZMP) to manage the intent, purpose and provisions of HRS, Chapter 250(A), as amended, for the areas from the shoreline to the seaward limit of the State's jurisdiction, and any other area which a lead agency (State Planning Office, Department of Business, Economic Development, & Tourism) may designate for the purpose of administering the CZMP. The Leeward Bikeway is being developed on public lands with Federal and state funds. The CZM Federal Consistency Determination requirement is triggered by the use of Federal funds.

The following is an assessment of the project with respect to the CZMP objectives and policies as set forth in HRS, Chapter 205(A)-2:

1. Recreational resources;

(A) Improve coordination and funding of coastal recreational planning and management; and

(B) Provide adequate, accessible, and diverse recreational opportunities in the coastal zone management area by:

- *(i) Protecting coastal resources uniquely suited for recreational activities that cannot be provided in other areas;*
- *(iii) Providing and managing adequate public access, consistent with conservation of natural resources, to and along shorelines with recreational value;*
- *(iv) Providing an adequate supply of shoreline parks and other recreational facilities suitable for public recreation;*
- *(v) Ensuring public recreational uses of county, state, and Federally owned or controlled shoreline lands and waters having recreational value consistent with public safety standards and conservation of natural resources;*

Discussion:

The Bikeway will provide new pedestrian and bicycle access to the coastal areas between Waipi‘o Point Access Road and Lualualei Naval Road. No vertical improvement (such as buildings) will be constructed along the bikeway. Water quality will be protected during construction through the application of Best Management Practices in accordance with National Pollutant Discharge Elimination System (NPDES) permit regulations.

2. Historic resources:

(A) Identify and analyze significant archaeological resources;

(B) Maximize information retention through preservation of remains and artifacts or salvage operations; and

(C) Support state goals for protection, restoration, interpretation, and display of historic resources.

Discussion:

The preferred Bikeway alignment (former OR&L ROW) has been designated as a historic resource. Portions of the Bikeway will parallel existing railroad tracks currently used by the Hawaiian Railway Society. Where existing railroad featured occur (tracks, signs, and other railroad appurtenances), these features will remain and will be improved, if required. If other historic resources are discovered during the construction process, the State Historic Preservation Division, DLNR, will be notified to ascertain its significance and to determine an appropriate course of action.

3. Scenic and open space resources:
(A) Identify valued scenic resources in the coastal zone management area;
(B) Ensure that new developments are compatible with their visual environment by designing and locating such developments to minimize the alteration of natural landforms and existing public views to and along the shoreline;
(C) Preserve, maintain, and, where desirable, improve and restore shoreline open space and scenic resources; and
(D) Encourage those developments that are not coastal dependent to locate in inland areas.

Discussion:

The project conforms to CZM Program Objective 3, Scenic and Open Space Resources, which encourages the protection, preservation and where desirable, restoration or improvement of the quality of coastal scenic and open space resources.

The project corridor will be designed to maintain visual quality and open space. The project path will be constructed at grade and will not obstruct the view of or from the coastline. No structures will be built in order to maintain open space and the visual resources of the area.

4. Coastal ecosystems;

(C) Preserve valuable coastal ecosystems, including reefs, of significant biological or economic importance;

(D) Minimize disruption or degradation of coastal water ecosystems by effective regulation of stream diversions, channelization, and similar land and water uses, recognizing competing water needs;

(E) Promote water quantity and quality planning and management practices that reflect the tolerance of fresh water and marine ecosystems and maintain and enhance water quality through the development and implementation of point and nonpoint source water pollution control measures.

Discussion:

Project activities will not involve major alterations to stream channels, or other water bodies or water sources. All required permits will be obtained to protect water quality and minimize impacts on streambeds. During construction, Best Management Practices (BMPs) will be employed in compliance with NPDES permitting requirements to prevent pollutant discharges in storm water runoff. Discharge pollution prevention measures will be installed for each project action as required by project activities. Measures to prevent sediment discharge in storm water runoff during construction will be in place and functional before project activities begin and will be maintained throughout the construction period. Runoff and discharge pollution prevention measures will be incorporated into a site-specific BMPs plan by the construction contractor.

5. Economic uses;
(A) Concentrate coastal dependent development in appropriate areas;
(B) Ensure that coastal dependent development such as harbors and ports, and coastal related development such as visitor industry facilities and energy generating facilities, are located, designed, and constructed to minimize adverse social, visual, and environmental impacts in the coastal zone management area; and
(C) Direct the location and expansion of coastal dependent developments to areas presently designated and used for such developments and permit reasonable long-term growth at such areas, and permit coastal dependent development outside of presently designated areas when:

(i) Use of presently designated locations is not feasible;
(ii) Adverse environmental effects are minimized; and
(iii) The development is important to the State's economy.

Discussion:

The proposed project will provide improved bicycling access by linking Central O‘ahu with the Wai‘anae Coast. The proposed Bikeway will also have the potential to attract a growing number of eco-tourists looking for more activity- and nature-oriented vacations. The project has been assessed for social, visual, and environmental impacts in accordance with HRS, Chapter 343. With the implementation of the mitigation measures outlined in this document no adverse impacts are expected to result.

6. Coastal hazards;
(A) Develop and communicate adequate information about storm wave, tsunami, flood, erosion, subsidence, and point and nonpoint source pollution hazards;
(B) Control development in areas subject to storm wave, tsunami, flood, erosion, hurricane, wind, subsidence, and point and nonpoint source pollution hazards;
(C) Ensure that developments comply with requirements of the Federal Flood Insurance Program; and
(D) Prevent coastal flooding from inland projects.

Discussion:

Erosion control measures will be employed during construction. Following project completion, permanent soil stabilization will be achieved through the use of grassing and ground cover vegetation. In addition, the bicycle travelway surface will be constructed of an all-weather surface to minimize the potential for erosion. The project is not expected to exacerbate flooding or affect flood zone areas, as identified by Federal Emergency Management Agency Flood Insurance Rate Maps.

7. Managing Development;
(A) Use, implement, and enforce existing law effectively to the maximum extent possible in managing present and future coastal zone development;
(B) Facilitate timely processing of applications for development permits and resolve overlapping or conflicting permit requirements; and
(C) Communicate the potential short and long-term impacts of proposed significant coastal developments early in their life cycle and in terms understandable to the public to facilitate public participation in the planning and review process.

Discussion:

The project corridor lies principally within the State Urban and Agricultural Land Use Districts. Land uses within the Urban and Agricultural Districts are subject to regulation by the City and County of Honolulu. A small portion of the project will require use within the State Conservation District.

All work activities will be conducted in compliance with Federal, State, and County rules and regulations. This Environmental Assessment document has been prepared to identify and where necessary, propose mitigation measures to address the potential for adverse impacts from construction and operation of the proposed project. This document will be published for public review and comment in compliance with procedures set forth in HRS, Chapter 343.

8. Public participation;
(A) Promote public involvement in coastal zone management processes;
(B) Disseminate information on coastal management issues by means of educational materials, published reports, staff contact, and public workshops for persons and organizations concerned with coastal issues, developments, and government activities; and
(C) Organize workshops, policy dialogues, and site-specific mediations to respond to coastal issues and conflicts.

Discussion:

This Supplemental DEA is an update of the EA published in 2000 by HDOT. Notice of the proposed action was initially provided through publication of the 2000 DEA and FEA, and current Supplemental EA documents. As part of the environmental review process, the public was provided with an opportunity to review and comment on the project during the 30-day public review period, and will have a second opportunity for comment through this Supplemental EA. Mitigation measures are recommended, where appropriate, to address the potential for impacts identified during the prior public review of the project.

9. Beach protection;
(A) Locate new structures inland from the shoreline setback to conserve open space, minimize interference with natural shoreline processes, and minimize loss of improvements due to erosion;
(B) Prohibit construction of private erosion-protection structures seaward of the shoreline, except when they result in improved aesthetic and engineering solutions to erosion at the sites and do not interfere with existing recreational and waterline activities; and
(C) Minimize the construction of public erosion-protection structures seaward of the shoreline.

Discussion:

No shoreline hardening is proposed and natural shoreline processes will not be affected. The proposed improvements will have a minimal impact on the environment.

10. Marine resources;
(A) Ensure that the use and development of marine and coastal resources are ecologically and environmentally sound and economically beneficial;
(B) Coordinate the management of marine and coastal resources and activities to improve effectiveness and efficiency;
(C) Assert and articulate the interests of the State as a partner with Federal agencies in the sound management of ocean resources within the United States exclusive economic zone;
(D) Promote research, study, and understanding of ocean processes, marine life, and other ocean resources in order to acquire and inventory information necessary to understand how ocean development activities relate to and impact upon ocean and coastal resources; and
(E) Encourage research and development of new, innovative technologies for exploring, using, or protecting marine and coastal resources

Discussion:

All work activities will be conducted in compliance with Federal, State, and County environmental rules and regulations. The project will not otherwise impact marine resources and does not involve research, or technological development related to the coastal and marine environments. Mitigation measures proposed for the protection of coastal fauna, particularly waterbirds, will be developed in consultation with the USFWS and DLNR.

4.6 Federal Regulations

4.6.1 ESQD Constraints

Most of the Waipi‘o Peninsula, including the majority of the Hono’uli’uli Unit of the PHNWR, is within the Explosive Safety Quantity Distance (ESQD) arcs which emanate from the ammunition handling wharves at the West Loch Annex, Joint Base Pearl Harbor-Hickam. The arc represents hazard zones that are established by the Department of Defense (DOD) for various quantities and types of explosive used by the military. Minimum distances are prescribed for separating explosives from inhabited structures (Inhabited Building Distance). The risks associated with the ESQD arc (commonly referred to as the “blast zone”) that encumber the Hono‘uli‘uli Refuge were determined by the DOD Explosive Safety Board with responsibility to establish safety standards. The board has determined that no structures may be built in the area that is encumbered by the ESQD arc.

4.6.2 Clean Water Act (CWA), Section (401) and (404)

Various activities required to construct the project will trigger permitting requirements under the Clean Water Act. These include work within stream beds and construction.

> *(401) States can use their water quality standards in Section 401 certifications to protect wetlands. Under Section 401, States can review and approve, condition, or deny all Federal permits or licenses that might result in a discharge to State waters, including wetlands. States and Tribes make their decisions to deny, certify, or condition permits or licenses primarily by ensuring the activity will comply with State water quality standards. In addition, States and Tribes look at whether the activity will violate effluent limitations, new source performance standards, toxic pollutants, and other water resource requirements of State/Tribal law or regulation.*
>
> *(404) Section 404 requires a permit before dredged or fill material may be discharged into waters of the United States including wetlands.*
>
> **Discussion:**
>
> The U. S. Army Corps of Engineers (USACE), Regulatory Branch, and the Department of Health (DOH), Clean Water Branch, were consulted for the 2000 FEA to identify permitting requirements pertinent to their respective areas of jurisdiction under to the Clean Water Act. An updated jurisdictional determination from the USACE will be sought. The determination will identify the requirements for a Section 404 Permit from the Department of the Army (DA); Section 401 Water Quality Certification from DOH that result in discharges to near shore waters; and Section 10 of the Rivers and Harbors Act of 1899. In addition, NPDES construction stormwater permits will be required from DOH for construction-related storm water runoff for the Bikeway (HDOT) and Overlook (USFWS) portions of Phase 1 and all of Phase 2.

4.6.3 Department of Transportation Act Section 4(f)

Section 4(f) of the Department of Transportation Act of 1966, codified in Federal law at 49 USC Section 303, declares that “…it is the policy of the United States Government that special effort should be made to preserve the natural beauty of the countryside and public part and recreation lands, wildlife and waterfowl refuges, and historic sites.” Section 4(f) specifies that “[t]he

Secretary [of Transportation] may approve a transportation program or project…requiring the use of publicly owned land of a public park, recreation area, or wildlife and waterfowl refuge of national, State, or local significance, or land of an historic site of national, State, or local significance (as determined by the Federal, State, or local officials having jurisdiction over the park, area, refuge, or site) only if:

> *(1) There is no prudent and feasible alternative to using that land; and*
> *(2) The program or project includes all possible planning to minimize harm to the park, recreation area, wildlife and waterfowl refuge, or historic site resulting from the use." Section 4(f) further requires consultation with the Department of the Interior and, as appropriate, the involved offices of the Departments of Agriculture and Housing and Urban Development in developing transportation projects and programs which use land protected by section 4(f).*
>
> *In general, a section 4(f) "use" occurs with a DOT-approved project or program when 1) section 4(f) land is permanently incorporated into a transportation facility; 2) when there is a temporary occupancy of section 4(f) land that is adverse in term of the section 4(f) preservationist purposes as determined by specified criteria (23 CFR §771.135[p][7]); and 3) when section 4(f) land is not incorporated into the transportation project, but the project's proximity impacts are so severe that the protected activities, features, or attributes that qualify a resource for protection under section 4(f) are substantially impaired (constructive use). 23 CFR § 771.135(p)(1) and (2).*
>
> **Discussion:**
>
> The Bikeway will require the use of Section 4(f) properties, in particular, the historic OR&L Railway ROW. Further, proposed improvements will impact a small portion of the 37-acre Honoʻuliʻuli Unit of the Pearl Harbor National Wildlife Refuge at West Loch. This wetland refuge is primarily devoted to the recovery of four of Hawaii's six endemic waterbirds (*Hawaiian stilt, Hawaiian moorhen, Hawaiian coot,* and Hawaiian duck). All four birds are listed as endangered species due to their precipitous decline in the 20th century. Honoʻuliʻuli, also a fresh water wetland, is extensively managed for a variety of waterbirds including Hawaii's endangered waterbirds and migrant waterfowl. It serves as the site of the Hawai'i Nature Center's Third Grade Wetlands Education Program. During the fall semester, thousands of students learn about the recovery of Hawai'i's waterbirds and the value of wetlands.
>
> The Bikeway will increase access to and views of Pearl Harbor's West Loch and the PHNWR.

4.6.4 Endangered Species Act of 1973 (ESA), as Amended

The purpose of the ESA is to protect and conserve ecosystems upon which endangered and threatened species are dependent, and to provide for the conservation of endangered and threatened species. The ESA is administered by the U. S. Department of the Interior through the U. S. Fish and Wildlife Service, and the U. S. Department of Commerce through the National Marine Fisheries Service, National Oceanic and Atmospheric Administration.

Discussion:

For the Bikeway, the HDOT will complete formal consultation with the USFWS in compliance with Section 7(a) (2) of the Endangered Species Act (ESA). Mitigation measures developed through the formal consultation process will be documented in the Final EA. No protected plant species are known from the project area.

The Betty Nagamine Bliss Memorial Overlook will be constructed in keeping with the USFWS regulations.

4.6.5 National Historic Preservation Act, Section 106 (NHPA)

The NHPA requires government agencies to evaluate the impact of government funded construction projects on historic resources through the process known as the Section 106 Review. The goal of the process is to identify historic properties potentially affected by the proposed project, assess the impacts, and seek ways to minimize or mitigate adverse effects. The NHPA is administered by the U. S. Department of Interior, National Park Service, and the Advisory Council on Historic Preservation (ACHP). At the State level, the NHPA is implemented by the State Historic Preservation Officer.

Discussion:

NHPA Section 106 consultation will be initiated with the State Historic Preservation Division (SHPD). Organizations and individuals that have an interest in the project area and particularly along the proposed bike path alignment will be contacted and asked to identify historic or cultural sites that may be impacted by the project. Further, these organizations and individuals will be asked if the proposed project would curtail traditional access or cultural practices. Responses were previously received from DLNR-SHPD, DLNR-DSP, Historic Hawaii Foundation, and the Office of Hawaiian Affairs (OHA), and are documented in the 2000 Final EA.

The Betty Nagamine Bliss Memorial Overlook at the PHNWR will be subject to provisions of the NHPA as it is located on Federal land (U. S. Navy) and is proposed by a Federal agency (USFWS).

4.6.6 Coastal Zone Management Act

The Federal Coastal Zone Management Act (CZMA), enacted in 1972, provides the states with financial incentives for the development and implementation of coastal zone management practices, and limited review power over Federal actions affecting the state's coastal zone. The CZMA requires that Federally assisted actions, including Federally-funded state and local government projects, be consistent with Hawai'i's CZM Program objectives and policies. The national CZM program is administered by the Office of Ocean and Coastal Resources Management (OCRM), an office within the National Oceanic and Atmospheric Administration, under the U. S. Department of Commerce.

Discussion:

The proposed Bikeway is located within the Coastal Zone as defined by the State. The proposed bike-pedestrian path is in conformance with the goals, policies, and objectives of the Hawai'i CZM Program (see Section 4.4.5, Coastal Zone Management, HRS 205(A)).

The Betty Nagamine Bliss Memorial Overlook at the PHNWR will be subject to provisions of the CZMA as it is located on Federal land (U. S. Navy) and is proposed by a Federal agency (USFWS).

4.6.7 Safe Drinking Water Act (SDWA) of 1974, as Amended, Section 1424(e)

The Safe Drinking Water Act (SDWA) mandates that the EPA establish regulations to protect human health from contaminants in drinking water. The law authorizes EPA to develop national drinking water standards and to create a joint Federal-state/tribal system to ensure compliance with these standards. The SDWA also directs EPA to protect underground sources of drinking water through the control of underground injection of liquid wastes (http://www.epa.gov/oecaagct/). Deep aquifers have a low vulnerability to contamination and are classified as irreplaceable, (Mink and Lau, 1990). The potable, artesian ground water resource, known as the Southern O'ahu Basal Aquifer (SOBA), lies in part beneath the 'Ewa region, and is designated as a sole source aquifer by the EPA.

The SDWA was originally passed in Congress in 1974 to protect public health by regulating the national's public water supply. The law requires actions to protect drinking water and its sources. The SDWA authorizes the U. S. EPA to set national health-based standards for drinking water to protect against both naturally-occurring and man-made contaminants that may be found in drinking water. The 1996 amendments to the SDWA greatly enhanced the existing law by recognizing source water protection. This approach ensures the quality of drinking water by protecting it from "source to tap." The SDWA also provides for a Federally implemented sole source aquifer program, which prohibits Federal funds from being expended on projects that may contaminate the sole or principal source of drinking water for a given area. A sole source aquifer is defined as supplying 50 percent or more of the drinking water for an area. Once an aquifer is given this designation, any project planned in areas above the aquifer receiving Federal funds must be coordinated with the Regional EPA Office, in accordance with Section 1424(e) of the Safe Drinking Water Act of 1974.

Discussion:

The proposed work on the Bikeway will be coordinated with the EPA in accordance with Section 1424(e). No adverse effects to the SOBA are anticipated or expected based on the limited scope and scale of the proposed project.

The Betty Nagamine Bliss Memorial Overlook at the PHNWR will be subject to provisions of the CZMA as it is located on Federal land (U. S. Navy) and is proposed by a Federal agency (USFWS).

Section 5
Permits and Approvals that May be Required

5.1 Federal Permits and Approvals

U. S. EPA Southern Oahu Basal Aquifer (SOBA) Sole Source Aquifer Determination

Department of the Navy (consultation as landowner of PHNWR via USFWS)

Section 106 (NHPA) Consultation

Department of the Army Permit (Section 404)

U. S. Coast Guard

Section 4(f), Department of Transportation Act

5.2 State of Hawai‘i Permits and Approvals

Coastal Zone Management Federal Consistency Determination (Office of Planning)

Community Noise Permit (Department of Health)

Stream Channel Alteration Permit (Department of Land and Natural Resources)

Section 401, Water Quality Certification (Department of Health)

National Pollutant Discharge Elimination System Permit (Department of Health)

Department of Land and Natural Resources, State Historic Preservation Division (Consultation)

5.3 City and County of Honolulu Permits and Approvals

Special Management Area Permit – Major (Department of Planning and Permitting) – Bikeway Only

Grading Permit (Department of Planning and Permitting) – Bikeway Only

5.4 Other Approvals

Consultation with the Hawaiian Railway Society regarding shared use of the ROW

Energy Corridor consultation

Utility organization consultation

Section 6
Agencies, Organizations and Individuals Consulted

The following agencies and organizations were either involved in pre-consultation, commented on the 2000 FEA, were requested to review and comment during the preparation of the Supplemental DEA, or have been provided a review copy of the Supplemental DEA.

6.1 Federal Government

Federal Highway Administration

U. S. Fish & Wildlife Service (National Wildlife Refuge Complex)
Pacific Islands Office, Honolulu, Hawai‘i

U. S. Park Service (Rivers, Trails, and Conservation Assistance Program Hawai‘i)

U. S. Army Corps of Engineers, Honolulu Engineer District

U. S. Environmental Protection Agency, Region IX

National Marine Fisheries Service

U. S. Coast Guard

U. S. Navy

6.2 State of Hawai‘i

Office of Environmental Quality Control

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

Department of Health
Environmental Management Division
Water Resources Division

Department of Land and Natural Resources
Land Division
Aquatic Resources Division
Commission on Water Resource Management
Office of Coastal and Conservation Lands
State Historic Preservation Division

Office of Hawaiian Affairs

O‘ahu Island Burial Council

6.3 Elected Officials

District 32 State Representative Lynn Finnegan

District 35 State Representative Henry Aquino

District 37 State Representative Ryan Yamane

District 40 State Representative Sharon Har

District 42 State Representative Rida Cabanilla

District 43 State Representative Kymberley Pine

District 44 State Representative Karen Awana

District 45 State Representative Maile Shimabukuro

District 15 State Senator Norman Sakamoto

District 17 State Senator Michelle Kidani

District 19 State Senator Mike Gabbard

District 20 State Senator Will Espero

District 21 State Senator Colleen Hanabusa

6.4 City and County of Honolulu

Department Planning and Permitting

Honolulu Fire Department

Honolulu Police Department

Honolulu Board of Water Supply

Department of Parks and Recreation

City Council Members
- District 1 Todd Apo
- District 8 Gary Okino
- District 9 Nestor Garcia

Neighborhood Boards
- No. 22 Waipahu
- No. 23 ‘‘Ewa
- No. 24 Wai‘anae Coast
- No. 34 Makakilo/Kapolei
- No. 36 Nānākuli-Mā‘ili

6.5 Private Organizations and Individuals

Hawaiian Railway Society

Ko ‘Olina Community Association

Ihilani Resort

Ducks Unlimited

Historic Hawaii Foundation

Hawaiian Telcom

Hawaiian Electric Company

Chevron, Inc.

Oceanic Time-Warner Cable

West Loch Fairways Association

West Loch Estates Association

Bishop Museum

Conservation Council of Hawai‘i

Earthjustice Legal Defense Fund

Hawaiian Trail and Mountain Club

Hawai‘i Audubon Society

Sierra Club, Hawai‘i Chapter

The Hawai‘i Nature Center

The Nature Conservancy of Hawai‘i

The Wildlife Society, Hawai‘i Chapter

Kamehameha Schools

Section 7
Significance Determination

7.1 Short-Term Impacts and Proposed Mitigation

Based on the above evaluation of the significance criteria and the discussion of impacts and mitigative measures contained in this document, it is anticipated that the proposed project will not have a significant negative effect on the environment. See Section 3, Environmental Setting, Potential Effects and Proposed Mitigation Measures.

7.2 Long-Term Impacts and Proposed Mitigation

Resources that are committed irreversibly or irretrievably are those that cannot be recovered if the project is implemented. The proposed project will involve two types of resources: (1) general industrial resources including capital, labor, fuels and construction equipment; and (2) project-specific resources such as natural resources and land at the affected site. General industrial resources will be spent during project construction and for long-term operation and maintenance of the roadways. Increased access to the railroad ROW will allow more people access to this resource. The Overlook will create new opportunities for viewing wildlife and result in removal of invasive plant species from the PHNWR habitat. The long-term benefits of the Bikeway and Overlook will outweigh the potential for adverse effects.

7.3 Significance Determination

According to HAR 11-200-12, DOH Rules, an applicant or agency must determine whether an action may have a significant impact on the environment. This includes all phases of the project, its expected consequences, both primary and secondary, its cumulative impact with other projects, and its short and long term effects. In making this determination, "Significance Criteria" are used as the basis for identifying whether significant environmental impacts will occur. According to HAR 11-200-12, an action shall be determined to have a significant impact on the environment if it meets one of the following criteria:

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

The proposed path system will result in the irretrievable use of the physical environment occupied by the improvements. However, the use of the Bikeway and Overlook will improve public access along the ‘Ewa Plain and Leeward Coast thereby enhancing the range of beneficial uses of the coastal environment. Benefits include the preservation of coastal access and open space in perpetuity, the preservation of access to fishing sites, provision of a new public resource for recreation, fitness, and social activities, and opportunities for public education through exposure to the natural, historic and scenic resources along the Leeward Bikeway and Betty Bliss Memorial Overlook and their interpretive and informational signage. The Bikeway and Overlook are designed to utilize only a small area of space within the larger landscape, leaving extensive areas of open coastal lands available and accessible for other public and private purposes.

Surveys conducted of the area of the Bikeway within the former OR&L ROW did not indentify any listed plant or animal species. USFWS has identified avifaunal resources at the PHNWR targeted for protection. Construction activities may disrupt activities of native birds at the Refuge. However, construction activities for the Overlook will avoid the breeding and nesting periods of the affected birds. Construction activities would also cease and/or be redirected to other project areas in the unlikely event that nesting birds are encountered.

An archaeological survey for the project determined that the former OR&L railroad is the main historic feature along the proposed project area and that the Bikeway will have no effect on the qualities that make it significant. Possible Hawaiian burials could exist in the sands along the Waiʻanae Coast portion of the proposed project area, and fishpond sediments could occur in the vicinity of the former Pouhala Fishpond near the Waikele Stream. Should any archaeologically significant artifacts, bones, or other indicators of previous historical activity be uncovered during construction, work will be halted and the treatment of any significant remains will be in strict compliance with the requirements of the SHPD. This includes the development of a burial treatment plan and/or sediment recovery plan, as required.

Environmental effects of the Bikeway related to water resources are anticipated to be primarily short-term and related to construction activities at stream crossings and several muliwai. Water resource surveys of the Bikeway APE indicated no anticipated long-term negative effects to surface or groundwater quality from the building of new bridge spans on either stream estuary or construction activities near wetland areas.

The Betty Nagamine Bliss Memorial Overlook project will result in improvement of avifaunal habitat and is expected to contribute to the recovery of four endangered species of waterbirds. The removal of mangrove and kiawe is expected to have a favorable effect on water quality within the PHNWR Hono'uli'uli Unit.

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

The development of the Leeward Bikeway in the former OR&L Railroad ROW will not decrease beneficial uses of the environment. The Bikeway will be constructed in the ROW of the former OR&L Railroad, which was built and operated from the late 1800s, and will enable greater public access to this historic resource. It will also be available as a route for alternative modes of transportation in the ʻEwa and Waiʻanae Districts.

The proposed Overlook project will have a beneficial effect on uses of the environment by opening up new viewplanes of Pearl Harbor and increasing public access to and information about the natural resources of the area.

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

The proposed bike-pedestrian path and Overlook are consistent with the Environmental Policies established in HRS, Chapter 344, and the National Environmental Policy Act (NEPA).

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

The proposed Bikeway, after completion, will have a positive impact on the social welfare of the ʻEwa and Waiʻanae Districts through increased access to a historic resource and a new, safe

thoroughfare for bicyclists and pedestrians. The existing social welfare of the area will not be adversely affected during temporary construction or long-term operation of the facility. All construction will take place during normal working hours on weekdays. There are no planned construction activities anticipated during weekends and holidays.

The proposed Bikeway improvements are consistent with the Central O‘ahu Sustainable Communities Plan, the ‘Ewa Development Plan, the Wai‘anae Sustainable Communities Plan, the State Bikeway Master Plan, and The O‘ahu Bike Plan. Surrounding land use patterns will not be altered, nor will unplanned or negative population growth or its distribution be stimulated. The proposed project will provide a significant and positive impact to the community in the short term with employment opportunities, and in the long term with enhanced and improved recreational opportunities, preservation of public coastal access, and shared-use path infrastructure to support alternatives to motor vehicle transportation.

The Overlook project is consistent with longstanding plans for the Pearl Harbor Historic Trail and provision of a public accessway for viewing the unique wildlife of Pearl Harbor and gaining public awareness and support of the mission of the Pearl Harbor National Wildlife Refuge.

5. *Substantially affects public health.*

The Bikeway project in particular will have a positive effect on public health by providing a regional facility where people can regularly exercise and enjoy outdoor activity. Although public health may be minimally affected by short-term construction-related impacts (i.e., air, noise, traffic, and water quality), the potential for such impacts will be reduced or minimized through the mitigative measures as represented in this Supplemental DEA. Construction carries the potential for temporary and minor impacts to air quality and noise levels. The project will comply with all appropriate Federal, State and City and County of Honolulu land use permits, construction BMPs, water quality monitoring plans, and pollution prevention plans, as required, to prevent, reduce or mitigate any possible adverse effects.

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

The development of the Bikeway and the Overlook is not expected to result in negative impacts associated with public growth or the need for public facilities. The project will benefit the public by providing access to a historic resource (former OR&L ROW) and a useable route for alternative modes of transportation. Development of the proposed Bikeway is expected to have a positive effect to the area population and community through the improvement of the former OR&L ROW by restricting unauthorized vehicular access, restricting the hours of access, requiring a Code of Conduct for users of the facility, and by providing regular maintenance and upkeep. In addition, a request for the regular patrol of the facility by the Police Department will be made to further promote public safety. The potential for adverse impacts based on the construction and operation of the Leeward Bikeway and the Overlook is not expected.

7. *Involves a substantial degradation of environmental quality.*

The proposed Bikeway will utilize an existing railroad ROW which was subjected to extensive ground disturbance when it was constructed in the late 1800s. This disturbance included excavation to place cushioning material (aggregate and/or crushed coral), and railroad-associated foundation supports, ties, tracks, and other features. Since this initial period of construction much

of the area of the ROW has returned to preconstruction conditions involving a relatively dry and arid climate.

The Hono‘uli‘uli Unit of the PHNWR, the site of the proposed Overlook, was previously used for sugar cane production before it became a refuge in 1976. Earlier use also included a car dump and salt evaporation ponds (Master Plan, 1983). The area was initially carved into four ponds and then reconfigured into two ponds. Pearl Harbor is ringed by numerous Hawaiian fishponds. Many of these have been obliterated by the construction of reservoirs, cane fields, mud ponds, roads, and raised ditches related to former sugar cane use. The former OR&L ROW contains portions of the railroad which are listed on the National Register of Historic Places.

The potential for short-term impacts to air, noise and water quality associated with the proposed project are expected to be limited occurring primarily during the construction period. The implementation of the mitigative controls as represented in this Supplemental DEA is expected to reduce and minimize the potential for short-term impacts.

There are no anticipated long-term impacts that would degrade environmental quality for the following reasons:

(1) The operation of the facility will not adversely affect the existing use of the rail line by the Hawaiian Railway Society. The operation of trains will continue.

(2) The project is limited in scope to the use of the former OR&L ROW. There are no plans to extend the proposed project beyond this limit as represented in this EA.

(3) The project is designed to serve as a “green” facility that does not itself promote the generation of greenhouse gasses normally associated with the use and operation of internal combustion powered vehicles. Users of the facility will be prohibited from operating internal combustion powered vehicles. Over the long term this is expected to have a positive impact in that with the greater use of the facility, there will be a corresponding reduction in the generation of greenhouse gasses associated with the use of internal combustion powered vehicles.

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

The proposed project is individually limited in terms of short- and long-term impacts relating to the development of the bike and pedestrian path. Long-term cumulative impacts from the proposed project on natural and cultural resources are not anticipated based on its limited scope that is not planned for expansion beyond the former OR&L ROW.

The project is consistent with the existing and planned Central Oahu's Sustainable Communities Plan, the ‘Ewa Development Plan and Wai‘anae Sustainable Communities Plan, and is not anticipated to have a cumulative adverse effect on the environment based on the review against past, present and reasonably foreseeable future actions in the area. The Bikeway project will not degrade the environment either by its construction or by its use.

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

The biological resources survey completed for this project indicates that sensitive plant and bird species are in the proposed project vicinity. Native plant species that are rare in lowland O‘ahu, the ‘Ilima and ma‘o, are present just outside the railway ROW in the ‘Ewa and Wai‘anae Coast

areas, respectively. Because of their rarity in lowland O‘ahu and close proximity to the railway ROW, they will be identified prior to the start of construction activities so that damage to them can be avoided.

Several waterbirds utilize the wetlands near the proposed project area, particularly adjacent to the PHNWR. The Hawaiian stilt and Hawaiian duck are endangered species that utilize loafing areas in wetlands near the proposed project area. Short term construction activities may disrupt loafing activities of native birds. Mitigation will include limiting construction activities to avoid the nesting season, and the cessation of construction activities and/or the redirection of work to other project areas in the unlikely event that nesting birds are encountered.

The completion of the Overlook portion of the project is anticipated to have long term benefits that include the preservation and ability of the public to enjoy the observation of rare and endangered avifauna in a natural wildlife setting.

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

All required Federal, State and City and County of Honolulu land use permits, construction BMPs, water quality monitoring plans, and pollution prevention plans, as required, to prevent, reduce or mitigate the potential for adverse effects to air, water quality, or ambient noise levels will be obtained.

There are no existing air quality or noise level issues surrounding the project site. Control of runoff will be addressed with appropriate BMPs to prevent it from entering the ocean or streams.

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

Flood hazards have been determined by FEMA on the updated FIRM in 1990. Portions of the proposed project area along the Wai‘anae Coast are susceptible to tsunami inundation and flooding. Sections of the proposed project site in the ‘Ewa Plain are not located in a tsunami evacuation zone and therefore not likely to flood. Areas along the West Loch of Pearl Harbor may have flooding associated with a tsunami. The Overlook’s raised walkways and platforms will be designed to withstand flood conditions and seismic occurrences.

Because the Bikeway and Overlook will be unstaffed facilities, they will be constructed to a reasonable design standard to withstand natural hazards in accordance with the requirements of the HDOT. Users of the facilities are expected to be provided with sufficient warning by the State and CCH Civil Defense agencies to evacuate the area in the event of potentially hazardous conditions such as a pending tsunami, earthquake or other event.

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

Disruption of the existing visual quality of the area will be short-term and minor principally resulting from construction activities. The Bikeway is not expected to alter scenic vistas or view planes as the alignment area will not change significantly. In some areas the view planes will be improved, such as through the clearing of vegetation to open up views of the PHNWR via the Betty Bliss Memorial Overlook.

13. Requires substantial energy consumption.

Construction of the proposed project will not require substantial energy consumption. Operation of the project facility following construction will require energy for lighting and irrigation. Cumulative energy requirements for the Bikeway and Overlook will be minimal and are expected to be offset by energy savings from use of the path for non-motorized vehicular commuting.

Section 8
Short Term Uses Versus Long Term Productivity

The Proposed Action would result in minimal to limited long-term land use changes along the former OR&L ROW, and represents the long-term loss of that particular open space. Construction of the project along the former OR&L ROW will also preclude the use of the site for other potential uses. However, the Proposed Action would result in long-term productivity and fulfill the purposes of the project as outlined in this document.

Section 9
Irreversible and Irretrievable Commitment of Resources

The use of raw materials for construction of the Leeward Bikeway and Betty Nagamine Bliss Memorial Overlook, as well as the use of fuel to power construction vehicles and equipment, represents the irreversible and irretrievable commitment of resources that would result from implementing the Proposed Action.

Section 10
Cumulative and Secondary Impacts

10.1 Introduction

The 1978 regulation of the Council on Environmental Quality (CEQ) requires agencies "to examine the indirect consequences of all proposed Federal activities and programs." These consequences may occur in areas beyond the immediate influence of a proposed action and at some time in the future. Guidelines defining cumulative and secondary impacts include:

> "Cumulative effects are impacts which result from the incremental consequences of action when added to other past and reasonably foreseeable future actions (40 CFR Part 1508.7). These impacts are less defined than secondary effects. Cumulative impacts can result from individual minor but collectively significant actions taking place over a period of time."

The proposed Bikeway will have a beneficial effect by supporting alternative, non-motorized modes of transportation to connect communities in the Waiʻanae Coast and ʻEwa Plain with the Primary Urban Center. The new Bikeway will link existing pathway segments to create a continuous, regional facility to connect residential communities with schools, parks, employment centers, and other points of interest between Honolulu and West Oahu. Additionally, the Bikeway will provide a safe recreational facility for leisure, social interaction, and fitness activities. The related Overlook at the PHNWR will also have beneficial cumulative effects. It will allow public outreach and education on the USFWS Refuges programs and the threatened and endangered species found within the Refuge.

> "Secondary effects are those that are caused by an action and are later in time or farther removed in distance but are still reasonably foreseeable" (40 CFR Part 1508.8).

The project area will experience a wide variety of secondary effects, such as changes in transportation conditions by attracting more people to consider bicycling as a viable mode of transportation, with a potential, corresponding reduction in motor vehicle congestion. Development of the Bikeway may stimulate commercial activity along the corridor, such as the establishment of food and drink stands and bicycle sales and repair shops to service Bikeway and Overlook users. Adverse secondary effects include potential water quality issues due to an increased level of impervious surfaces, and conflicts between Bikeway users. The effects and impacts of these changes will be governed by City and County of Honolulu regulations.

10.2 Region of Study

The area that was examined for this analysis is defined by the proposed Bikeway corridor which extends from Lualualei Naval Road in Nānākuli on the Waiʻanae Coast, through the ʻEwa plain, to Waipiʻo Point Access Road in Waipahu. This area is shown in **Figure 1**. The area for the Betty Nagamine Bliss Memorial Overlook is the West Loch of Pearl Harbor, within the Pearl Harbor National Wildlife Refuge as shown in **Figure 2**.

10.3 Cumulative Effects

10.3.1 Principal Land Use and Transportation System Effects

The development of the Leeward Bikeway will complete the area planning for a continuous Bikeway network that is envisioned in the 1991 Kapolei Area Bikeway Plan, the 1997 ‘Ewa Development Plan (DP), the 2000 Wai‘anae Sustainable Communities Development Plan (SCDP), the 2003 Bike Plan Hawai‘i, and the current Draft 2009 O‘ahu Bike Plan. As envisioned in these plans, the Bikeway is being developed to enhance connectivity between existing and planned land uses, but will not alter principal land uses within the project corridor. The project is anticipated to encourage bicycling and walking as viable alternatives to motor vehicle transportation. The potential cumulative effect is anticipated to involve: (1) the development of a new segment of the Leeward Bikeway beyond the area proposed in this project; (2) the development of another bikeway segment that would connect to the Leeward Bikeway from another mauka location; and/or (3) the effect of the subject project resulting in improved health and fitness gained from bicycling and walking, reduced dependence on petroleum, and reduced emissions from the use of internal combustion engines. None of these effects are expected to constitute an adverse effect.

10.3.2 Mutual and Interrelated Cumulative Effects of the Bikeway and the Betty Nagamine Bliss Memorial Overlook

Potential cumulative effects on the Bikeway could result if the USFWS decides in the future to develop public programs or facilities at the PHNWR in addition to the planned Betty Nagamine Bliss Memorial Overlook. If new PHNWR facilities rely on the Bikeway for access, it could require construction of new path connections and result in an increase in pedestrian and bicycle traffic on the pathway. The Bikeway is expected to have sufficient capacity to accommodate such potential increases in use. Temporary path congestion could occur at intersections with PHNWR access trails, but pathway traffic would disperse along the alignment based on each user’s varying rate of travel. Increased path use would also increase demands on path upkeep and maintenance.

Cumulative effects to the Betty Bliss Memorial Overlook could also occur if the State undertakes future projects to link the path system to other communities on O‘ahu. Extending path connectivity further up the Wai‘anae Coast or to Central O‘ahu would provide a wider population with the opportunity to access the PHNWR by foot or bicycle, with a corresponding increase in the number of visitors to the Overlook and a potential demand for additional infrastructure which would be addressed with the provision of additional toilet facilities and increased scheduling of waste collection and disposal services.

These mutual and interrelated cumulative effects would generally be seen as a positive outcome and the realization of the public purpose of these facilities; to increase the use of alternative modes of transportation on one hand, and greater exposure to wildlife education and environmental awareness provided by PHNWR programs on the other.

10.3.3 Summary of Cumulative Effects

Resources Affected	Summary of Cumulative Effects
Land Use Impacts	The potential for adverse cumulative impacts with regard to land use are not expected. However, it is possible that with the proposed project that the development of other bikeways in the region may be encouraged with the result that these projects may eventually be connected to the Leeward Bikeway. This is not anticipated to be an adverse effect: (1) any new projects would be required to undergo the same level of evaluation for consistency with the transportation system goals of the ʻEwa and Waiʻanae Development/Sustainable Communities Plans, and the related 2003 Bike Plan Hawaiʻi; (2) the review of any new bikeways development projects for consistency with such plans will be reviewed by the community and governmental agencies prior to future construction; and (3) the end result of any new bikeway developments that would seek to connect to the Leeward Bikeway will address the need for the development of alternative modes of transportation, improved health benefits associated with bicycling ridership, and a reduction in the use of motorized vehicles.
Farmland Impact/ Farmland Protection Policy Act [7 CFR Part 658]	The Bikeway alignment follows the former OR&L ROW, portions of which traverse through lands within the State Agricultural Land Use District. The planned improvements within the ROW will be consistent with the continued preservation of the ROW for railway use. Inasmuch as the proposed project will be located within the ROW, adjacent agricultural land uses will not be adversely affected. Use of the ROW is not expected to involve a commitment to future actions that would adversely affect agricultural lands. The State HDOT is conducting consultation with the Natural Resources Conservation Service to confirm that the proposed project will not result in the conversion of agricultural land to nonagricultural uses.
Topography Impact	Changes in the topography of the ʻEwa and Waiʻanae areas have been on-going for the past century based on agricultural and recent residential uses, particularly the development of the ʻEwa region as Oʻahu's secondary urban center. The project itself, however, is not anticipated to result in adverse cumulative impacts to topography. Grading and excavation required for construction of the Bikeway will generally follow the topography within the railroad ROW and will be designed to minimize cut and fill. The potential for cumulative impacts to topography will be addressed with appropriate construction and post-construction controls including the use of erosion and stormwater runoff controls in Federal, state, and City laws and regulations. The proposed Overlook will not affect topography because it will consist of a raised platform and boardwalk.
Water Resources and Hydrology Impact	Cumulative effects to water resources and hydrology are not expected to result from development or long-term use of the Bikeway or Overlook. Existing drainage patterns are preserved in the planned Bikeway design. Three perennial streams and ten gulches with intermittent streams are traversed by the Bikeway. Proposed bridge crossings will be designed and constructed to ensure that flows within these streams are unimpeded during normal flow and flood conditions. Wetlands within the project area will be protected by controlling access from the path to the proposed Betty Nagamine Bliss Memorial Overlook. In other locations, the distance between the path and wetland, and existing intervening vegetative buffers and fences, will serve to protect wetland resources from path use.

Wild and Scenic Rivers Act [Sections 7 (b), (c))	There are no wild and scenic rivers within the project limits. No cumulative impacts are anticipated.
Sole Source Aquifers [40 CFR Part 149]	Cumulative impacts are not anticipated as alteration to the ground will be limited to minor surface grading and stormwater generated from the project will be conveyed to a point outside the Southern O'ahu Basal Aquifer (SOBA) as prescribed by the regional drainage plan and the EPA. In compliance with Section 1424(e) of the Safe Drinking Water Act of 1974, consultation with the Regional EPA Region IX Office was initiated for the previous FEA and resulted in the finding by EPA in a letter dated June 30, 2000, that "Based on the information provided, it appears unlikely that the project will significantly impact the Sole Source Aquifer. Therefore, EPA approves of Federal financial assistance for this project under provisions of the Safe Drinking Water Act, Section 1424(e)" (Earth Tech, 2000). Although the Bikeway design is substantially the same as that presented to EPA in 2000, consultation with EPA has been initiated to ensure their concurrence with the current project.
Water Resources Regulatory Requirements (CWA)	Cumulative impacts related to water resource regulations are not anticipated to result from development and use of the project. Based on consultation with the U. S. Army Corps of Engineers, Regulatory Branch, and the State DOH, Clean Water Branch, a CWA Section 404 Permit from the Department of the Army (DA) and a CWA Section 401 Water Quality Certification, as required from the DOH will be obtained for bridge construction at the Kapakahi and Waikele Streams. A DA authorization will also be obtained pursuant to Section 10 of the Rivers and Harbors Act of 1899 and/or Section 404 of the CWA, for work in, over, or under the two streams, or work involving the construction of the Overlook. In addition, a NPDES permit will be obtained for construction-related storm water runoff. Following construction, Bikeway facilities will utilize existing drainage systems operated and maintained by the State HDOT and City and County of Honolulu in compliance with CWA provisions.
Natural Hazards Impact: Earthquakes	Cumulative impacts are not anticipated as the project will be constructed for a long-term design life in accordance with the 2003 International Building Code seismic design standards for O'ahu. Components of the bikeway most susceptible to potential earthquake damage, including the replacement of eight bridge crossings, will be subject to maintenance and upkeep as a part of the State's transportation infrastructure.
Flood Zones/ Floodplain Management [24 CFR Part 55, EO 11988]	Cumulative impacts are not anticipated. All proposed project improvements and any future improvements to transportation facilities located within the floodway will be subject to professional engineering studies to certify that the improvements will not impede the flow of floodwaters and will not otherwise exacerbate flood or storm wave conditions. As required, stormwater flows will be managed through the project's drainage control system as designed in accordance with applicable Federal, state, and city standards.
Hurricanes	Cumulative impacts are not anticipated as the Bikeway, Overlook, and related bridge structures will be designed to meet or exceed the minimum requirements of AASHTO and the Load Resistance Factor Design (LRFD) specifications. Cumulative impacts associated with the Overlook are also not anticipated as the structures will not be utilized for habitation purposes. In the event of a hurricane or other natural hazard the Bikeway and Overlook areas will be evacuated to maintain public health and safety.
Tsunamis	Cumulative impacts related to tsunamis are not anticipated. Coastal segments of the Bikeway and Overlook are located within the tsunami evacuation zone and will be more vulnerable to tsunami than inland areas of the 'Ewa Plain. The

	Bikeway will potentially attract more path users to coastal areas susceptible to tsunami inundation. The existing Civil Defense tsunami warning system of sirens and public announcements has been shown to provide reasonable amount of time for people to evacuate such areas. The Bikeway will facilitate evacuation by improving access for emergency personnel to enter vulnerable shoreline areas to conduct patrols and issue warnings, and by providing an alternative route for public evacuation away to safe areas.
Botanical Resources ESA Section 7	Development and long-term use of the Bikeway and Overlook is not expected to result in adverse cumulative effects to any protected plant species or habitat. Potential adverse cumulative effects to botanical resources could result from the bikeway functioning as a vector for the dispersal of invasive plant and animal species. Informational and educational signage on the path and at the Overlook will be used to raise public awareness and support for management actions related to these threats. In compliance with ESA Section 7, HDOT will consult with the USFWS during and following the project development period to support programs that raise public understanding of botanical resources and support efforts to eradicate threats to native ecosystems and threatened and endangered species.
Avifaunal and Terrestrial Fauna Resources ESA Section 7	The construction of the proposed Bikeway and Overlook is not anticipated to result in adverse cumulative effects to protected avifauna or terrestrial fauna species. There is no designated critical habitat in the project area. The portion of the ROW extending west from Waipi‘o Depot Road to approximately the western boundary of Waipahu Intermediate School passes close to the PHNWR and wetland areas used by at least two endangered endemic waterbirds for resting and foraging. These areas do not function as primary habitat for protected avifauna or terrestrial fauna and are not expected to be adversely affected by use of the Bikepath. As with botanical resources, potential adverse cumulative effects to avifauna and terrestrial fauna could result from the bikeway functioning as a vector for the dispersal of competing, invasive animal species. Unrestrained dogs on the path also pose a potential threat to wildlife in adjacent areas. Informational and educational signage on the path and at the Overlook will be used to raise public awareness and support for management actions related to these threats. In compliance with ESA Section 7, HDOT will consult with the USFWS throughout the project development period and afterwards through its partnership on the Overlook to support programs that raise public understanding and support for efforts to eradicate threats to protected avifauna and terrestrial fauna species.
Archaeological Impact	Cumulative impacts to archaeological and cultural resources are not anticipated. The Area of Potential Effect (APE) is defined as the former OR&L ROW. The only historic property within the APE is the former railway and appurtenances of the OR&L. Development of the Bikeway will have “no effect” on these historic properties, and has the potential benefit of increasing public awareness of the railroad’s history through interpretive signage. The alignment traverses sandy beach conditions that are often associated with the presence of pre-contact Hawaiian burials. Although there are no known or expected significant historical or archaeological resources within the railroad ROW, all precautions will be taken to avoid impacting any resources that become known during construction. Consultation with the State Historic Preservation Officer, interested public parties including Native Hawaiian Organizations, and the Federal Advisory Council on Historic Preservation will be undertaken pursuant to Section 106 of the National Historic Preservation Act to ensure the protection of historic properties throughout the project development period.

Noise Impact [24 CFR Part 51 B]	Adverse cumulative noise-related effects are not anticipated. Use of the Bikeway and Overlook by cyclists and pedestrians is not expected to be a significant source of ambient noise since its use will be non-motorized, and continuous and intermittent in nature. To reduce possible negative noise-effects, a Code of Conduct for users will be implemented including a requirement that movement be continuous and that motorized vehicles are prohibited. Increased use of the Bikeway over time could potentially result in a reduction in ambient noise levels by replacing noise-generating internal combustion vehicles within the region with bicycles and pedestrians.
Coastal Zone Management Act (CZMA)	The potential for cumulative impacts to the CZMA are not anticipated based on the following:
1. Recreational Resources	The Bikeway and Overlook project creates a recreational amenity and improves connectivity and access to shoreline recreational opportunities in Waiʻanae. Potential cumulative effects could result if the DOT extends the Bikeway system to connect other areas of Oʻahu in the future, thereby connecting the Waiʻanae beach park facilities at Kahe Point, Tracks, Nānākuli, and Ulehawa to a larger population of path users. The cumulative effect would be an expansion of recreational opportunities and increased use of existing recreation facilities. This effect would be considered beneficial as it would fulfill a primary objective of the project and the 2008 Statewide Comprehensive Outdoor Recreation Plan.
2. Historic Resources	Adverse cumulative effects to historic properties are not anticipated to result from development and long-term use of the Bikeway or Overlook. Potential cumulative effects are similar to secondary effects and include the potential for impacts associated with the development of additional or new bikeway segments. Development of a new segment of the project is not anticipated as it is already designed to provide an uninterrupted and continuous bikeway from ʻEwa toward Nānākuli, greater public awareness of the history of the OR&L railroad and other historic resources along the Bikeway, and a corresponding public desire for future development of bikeway/pedestrian use facilities. Consultation with the State Historic Preservation Officer, interested public parties including Native Hawaiian Organizations, and the Federal Advisory Council on Historic Preservation will be undertaken pursuant to Section 106 of the National Historic Preservation Act to ensure the protection of historic properties.
3. Scenic and Open Space	Adverse cumulative effects to scenic and open space resources are not anticipated. The Bikepath and Overlook will create new opportunities for people to enjoy scenic views and open space areas from West Loch to the Nānākuli Coast. The Bikeway infrastructure, including a concrete path constructed at-grade, and signage provided for information, education, and historical interpretation, will be noticeable, but will not degrade scenic resources.
4. Coastal Ecosystems	Potential cumulative effects to coastal ecosystems include increased runoff from impervious path surfaces and threats resulting from increased human activity. Stormwater discharges are not expected to generate significant concentrations of stormwater runoff that would adversely affect coastal ecosystems. Stormwater will sheet-flow off the linear path surface and percolate into adjacent groundcover areas or drain into the storm drain system. Coastal ecosystems can potentially be affected by the increased presence of people and pets on the path where it abuts the shoreline or wetland areas around West Loch. Off-leash dogs pose a threat to native birds and the path and Overlook area can potentially serve as a vector for dispersal of invasive plants (seeds on clothes and shoes), insects

	and animals. Information and educational material will be provided on path signage to educate the public about coastal ecosystems, habitat and seasonal behavior of native species, and to engage people to take measures to reduce threats from human activity (harassment, feeding, habitat destruction, refuse disposal), loose dogs and other feral animals.
5. Economic Uses	No adverse cumulative effects related to economic uses are expected to result from development and long-term use of the Bikeway and Overlook. The Bikeway and Overlook are expected to have a beneficial effect by enhancing connectivity and supporting alternative modes of transportation that link residential with employment and commercial centers. Development of the Bikeway may stimulate commercial activity through the establishment of businesses along the corridor, such as food and drink stands and bicycle sales and repair shops. These beneficial effects are not coastal dependent and are not expected to affect the location or expansion of coastal dependent developments.
6. Coastal Hazards	Potential cumulative effects from tsunami, hurricanes, flooding, and wave surge are not expected to result from development of the Bikeway. Impacts associated with coastal hazards will be addressed through adherence to the appropriate Federal, state, and City design standards for project improvements. The Bikeway and Overlook will potentially attract more users to coastal areas susceptible to tsunami inundation. The existing Civil Defense tsunami warning system of sirens and public announcements has been shown to provide reasonable time for people to evacuate potential inundation areas. The pathway will facilitate evacuation by improving access for emergency personnel to enter vulnerable shoreline areas to conduct patrols and issue warnings, and by providing an alternative route for public evacuation to safe areas.
7. Managing Development	Development of the Bikeway and Overlook will not result in adverse cumulative effects to the development review process, communication, and public participation in the management of coastal resources and hazards. Educational and interpretive signage along the Bikeway corridor and use of the Bikeway and Overlook over time will raise public awareness of coastal resources and create new opportunities for communicating with the public and inviting participation in issues affecting coastal areas.
8. Public Participation	Development of the Bikeway will have a beneficial cumulative effect on public awareness, education, and participation in the management of coastal resources. As noted above, informational, educational, and interpretive signage along the Bikeway, and its use over time are expected to raise public awareness of coastal resources and create new opportunities for engaging the public in issues affecting coastal areas.
9. Beach Protection	Adverse cumulative effects related to beach protection are not expected. Bikeway improvements follow the former OR&L ROW and utilize existing railroad infrastructure at coastal drainage crossings. Path improvements do not involve shoreline hardening. Shoreline processes will not be affected. Beneficial cumulative effects may result by improving non-motorized vehicle access to beach parks, thereby reducing demands for parking and other motor vehicle infrastructure at coastal recreation facilities.
10. Marine Resources	No adverse cumulative effects to marine resources are expected. The proposed project does not involve or utilize marine resources. However, as required by law all necessary regulatory approvals and environmental and building permits

	will be secured prior to the start of construction. Potential cumulative benefits include increased public awareness of marine resource issues and stewardship through the provision of informational and educational signage along the Bikeway. Clearing of invasive mangrove and kiawe vegetation for the Overlook is expected to improve water quality conditions for marine resources in the project vicinity. Inasmuch as the project supports alternative modes of transportation and reduces dependency on fossil fuels, it is compatible with an overall conservation ethic and practice.
Air Quality Impact	Adverse cumulative effects related to air quality are not expected. Potential cumulative effects to air quality include the beneficial effect of a reduction in emissions from internal combustion engines as a result of replacement of motor vehicles with non-motorized modes of transportation.
Visual Resources Impact	Adverse cumulative effects to visual resources are not anticipated. The path and Overlook will create new opportunities for people to enjoy scenic views from West Loch to the Waiʻanae Coast. The Bikeway and Overlook infrastructure, including a concrete path constructed at-grade, viewing platform, and limited signage provided for information, education, and historic and natural wildlife interpretation, will be noticeable, but will not degrade scenic views.
Socioeconomic Impact	Adverse cumulative effects to socio-economic conditions in the project area are not expected. While development will improve access and regional connectivity and provide an attractive community resource, it is not expected to provide a significant, direct impetus for long-term changes in population, demographics, or significant job growth. Development of the Bikeway may stimulate commercial activity through the establishment of businesses along the corridor, such as food and drink stands and bicycle sales and repair shops, to service Bikeway users. The Bikeway will increase opportunities for incorporating physical activity in daily routines with corresponding health benefits and the potential for reducing health care costs.
Public Facilities and Services Impacts **Fire, Police and Medical Services**	Development and long-term use of the Bikeway may have the potential cumulative effect of increasing calls for fire, police, and emergency services. It is reasonable, however, to expect the need and provision of such public services on a public facility. Moreover, public use of the Bikeway will offset public uses and potential calls for service elsewhere on the overall transportation system.
Potable Water	Cumulative effects to the potable water source and supply system are not anticipated. Use of water during construction for dust control will be temporary and will be terminated once work activities are completed. Long-term use of the Bikeway will not require a significant increase in potable water use, nor will Bikeway facilities impede future repairs or upgrades to water source and conveyance infrastructure.
Electricity, Cable and Telephone Utilities	Cumulative effects to utilities are not expected. The project requires relocation of electrical guy wires and overhead utilities in several locations. In addition, the State HDOT will consult with utility providers and petroleum companies throughout design and construction to ensure that the location of underground and overhead utilities is identified and that any required temporary or permanent utility relocation is conducted in a manner that eliminates or minimizes disruptions in service. Bikeway facilities will not obstruct future repairs or upgrades to utility infrastructure.

Considerations Relating to Pedestrians and Bicyclists	Cumulative effects relating to pedestrians and bicycles are expected to be beneficial. At present, there is only limited and segmented access for pedestrians and bicyclists through much of the area to be served by the Bikeway. In addition to providing a safe and convenient transportation facility for bicycle and pedestrian use, beneficial cumulative effects of the project include increased public awareness of bicycling and walking as viable modes of transportation, awareness of pathway connectivity to trip-generating destinations, and the possibility of extending path connectivity to other areas of the island in the future.
Energy	Adverse cumulative effects associated with energy are not expected. Potential beneficial cumulative effects may be realized by an increase in bicycle and pedestrian transportation with a corresponding reduction in motor vehicle congestion and reduced reliance on fossil fuels. Potential extension of the Bikeway system to connect with other areas of the island would expand these cumulative beneficial effects.
Hazardous Waste and Materials Impact	Cumulative impacts associated with hazardous waste and materials are not anticipated to result from development or use of the Bikeway and Overlook. Bikeway and Overlook components do not include hazardous materials that would create future waste disposal issues.
Park and Recreational Facilities Impact **LWCFA 6(f)** **DOTA 4(f)**	The project creates a recreational and natural resource amenity and improves access to parks and to the wildlife viewing facilities at the PHNWR. None of the parks located adjacent to the proposed project are designated for funding under the LWCF and therefore consultation under Section 6(f) of the LWCF Act is not required for this project. Consultation under Section 4(f) of the DOTA will be performed for this project.
Solid Waste Impact	Cumulative impacts are not anticipated. Trash generated by path users will be collected in trash receptacle provided as part of the path facilities. Trash pickup will be performed by HDOT maintenance crews. Trash will be disposed at the municipal landfill in accordance with City and County regulations. The relatively minor volume of trash that would be generated by path users is not expected to have a significant effect on solid waste handling or disposal.
Relocation-Displacement	No cumulative impacts related to relocation-displacement will result from the project. Project facilities will be located primarily within the former OR&L access ROW. Although there will be requirements for some acquisition of land, the areas required will be comprised of narrow linear strips of land to ensure adequate shoulder areas. The relocation or displacement of existing residences or other land uses are not anticipated. Long-term use of the project area is not expected to result in future expansion of the facilities into adjacent land uses.

10.4 Secondary Effects

10.4.1 Principal Land Use and Transportation System Effects

As noted above, land uses adjoining the Bikeway alignment have been established by local policy and will not be altered by development of the Bikeway project. The Bikeway alignment is located principally within the former OR&L ROW and is designed to incorporate established

street crossing infrastructure at existing roadway intersections, and thus will not alter or result in adverse secondary effects on the roadway system.

As noted in Section 10.3.1, Principal Land Use and Transportation System Effects, the related cumulative and secondary effect of constructing the subject project may involve: (1) the development of a new segment of the Leeward Bikeway; (2) the development of another bikeway segment connecting to the Leeward Bikeway from another mauka location; and/or (3) the effect of the subject project resulting in improved health and fitness.

The development of a new segment or another bikeway connecting to the Leeward Bikeway from a mauka location has the potential for effects to area land uses. However, as with the subject project, any new bikeway development project whether or not related to the Leeward Bikeway would still be required to be reviewed for land use consistency with existing land use policies, plans, and controls that include the ʻEwa and Nānākuli Development Plan/Sustainable Communities Plans, and Bike Plan Hawaiʻi. As required, mitigative measures would be developed and implemented to address the potential for impacts.

The overall effect of the project is expected to be beneficial to individual users and the overall transportation system by increasing access to communities along the Bikeway corridor. Individual users would benefit from improved health and fitness, and there would be a corresponding reduction in motor vehicle congestion on area roadways by encouraging increased use of bicycles and walking as viable modes of transportation.

10.4.2 Mutual and Interrelated Secondary Effects of the Bikeway and the Betty Nagamine Bliss Memorial Overlook

Development of the proposed path will enhance access to the Pearl Harbor National Wildlife Refuge (PHNWR) Honoʻuliʻuli Unit resulting in the secondary effect of increasing the number of visitors to the refuge and to the proposed Betty Nagamine Bliss Memorial Overlook. Similarly, development of the Overlook will create a new point of interest on the path with the secondary effect of attracting more users to the path. In each case, the secondary effect is compatible with the nature and purpose of the affected facility and would result in a public benefit.

The PHNWR is an urban refuge developed to provide public opportunities for wildlife observation, photography, and environmental education and interpretation. The Overlook will provide the public with viewing facilities to some of the best bird viewing environment in urban Honolulu. The proposed path connection supports the public education mission of the refuge by improving public access to the viewing facility. By creating a new attraction on the Bikeway, the Overlook draws attention to the improved access and connectivity offered by the path system and encourages greater pedestrian and bicycle use.

Development of the Bikeway project will result in an increased number of pedestrians and bicyclists travelling back and forth past the PHNWR. Potential effects on the Refuge will be mitigated by the location of path more than 100 feet away from the edge of the Refuge with the intervening former OR&L ROW, vegetated strip, and Refuge fence providing a protective buffer. The access trail connection between the Bikeway and the Memorial Overlook will likewise be designed with appropriate protective buffers, as determined by the USFWS, to ensure refuge resources are not adversely affected by path users.

10.4.3 Summary of Secondary Effects

Resources Affected	Summary of Secondary Effects
Land Use Impacts	Adverse secondary land use impacts associated with this project are not expected. The project represents a response to public policy providing for the development of bikeway infrastructure improvements to meet transportation system goals of 'Ewa DP and Wai'anae SCP. The Bikeway alignment follows an existing access ROW through land uses established by State and CCH law. Secondary changes to these land uses are not expected as a result of the project. Future bikeways projects will be subject to the same level of review with the requirement that any potential for impacts be adequately minimized and mitigated.
Farmland Impact/ Farmland Protection Policy Act [7 CFR Part 658]	As noted above, the Bikeway alignment follows the former OR&L railroad ROW, portions of which traverse through agricultural lands. The planned Bikeway improvements within the ROW will be consistent with the continued preservation of the ROW for railway use. Inasmuch as the proposed project will be located within the ROW, adjacent agricultural land uses will not be affected. Use of the ROW is not expected to result in secondary effects to agricultural lands. The State HDOT is conducting consultation with the Natural Resources Conservation Service to confirm that the proposed project will not result in the conversion of agricultural land to nonagricultural uses.
Topography Impact	Adverse secondary effects to topography are not expected to result from the project. Grading and excavation required for construction of the Bikeway will generally follow the topography within the railroad ROW and will be designed to minimize cut and fill. Potential secondary impacts from topographic changes include soil erosion and related impacts to downstream water quality from the discharge of sediment in stormwater runoff. Adherence to existing laws and regulations governing construction activities will ensure against soil erosion and the contamination of downstream waters from stormwater runoff. All graded areas will be stabilized with grass, groundcover plantings, or mulch to prevent the release of soils and sediment in runoff water. All project activities will comply with the City's grading ordinance and Federal Clean Water Act provisions. The proposed Overlook will not affect topography because it will consist of a raised platform and boardwalk.
Water Resources and Hydrology Impact	Adverse secondary effects to water resources and hydrology are not anticipated to result from the project. Existing drainage patterns are preserved in the planned Bikeway design. Three perennial streams and ten gulches with intermittent streams are traversed by the Bikeway. Proposed bridge crossings will be designed and constructed to ensure that flows within these streams are unimpeded during normal flow and flood conditions. Wetlands within the project area will be protected by controlling access from the path to the proposed Overlook. In other locations, the distance between the path and wetland, and existing intervening vegetative buffers and fences, will serve to protect wetland resources from path use.
Wild and Scenic Rivers Act (Sections 7 (b), (c))	There are no wild and scenic rivers within the project limits. No secondary impacts are anticipated.
Sole Source Aquifers [40 CFR Part 149]	Secondary impacts are not anticipated based on the conveyance of stormwater flows to a point outside the SOBA. Based on previous consultation with the EPA Region IX Office, it was determined that the project was unlikely to significantly impact the Sole Source Aquifer and that the project complied with provisions of the Safe Drinking Water Act. Although the Bikeway design is substantially the same as that presented to EPA in 2000, consultation with EPA has been initiated to ensure their concurrence with the project as now proposed.

Water Resources Regulatory Requirements CWA	Secondary impacts related to water resource regulations are not anticipated to result from development and use of the Bikeway. Based on consultation with the U. S. Army Corps of Engineers, Regulatory Branch, and the State DOH, Clean Water Branch, a CWA Section 404 Permit from the Department of the Army (DA) and a CWA Section 401 Water Quality Certification from DOH will be obtained for bridge construction at Kapakahi and Waikele Streams. A DA authorization will also be obtained pursuant to Section 10 of the Rivers and Harbors Act of 1899 and/or Section 404 of the CWA, for work in, over, or under the two streams. In addition, a NPDES permit will be obtained for construction-related storm water runoff. Following construction, Bikeway facilities will utilize existing drainage systems operated and maintained by the State HDOT and City and County of Honolulu in compliance with CWA provisions.
Natural Hazards Impact Earthquakes	Secondary impacts are not anticipated for the same reason that cumulative impacts are not expected. The project will be constructed for a long-term design life in accordance with the 2003 International Building Code seismic design standards for O‘ahu. Components of the bikeway most susceptible to potential earthquake damage, including the replacement of eight bridge crossings, will be subject to maintenance and upkeep as a part of the State’s transportation infrastructure.
Flood Zones/ Floodplain Mgmt [24 CFR Part 55, EO 11988]	Adverse secondary impacts related to flood zones and floodplain management are not anticipated. The majority of the proposed bikeway traverses through mid-elevation lands of the ‘Ewa plain where the ground is relatively flat. The alignment is predominately within FEMA flood zone D, an area where a flood hazard is not determined but flooding is possible. Where the bikeway traverses areas that are expected to be inundated during a 100-year flood, including the drainage areas of Waikele and Kapakahi Streams in the Waipahu flood plain (FEMA zone AE), and the Nānākuli coastal segment (FEMA zone VE), professional engineering studies will be conducted to certify that bikeway improvements will not impede the flow of floodwaters or will not otherwise exacerbate flood or storm wave conditions. As required, stormwater flows will be managed through the project's drainage control system as designed in accordance with applicable Federal, state, and City standards.
Hurricanes	Secondary impacts are not anticipated for the same reason that cumulative impacts are not anticipated. The bikeway and related bridge structures will be designed to meet or exceed the minimum requirements of AASHTO and its Load Resistance Factor Design (LRFD) specifications to withstand the design hurricane
Tsunami	Secondary impacts are not anticipated for the same reason that cumulative impacts are not anticipated. Coastal segments of the Bikeway and Overlook are located within the tsunami evacuation zone and will be more vulnerable to tsunami than inland areas. The Bikeway and Overlook will potentially attract more path users to coastal areas susceptible to tsunami inundation. The existing Civil Defense tsunami warning system of sirens and public announcements will be used to evacuate persons using the Bikeway and Overlook facilities from potential inundation areas. The pathway itself will help to facilitate evacuation from the area..
Botanical Resources ESA Section 7	The construction of the proposed Bikeway and Overlook is not anticipated to result in adverse effects to protected plants species. No negative impact on plant habitats or specific plant communities along the corridor is expected. However, certain measures will be taken to promote native vegetation in the project area. Potential adverse secondary effects could result from the bikeway functioning as a vector for the dispersal of invasive plant and animal species. Informational and educational signage on the path and at the Overlook will be used to raise public awareness and support for management actions related to these threats. In compliance with ESA Section 7, HDOT will consult with the USFWS during and following the project development period to support programs that raise public understanding of botanical resources and support efforts to eradicate threats to native ecosystems and threatened and endangered species.

Avifaunal and Terrestrial Fauna Resources ESA Section 7	The construction of the proposed Bikeway and Overlook is not anticipated to result in adverse secondary effects to protected avifauna or terrestrial fauna species. There is no designated critical habitat in the project area. The portion of the ROW extending west from Waipiʻo Depot Road to approximately the western boundary of Waipahu Intermediate School passes close to the PHNWR and wetland areas used by at least two endangered endemic waterbirds for resting and foraging. These areas do not function as primary habitat for protected avifauna or terrestrial fauna and are not expected to be adversely affected by use of the Bikepath. As with botanical resources, potential adverse secondary effects to avifauna and terrestrial fauna could result from the bikeway functioning as a vector for the dispersal of competing, invasive animal species. Unrestrained dogs on the path also pose a potential threat to wildlife in adjacent areas. Informational and educational signage on the path and at the Overlook will be used to raise public awareness and support for management actions related to these threats. In compliance with ESA Section 7, HDOT will consult with the USFWS as part of its partnership on the Overlook to support programs that raise public understanding and support for efforts to eradicate threats to protected avifauna and terrestrial fauna species.
Archaeological Impact	Adverse secondary impacts to archaeological and cultural resources are not anticipated. Archaeological sites within the project's APE have been identified in an archaeological survey and will be avoided by the project. Consultation with the State Historic Preservation Officer, interested public parties including Native Hawaiian Organizations, and the Federal Advisory Council on Historic Preservation will be undertaken pursuant to Section 106 of the National Historic Preservation Act to ensure the protection of historic properties throughout the project development period. There are no future plans for the Bikeway or Overlook that would involve work in areas outside of the limits of the APE that might otherwise trigger a secondary effect.
Noise Impact [24 CFR Part 51 B]	Adverse secondary noise-related impacts are not anticipated. Use of the Bikeway or Overlook area by bicyclists and pedestrians is not expected to be a significant source of ambient noise since its use will be non-motorized, and continuous and intermittent in nature. To reduce possible negative noise-effects, a Code of Conduct for users will be implemented including a requirement that movement be continuous and that motorized vehicles are prohibited.
Coastal Zone Management Act (CZMA)	The potential for secondary impacts associated with the CZMA are not anticipated based on the following:
1. Recreational Resources	The Bikeway and Overlook project creates a recreational amenity and improves access to shoreline recreational opportunities in Waiʻanae. Potential secondary effects include an increase in the number of people using beach park facilities at Kahe Point, Tracks, Nānākuli, and Ulehawa Beach Parks with a corresponding requirement for increased maintenance and upkeep of park facilities. Primary and secondary project effects related to expansion of recreation opportunities and increased use of existing recreation facilities fulfills a primary objective of the project and of the 2008 Statewide Comprehensive Outdoor Recreation Plan. These effects are considered as beneficial.
2. Historic Resources	Adverse secondary effects to historic properties within the project's APE are not anticipated to result from project activities. Potential secondary effects include greater public awareness of the history of the OR&L railroad and other historic resources along the Bikeway alignment through the provision of interpretive exhibits and signage. Consultation with the State Historic Preservation Officer, interested public parties including Native Hawaiian Organizations, and the Federal Advisory Council on Historic Preservation will be undertaken pursuant to Section 106 of the National

	Historic Preservation Act to ensure the protection of historic properties.
3. Scenic and Open Space	Adverse secondary effects to scenic and open space resources are not anticipated. The Bikeway and Overlook will create new opportunities for people to enjoy scenic views and open space areas from West Loch to the Nānākuli Coast. The Bikeway consists of a concrete path constructed at-grade and will not obstruct views. Limited signage provided for orientation, rules of use, historic interpretation, and other information will be noticeable, but will not degrade scenic resources.
4. Coastal Ecosystems	Potential secondary effects to coastal ecosystems include increased runoff from the Bikeway and Overlook area and threats resulting from increased human activity. Stormwater discharges are not expected to generate significant concentrations of runoff that would adversely affect coastal ecosystems. Stormwater will sheet-flow off the linear path surface and percolate into adjacent groundcover areas or drain into the storm drainage system. Coastal ecosystems can potentially be affected by the increased presence of people and pets on the path where it abuts the shoreline or wetland areas around West Loch. Off-leash dogs pose a threat to native birds, particularly ground-nesting species. The path and Overlook area can potentially serve as a vector for dispersal of invasive species. Information and educational material will be provided on path signage to educate the public about coastal ecosystems, habitat and seasonal behavior of native species, and to engage people to take measures to reduce threats from human activity (harassment, feeding, habitat destruction), loose dogs and other feral animals.
5. Economic Uses	No adverse secondary effects related to economic uses are expected to result from development and use of the Bikeway and Overlook. The Bikeway will have a beneficial effect by enhancing connectivity and supporting alternative modes of transportation. These beneficial effects are not coastal dependent and are not expected to affect the location or expansion of coastal dependent developments.
6. Coastal Hazards	Potential secondary effects from tsunami, hurricanes, flooding, and wave surge are not expected. Impacts associated with coastal hazards will be addressed through adherence to the appropriate Federal, state, and city design standards for project improvements. The Bikeway and Overlook will potentially attract more users to coastal areas susceptible to tsunami inundation. The existing Civil Defense tsunami warning system of sirens and public announcements has been shown to provide reasonable time for people to evacuate potential inundation areas. The pathway will facilitate evacuation by improving access for emergency personnel to enter vulnerable shoreline areas to conduct patrols and issue warnings, and by providing an alternative route for public evacuation to safe areas.
7. Managing Development	Secondary impacts associated with development of the project are not anticipated. The project has been coordinated with the appropriate Federal, state, and City agencies for compliance with environmental rules and regulations. A NEPA Environmental Assessment will be prepared for this project.
8. Public Participation	Public involvement for this project has been coordinated with public and community groups, organizations, and individuals through the project's EA process. Information regarding the Coastal Zone will be disseminated through the review process for a CZM Federal Consistency Determination as determined by the State Office of Planning. No secondary impacts associated with public participation are anticipated.

9. Beach Protection	Adverse secondary effects related to beach protection are not expected. Bikeway improvements follow the former OR&L ROW and utilize existing railroad infrastructure at coastal drainage crossings. Path improvements do not involve shoreline hardening. Shoreline processes will not be affected.
10. Marine Resources	The proposed project does not involve or utilize marine resources. As required by law all necessary permit applications and environmental and building permit approvals will be secured prior to the start of construction. In addition, educational signage will be provided as part of the project to raise public awareness about marine related resources and stewardship. Clearing of invasive mangrove and kiawe vegetation for the Overlook is expected to improve water quality conditions for marine resources in the project vicinity.
Air Quality Impact	Adverse secondary effects related to air quality are not expected. Potential secondary effects to air quality include the beneficial effect of a reduction in emissions from internal combustion engines as a result of replacement of motor vehicles with non-motorized modes of transportation.
Visual Resources Impact	Adverse secondary effects to visual resources are not anticipated. The path and Overlook will create new opportunities for people to enjoy scenic resources from West Loch to the Waiʻanae Coast. The Bikeway and Overlook will consist of a concrete path constructed at-grade and slightly raised viewing platform will not obstruct views. Limited signage provided for orientation, rules of use, historic and natural wildlife interpretation, and other information will be noticeable, but will not degrade scenic views.
Socioeconomic Impact	Adverse secondary effects to socio-economic conditions in the project area are not expected. While development of the Bikeway will improve access and regional connectivity and be an attractive community resource, it is not expected to provide a significant, direct impetus for long-term changes in population, demographics, or job growth.
Public Facilities and Services Impacts **Fire, Police and Medical Services**	The potential for negative adverse secondary impacts associated with the provision of fire, police and emergency medical services are not anticipated. The use of the Bikeway however can be expected to offset the need for public services based on a corresponding reduction in the use of the adjoining public roadway system.
Potable Water	Secondary effects to the potable water source and supply system are not anticipated. Although the project will require the use of water during construction for dust control, such use will be temporary and will be terminated once work activities are completed.
Electricity, Cable and Telephone Utilities	Adverse secondary impacts to utilities are not expected. The project requires relocation of electrical guy wires and overhead utilities in several locations. In addition, the State HDOT will consult with utility providers and petroleum companies throughout design and construction to ensure that underground and overhead utilities are located and that any required temporary or permanent utility relocation is conducted in a manner that eliminates or minimizes disruptions in service. Bikeway use following construction will not adversely affect utilities.
Considerations Relating to Pedestrians and Bicyclists	Adverse secondary effects are not anticipated. At present, there is only limited and segmented access for pedestrians and bicyclists through much of the area to be served by the Bikeway. Beneficial secondary effects of the project include increased public awareness of bicycling and walking as a viable mode of transportation and awareness of pathway access to trip-generating destinations.

Energy	Adverse secondary impacts associated with energy are not expected. Potential beneficial secondary effects may be realized by an increase in bicycle and pedestrian transportation with a corresponding reduction in motor vehicle congestion and reduced reliance on fossil fuels.
Hazardous Waste and Materials Impact	Secondary impacts associated with hazardous waste and materials are not anticipated to result from development or use of the Bikeway and Overlook. Bikeway and Overlook components do not include hazardous materials that would create future waste disposal issues.
Park and Recreational Facilities Impact **LWCFA 6(f)** **DOTA 4(f)**	The project creates a recreational amenity and improves access to parks and to the wildlife viewing facilities at the PHNWR. Potential secondary effects include an increase in the number of people using parks and recreational amenities throughout the region with a corresponding increase in operations and maintenance requirements. Primary and secondary project effects related to expansion of recreation opportunities and increased use of existing recreation facilities fulfills a primary objective of the project and of the 2008 Statewide Comprehensive Outdoor Recreation Plan. None of the parks located adjacent to the proposed project are designated for funding under the LWCF and therefore consultation under Section 6(f) of the LWCF Act is not required for this project. Consultation under Section 4(f) of the DOTA will be performed for this project.
Solid Waste Impact	Secondary impacts are not anticipated. Upon completion of project activities no further disposal of construction related solid waste will be required. Use of the path will result in the generation of refuse at trash receptacles. Trash pickup will be performed by HDOT maintenance crews. Trash will be disposed at the municipal landfill in accordance with City and County regulations.
Relocation-Displacement	No secondary impacts related to relocation-displacement will result from the project. Project facilities will be located primarily within the former OR&L access ROW. Although there will be requirements for some acquisition of land, the areas required will be comprised of narrow linear strips of land to ensure adequate shoulder areas. The relocation or displacement of existing residences or other land uses are not anticipated. No expansion of the project resulting in secondary impacts are anticipated or proposed.

Section11
Findings

This recently updated analysis finds a preliminary conclusion that is similar to the environmental assessment of the project undertaken in 2000, that the implementation of the proposed Leeward Bikeway project would not pose any significant long-term or cumulative impacts on the environment pursuant to an evaluation of the "Significant Criteria" in HAR, Section 11-200-12, environmental impact assessment process.

In accordance with the provisions set forth in HRS, Chapter 343, and the significance criteria in HAR, Section 11-200-12, this assessment preliminarily finds that this project will have no significant adverse impact to water quality, air quality, existing utilities, noise levels, social welfare, archaeological sites, or wildlife habitat. Anticipated effects will be temporary and will not adversely impact the environmental quality of the area. Impacts that have been identified will be mitigated based on the identification of mitigation measures as provided in this document. Based on the review of these factors, it is preliminarily determined that an Environmental Impact Statement (EIS) will not be required and that a Finding of No Significant Impact (FONSI) should be issued for this project.

Section 12
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Appendix A – Leeward Bikeway Record of Consultation, 2000

Leeward Bikeway Agency and Organization Consultation
Environmental Assessment
August 7, 2000

Leeward Bikeway Agency and Organization Consultation
Environmental Assessment
August 7, 2000

Pre-Consultation Letter from Earth Tech to:	Date of Pre-Consultation Letter	EA Comment Letter Date	FEA Response Letter Date
ʻEwa No. 23 Neighborhood Board	February 4, 2000		
Waiʻanae Coast No. 24 Neighborhood Board	February 4, 2000		
Waipahu No. 22 Neighborhood Board	February 4, 2000		
Makakilo/Kapolei/Honokai Hale No. 34	February 4, 2000		
Sierra Club	February 4, 2000		
Life of the Land	February 4, 2000		
Ducks Unlimited	February 4, 2000		
Historic Hawaiʻi Foundation	February 4, 2000		
U.S. Army Corps of Engineers	February 4, 2000	May 11, 2000	August 10, 2000
State of Hawaiʻi, Department of Land and Natural Resources, State Office of Historic Preservation	February 4, 2000	July 7, 2000 **Attachment for Reference:** Archaeological Resources Survey, dated 2/2000	No letter published in FEA, just this: "Note: Burial and Recovery Mitigation Plans are currently in the submittal and review process with DOT and SHPD."
State of Hawaiʻi, Department of Health, Clean Water Branch	February 4, 2000	May 23, 2000	August 10, 2000
Environmental Protection Agency, Region IX	February 4, 2000	June 2, 2000 June 30, 2000	June 19, 2000
U.S. Fish & Wildlife Service	February 4, 2000	April 14, 2000	None in FEA
State of Hawaiʻi, Office of Hawaiian Affairs	February 22, 2000	May 12, 2000	August 10, 2000
Hawaiian Railway Society	April 6, 2000	May 26, 2000 June 7, 2000	August 10, 2000
Additional Agency and Organization Comments			
State of Hawaiʻi, Office of Environmental Quality Control		May 9, 2000	August 10, 2000
University of Hawaiʻi at Mānoa, Environmental Center		June 7, 2000	August 10, 2000
City and County of Honolulu, Department of Planning and Permitting		July 2, 2000	August 10, 2000
City and County of Honolulu, Honolulu Police Department		June 7, 2000	August 10, 2000
City and County of Honolulu Fire Department		May 19, 2000	August 10, 2000
Ko Olina Community Association		June 7, 2000	
J.W. Marriott Ihilani Resort and Spa		July 6, 2000	August 10, 2000

February 4, 2000

Ms. Mary Miyashiro, Chair
Ewa No.23 Neighborhood Board
c/o Neighborhood Commission
City Hall, Room 400
Honolulu, HI 96813

Dear Ms. Miyashiro:

The public is invited to review and comment on an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the historic former OR & L railroad as required by the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed.

Permits that may be required for this project include a US Army Corps of Engineers (USACE) Section 404 Permit; a Department of Health (DOH) Section 401 Water Quality Certification; State Coastal Zone Management Program (CZMP) Consistency Determination; State Stream Channel Alteration Permit; National Pollutant Discharge Elimination System (NPDES) Construction Dewatering Permit; and State Historic Preservation Clearance. The impacts and proposed mitigation measures are described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

An informational meeting can be arranged if there is sufficient public interest. At the meeting, the public can have an opportunity to ask questions or address concerns to the DOT/Earth Tech. The time period for such a meeting would be while the Final EA is being drafted, prior to submittal to the Office of Environmental Quality Control (OEQC). The notice of submittal of the Draft EA will be placed in the semi-monthly OEQC bulletin, and placed for review at the Pearl City Regional Library and the Hawaii Documents Center, Hawaii State Library.

If you have interest in an informational meeting or any immediate questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl B. Bromwell

Karl Bromwell
Project Manager
Attachments: Figure 1

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February 4, 2000

Ms. Cynthia Rezentes, Chair
Waianae Coast No.24 Neighborhood Board
c/o Neighborhood Commission
City Hall, Room 400
Honolulu, HI 96813

Dear Ms. Rezentes:

The public is invited to review and comment on an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the historic former OR & L railroad as required by the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed.

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Permits that may be required for this project include a US Army Corps of Engineers (USACE) Section 404 Permit; a Department of Health (DOH) Section 401 Water Quality Certification; State Coastal Zone Management Program (CZMP) Consistency Determination; State Stream Channel Alteration Permit; National Pollutant Discharge Elimination System (NPDES) Construction Dewatering Permit; and State Historic Preservation Clearance. The impacts and proposed mitigation measures are described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

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If you have interest in an informational meeting or any immediate questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl B. Bromwell

Karl Bromwell
Project Manager
Attachments: Figure 1

February 4, 2000

Ms. Annette Yamaguchi, Chair
Waipahu No.22 Neighborhood Board
c/o Neighborhood Commission
City Hall, Room 400
Honolulu, HI 96813

Dear Ms. Yamaguchi:

The public is invited to review and comment on an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the historic former OR & L railroad as required by the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed.

Permits that may be required for this project include a US Army Corps of Engineers (USACE) Section 404 Permit; a Department of Health (DOH) Section 401 Water Quality Certification; State Coastal Zone Management Program (CZMP) Consistency Determination; State Stream Channel Alteration Permit; National Pollutant Discharge Elimination System (NPDES) Construction Dewatering Permit; and State Historic Preservation Clearance. The impacts and proposed mitigation measures are described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

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If you have interest in an informational meeting or any immediate questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl B Bromwell

Karl Bromwell
Project Manager
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February 4, 2000

Ms. Maeda Timson, Chair
Makakilo/Kapolei/Honokai Hale No.34
Neighborhood Board
c/o Neighborhood Commission
City Hall, Room 400
Honolulu, HI 96813

Dear Ms. Timson:

The public is invited to review and comment on an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the historic former OR & L railroad as required by the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed.

Permits that may be required for this project include a US Army Corps of Engineers (USACE) Section 404 Permit; a Department of Health (DOH) Section 401 Water Quality Certification; State Coastal Zone Management Program (CZMP) Consistency Determination; State Stream Channel Alteration Permit; National Pollutant Discharge Elimination System (NPDES) Construction Dewatering Permit; and State Historic Preservation Clearance. The impacts and proposed mitigation measures are described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

An informational meeting can be arranged if there is sufficient public interest. At the meeting, the public can have an opportunity to ask questions or address concerns to the DOT/Earth Tech. The time period for such a meeting would be while the Final EA is being drafted, prior to submittal to the Office of Environmental Quality Control (OEQC). The notice of submittal of the Draft EA will be placed in the semi-monthly OEQC bulletin, and placed for review at the Pearl City Regional Library and the Hawaii Documents Center, Hawaii State Library.

If you have interest in an informational meeting or any immediate questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl B Bromwell

Karl Bromwell
Project Manager
Attachments: Figure 1

Telephone
808.523.8874
Facsimile
808.523.8950

February 4, 2000

Mr. Jeff Mikulina
Sierra Club
PO Box 2577
Honolulu, HI 96803

Dear Mr. Mikulina:

The Department of Transportation (DOT) has contracted Earth Tech Inc. (Earth Tech) to conduct an Environmental Assessment (EA) for the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway and Land (OR & L) railroad from Lualualei Naval Road to the west end of the Westlock Bikeway, and then from the eastern end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the Historic OR & L railroad as required in the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage structures will also be constructed.

Telephone
808.523.8874
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808.523.8950

Permits that may be required for this project include a US Army Corps of Engineers (USACE) Section 404 Permit; a Department of Health (DOH) Section 401 Water Quality Certification; State Coastal Zone Management Program (CZMP) Consistency Determination; State Stream Channel Alteration Permit; National Pollution Discharge Elimination System (NPDES) Construction Dewatering Permit; and State Historic Preservation Clearance. The impacts and proposed mitigation measures are described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

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If you have interest in an informational meeting or any immediate questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl B. Bromwell

Karl Bromwell
Project Manager
Attachments: Figure 1

February 4, 2000

Ms. Kat Brady
Life of the Land
76 N. King St. Ste. 203
Honolulu, HI 96817

Dear Ms. Brady:

The State Department of Transportation (DOT) has contracted Earth Tech Inc. (Earth Tech) to conduct an Environmental Assessment (EA) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the historic former OR & L railroad as required by the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20-foot from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed.

Permits that may be required for this project include a US Army Corps of Engineers (USACE) Section 404 Permit; a Department of Health (DOH) Section 401 Water Quality Certification; State Coastal Zone Management Program (CZMP) Consistency Determination; State Stream Channel Alteration Permit (SCAP); National Pollutant Discharge Elimination System (NPDES) Construction Dewatering Permit; Conservation District Use Application (CDUA) and State Historic Preservation Clearance. The impacts and proposed mitigation measures are described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

An informational meeting can be arranged if there is sufficient public interest. At the meeting, the public can have an opportunity to ask questions or address concerns to the DOT/Earth Tech. The time period for such a meeting would be while the Final EA is being drafted, prior to submittal to the Office of Environmental Quality Control (OEQC). The notice of submittal of the Draft EA will be placed in the semi-monthly OEQC bulletin, and placed for review at the Pearl City Regional Library and the Hawaii Documents Center, Hawaii State Library.

If you have interest in an informational meeting or any immediate questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl B. Bromwell

Karl Bromwell
Project Manager
Attachments: Figure 1

Telephone
808.523.8874
Facsimile
808.523.8950

April 6, 2000

Ms. Kim Uehara
Ducks Unlimited
73-1270 Awa Kea Street
Kona, HI 96740

Dear Ms. Uehara:

The State Department of Transportation (DOT) has contracted Earth Tech Inc. (Earth Tech) to conduct an Environmental Assessment (EA) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR&L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the historic former OR & L railroad as required by the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20-foot from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed.

Permits that may be required for this project include a US Army Corps of Engineers (USACE) Section 404 Permit; a Department of Health (DOH) Section 401 Water Quality Certification; State Coastal Zone Management Program (CZMP) Consistency Determination; State Stream Channel Alteration Permit (SCAP); National Pollutant Discharge Elimination System (NPDES) Construction Dewatering Permit; Conservation District Use Application (CDUA) and State Historic Preservation Clearance. The impacts and proposed mitigation measures are described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

An informational meeting can be arranged if there is sufficient public interest. At the meeting, the public can have an opportunity to ask questions or address concerns to the DOT/Earth Tech. The time period for such a meeting would be while the Final EA is being drafted, prior to submittal to the Office of Environmental Quality Control (OEQC). The notice of submittal of the Draft EA will be placed in the semi-monthly OEQC bulletin, and placed for review at the Pearl City Regional Library and the Hawaii Documents Center, Hawaii State Library.

If you have interest in an informational meeting or any immediate questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl B. Bromwell

Karl Bromwell, *M.P.H.*
Project Manager
Attachments: Figure 1

Telephone
808.523.8874
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808.524.8930

February 22, 2000

David Scott
Historic Hawaii Foundation
PO Box 1658
Honolulu, HI. 96806

Early coordination is requested from the Historic Hawaii Foundation (HHF) regarding an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access for the public along the historic former OR & L railroad as required in the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed. An appropriate Best Management Plan will be incorporated for construction practices in accordance with the Department of Health (DOH) 401 Water Quality Certification.

Actions relevant to HHF, among others, for this project include historic preservation clearance. The project area is being surveyed, and potential impacts and mitigation measures are currently being addressed by Mr. Thomas Dye, of International Archeological Research Institute, Inc. The sites, impacts and proposed mitigation measures will be described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

If you have any comments or questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl Bromwell

Karl Bromwell, M.P.H.
Project Manager
Attachments: Figure 1

Telephone
808.523.8874
Facsimile
808.523.8950

February 4, 2000

Ms. Lolly Silva
US Army Corps of Engineers
Honolulu District
Building 230
Fort Shafter, HI 96858-5440

Dear Ms. Silva:

Early coordination is requested from the US Army Corps of Engineers (USACE) regarding an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the historic former OR & L railroad as required in the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed. An appropriate Best Management Plan will be incorporated for construction practices in accordance with the Department of Health (DOH) 401 Water Quality Certification.

Permits that may be required for this project include a US Army Corps of Engineers (USACE) Section 404 Permit; a DOH Section 401 Water Quality Certification; State Coastal Zone Management Program (CZMP) Consistency Determination; State Stream Channel Alteration Permit (SCAP); National Pollutant Discharge Elimination System (NPDES) Construction Dewatering Permit; Conservation District Use Application (CDUA) and State Historic Preservation Clearance. The project area is being surveyed and potential impacts and mitigation measures are currently being address by Mr. Eric Gunther of AECOS Inc. The impacts and proposed mitigation measures will be described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

If you have any comments or questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl Bromwell
Project Manager
Attachments: Figure 1

Telephone
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Facsimile
808.523.8950

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

REPLY TO
ATTENTION OF

May 11, 2000

Regulatory Branch

Mr. Karl B. Bromwell
Earth Tech, Inc.
700 Bishop Street, Suite 900
Honolulu, Hawaii 96813

Dear Mr. Bromwell:

This is in response to your letter requesting comments on the Draft Environmental Assessment (DEA) for the Leeward Bikeway project. Based on a cursory review of the DEA, a Department of the Army permit will be required as waters of the U.S. including wetlands will be impacted. Please contact Ms. Lolly Silva of my staff at 438-7023 to arrange a meeting to discuss the various permits available under which this project can be authorized. In addition, you should be prepared to discuss wetland impacts and possible mitigation requirements.

File Number 200000098 is assigned to this project. Please refer to this number in any future correspondence with our office.

Sincerely,

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

Mr. George P. Young, P.E.,
Chief, Regulatory Branch
US Army Corps of Engineers
Honolulu District
Building 230
Fort Shafter, HI 96858-5440

Attn: Ms. Lolly Silva

Subject: **Draft Environmental Assessment, Leeward Bikeway,**
OR&L Railway Right of Way,
Ewa and Waianae Districts, Oahu
Project No.s STP-0300(55) and STP-0300(56)
Corps Of Engineers File Number: 200000098

Dear Reviewer:

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. We appreciate your efforts in reviewing the document and provide the following response to your comments:

- As part of this project, permitting through the US Army Corps of Engineers will be completed and coordinated with Ms. Lolly Silva.

If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B Bromwell

Karl B. Bromwell, M.P.H.
Project Manager

Telephone
808.524.8874
Facsimile
808.524.8950

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

Telephone
808.523.8874

Facsimile
808.523.8950

February 4, 2000

Ms. Elaine Jourdane
State Office of Historic Preservation
601 Kamokila Bl, Room 555
Kapolei, HI 96707

Dear Ms. Jourdane:

Early coordination is requested from the State Office of Historic Preservation (SHPO) regarding an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access for the public along the historic former OR & L railroad as required in the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed. An appropriate Best Management Plan will be incorporated for construction practices in accordance with the Department of Health (DOH) 401 Water Quality Certification.

Actions relevant to SHPO, among others, for this project include historic preservation clearance. The project area is being surveyed, and potential impacts and mitigation measures are currently being addressed by Mr. Thomas Dye, of International Archeological Research Institute, Inc. The sites, impacts and proposed mitigation measures will be described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

If you have any comments or questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl Bromwell
Project Manager
Attachments: Figure 1

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

STATE OF HAWAII

DEPARTMENT OF LAND AND NATURAL RESOURCES

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

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

DEPUTIES
JANET E. KAWELO

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

July 7, 2000

Karl Bromwell, Project Manager
Earth Tech
700 Bishop Street, Suite 900
Honolulu, Hawaii 96813

LOG NO: 25733
DOC NO: 0007EJ03

Dear Mr. Bromwell:

SUBJECT: **Chapter 6E-8 Historic Preservation Review – State of Hawaii Department of Transportation Highways Division, Draft Environmental Assessment (DEA) for the Leeward Bikeway in the Districts of Ewa and Wai`anae Waipahu, Ewa to Nanakuli, Waianae**
TMK: 8 & 9

Thank you for the opportunity to comment on the draft Environmental Assessment for the proposed Leeward Bikeway. The project proposes construction of bridges, retaining walls, railroad crossings and culverts along various sections of the proposed bikeway. Our review is based on historic reports, maps, and aerial photographs maintained at the State Historic Preservation Division; no field inspection was made of the project areas.

The EA includes a very good assessment on the archaeological resources within the project area. This assessment, synthesized in Section 3.3 of the DEA, determined that there are three known historic sites within the proposed bikeway corridor: 1) the OR&L Right-of-way [SIHP 50-80-12-9714], 2) the Pouhala fishpond [SIHP 50-80-09-126] and 3) a former traditional Hawaiian burial site near Kahe beach [50-80-12-4061]. The archaeological assessment also suggests other areas where historic sites might be found, such as in gulches undisturbed by commercial sugar cane cultivation, within jaucus beach sand deposits between the Kahe power plant to Lualualei Naval Road, and within the sediments associated with Loko Pouhala's use as a fishpond.

In order to mitigate any potential adverse effects this project would have on significant historic sites, the DEA recommends that archaeological monitoring take place in areas where ground disturbing activities has the potential to affect unknown buried historic sites. Specifically, monitoring is proposed for the beach sand areas along the stretch immediately north of Kahe Point to Lualualei Naval Road. Data recovery as a form of mitigation is

proposed for Loko Pouhala fishpond because the sediments within this wetland have the potential to contain information on Hawaiian history and prehistory.

We concur that archaeological monitoring and data recovery are appropriate means of mitigating any adverse effect this project will have on historic sites. The next step in the historic preservation review process would be the submittal of archaeological monitoring and data recovery plans for review and acceptance by the SHPD. We look forward to reviewing these plans.

Should you have any questions, please feel free to call Sara Collins at 692-8026 or Elaine Jourdane at 692-8027.

Aloha,

for TIMOTHY E. JOHNS
State Historic Preservation Officer

EJ:jk

NOTE:

Burial and Recovery Mitigation Plans are currently in the submittal and review process with DOT and SHPD.

International Archaeological Research Institute, Inc.

PREHISTORIC & HISTORIC INVESTIGATIONS • CULTURAL RESOURCES ASSESSMENTS & PLANNING • PALEOENVIRONMENTAL STUDIES

February 2, 2000

Karl B. Bromwell
Earth Tech, Inc.
700 Bishop Street, Suite 900
Honolulu, Hawaii 96813

Dear Mr. Bromwell:

Re: Archaeological Resources Survey, Leeward Bikeway Environmental Assessment, Hawaii Department of Transportation, Highway Division

At the request of Earth Tech, Inc., International Archaeological Research Institute, Inc. has completed background research on historic sites for the Leeward Bikeway Environmental Assessment. The proposed leeward bikeway follows an approximately 14 mile route along the Oahu Railway and Land Company (OR&L) railroad line from Waipi`o Point Access road in Waipi`o *ahupua`a* through the *ahupua`a* of Waikele, Hō`ae`ae, Honouliuli, and Nanakuli to its terminus at Lualualei Naval road in Wai`anae *ahupua`a* (Fig. 1). The goals of the background research were to determine: 1) the presence or absence of known historic sites along the proposed route; 2) the likelihood of discovering significant historic sites during bikeway construction; and 3) the types of historic sites that might be discovered. The goals of the research were achieved through a review of materials at the State Historic Preservation Division in Kapolei, including archaeological reports, site location maps, site files, Geographic Information System data, and a field check of potentially important locations along the proposed bikeway route.

Locations of Known Sites and Their Significance

Three historic sites are known along the proposed bikeway route, including the OR&L Right of Way, a former traditional Hawaiian burial site, and abandoned Pouhala fishpond (Fig. 1).

The proposed bikeway follows the OR&L Right of Way, portions of which are listed or have been determined eligible for listing on the National Register of Historic Places (NRHP). A 13 mile, 40 ft. wide right of way listed on the NRHP (National Register of Historic Places 1975) begins at the intersection of Farrington Highway and Lualualei Road in Wai`anae *ahupua`a*, passes through Nanakuli *ahupua`a*, and ends about 300 ft. east of Fort Weaver Road in Honouliuli *ahupua`a* (Fig. 1). The railway along this section consists of narrow-gauge steel rails (36") on a raised roadbed of mixed materials. The right of way is significant because it is the longest remaining continuous stretch of narrow-gauge OR&L railroad track, is the longest stretch of continuous railroad track in Hawaii, and is also one of the longest stretches of narrow-gauge railroad track in place in the United States. A second section of right of way, approximately 1,000 ft. long, that passes over federal land at the National Wildlife Refuge at West Loch, was determined eligible for listing in 1989 (Paty 1989). This portion of the OR&L line is part of the existing West Loch bike path, which is outside the scope of this survey.

HAWAII: 2081 Young Street, Honolulu, Hawaii 96826-2231 Tel: (808) 946-2548 Fax: (808) 943-0716 e-mail: iarii@aloha.net
GUAM: P.O. Box 22621, GMF, Guam 96921 Tel/Fax: (671) 734-2755 e-mail: iarii@kuentos.guam.net
PALAU: P.O. Box 1714-i103, Koror, Palau 96940 Tel/Fax: (680) 587-3631 e-mail: iarii@palaunet.com

Site 50-80-12-4061 marks the spot in Honouliuli *ahupua`a* (Fig. 1) where a mandible, right scapula fragment, and portions of a right femur and humerus, probably from the same individual, were recovered eroding out of the sand on December 28, 1987 (Pietrusewsky 1988). The individual was identified as a young adult of undetermined sex, probably of Polynesian ethnicity, with dental caries and periodontal disease. The remains were determined to be ancient. According to State Historic Preservation Division records the remains were scheduled for reinterment at a separate location, and are no longer present at Site 4061. Thus, the site is not significant today, although the discovery of human remains indicates that other burials might be located in similar circumstances along this coast.

Site 50-80-09-126, Pouhala and Ulumoku (or Kaaukuu) fishponds, are located in Waikele *ahupua`a* (Fig. 2). In 1900, the two ponds were divided into a number of smaller ponds, some of which were used for rice cultivation (McAllister 1933:106). Today, the area around Pouhala pond is a low-lying wetland with poorly drained soils, portions of which are still used for small-scale agriculture. Ulumoku fishpond, south of the proposed bikeway route, has been deeply filled with urban waste. Fishpond sediments, if present today in the wetland, would be significant for the information on Hawaiian history and prehistory that they are likely to yield.

Site 50-80-09-123, Loko Eo, is a fishpond located in Waipi`o *ahupua`a* (Fig. 2). This fishpond was probably filled in the 1940s by a sugar company, which used it as a settling pond for capturing topsoil from irrigation water. Most of the former pond is used today as Ted Makalena Golf Course. Paleoenvironmental coring at the pond indicates that intact sediments are found at a depth greater than 7 m below surface, a depth corresponding to a time more than 2,500 years ago, well before the islands were first settled (Athens 1999). It is unlikely that intact fishpond sediments from Loko Eo remain. The site is thus not eligible for listing on the State and National Registers of Historic Places.

Locations Where Historic Sites Are Likely To Be Found

Most of the proposed bikeway route crosses abandoned sugarcane fields in Honouliuli *ahupua`a*. Much of the agricultural soil here was deposited in the late 19th century through the efforts of sugar planters. Steam plows in the sugarcane fields routinely reached depths of 3 ft.; their repeated application over the years of sugarcane cultivation in the region would have destroyed any historic sites that were not deeply buried. The only traditional Hawaiian historic sites in the old sugarcane fields were found in (former) gulches where they escaped the work of the plow. There are no surface sites along the proposed bikeway route from Kahe Point to the terminus east of Fort Weaver Road.

The section from Kahe Point to the terminus at Lualualei Naval Road crosses several expanses of beach sand, including a long stretch immediately north of Kahe Point, another surrounding the outlet of Nanakuli Stream, and a final stretch over the last approximately 3,000 ft. to the terminus at Lualualei Naval Road. In these areas construction of two planned retaining walls, three bridges, and any other actions requiring excavation have the potential to discover traditional Hawaiian burials, similar to the burial discovered at Site 50-80-12-4061.

The section connecting the existing West Loch and Pearl Harbor bikepaths runs along the *makai* edge of urbanized Waipahu town, but crosses over the abandoned fishponds Loko

Pouhala and Loko Eo. Fishpond sediments associated with Loko Pouhala are likely to exist in the wetland in Waikele *ahupua'a*. These deposits would be significant for the information on Hawaiian history and prehistory that they contain. It is unlikely that intact sediments associated with Loko Eo will be found because these were most probably disturbed or destroyed when the pond was filled more than a half century ago.

Recommendations for Completing the Historic Preservation Review Process

Construction of the proposed bikeway will have "no effect" on the qualities that make the OR&L Right of Way significant, i.e. its status as the longest continuous stretch of narrow-gauge railway in the U.S., the longest continuous stretch of railway in Hawaii, and the longest remaining stretch of the OR&L line. The bikeway has the potential to make this significant historic site accessible to a larger segment of the public, and it is recommended that information about the history of the railroad be made available with signage along the bikeway or by other means.

Two retaining walls and three bridges are proposed in the section of bikeway from Kahe Point to Lualualei Naval Road. These appear to be in or near areas of beach sand with a potential to contain unmarked human burials. Because it is not possible to predict the locations of unmarked human burials in sandy areas such as this, and because it would not be practical to conduct subsurface inventory survey over the entire areas potentially affected by the proposed retaining walls and bridges, it is recommended that construction activities for the retaining walls and bridges, along with areas of cut slope requiring excavation be monitored by a qualified archaeologist. Matters of burial treatment for traditional Hawaiian remains rests with the O'ahu Island Burial Council, and it is recommended that the council and other interested parties be consulted prior to construction so that a plan to deal with inadvertently discovered human remains can be developed.

At Pouhala pond, a 62' long existing bridge structure might be renovated. Depending upon the scope of this renovation, intact fishpond sediments might be exposed and disturbed, an action constituting an adverse effect on historic sites. In this case, a data recovery plan to collect samples for characterization of the paleoenvironment, including pollen and material for radiocarbon dating, should be developed and implemented. Such a plan would mitigate the adverse effects of construction on significant fishpond deposits at Pouhala pond.

Thank you for the opportunity to carry out this archaeological resources survey. If you have any questions please feel free to contact me at our Honolulu office, 946-2548 x116.

Sincerely,

Thomas S. Dye

Thomas S. Dye
Senior Archaeologist

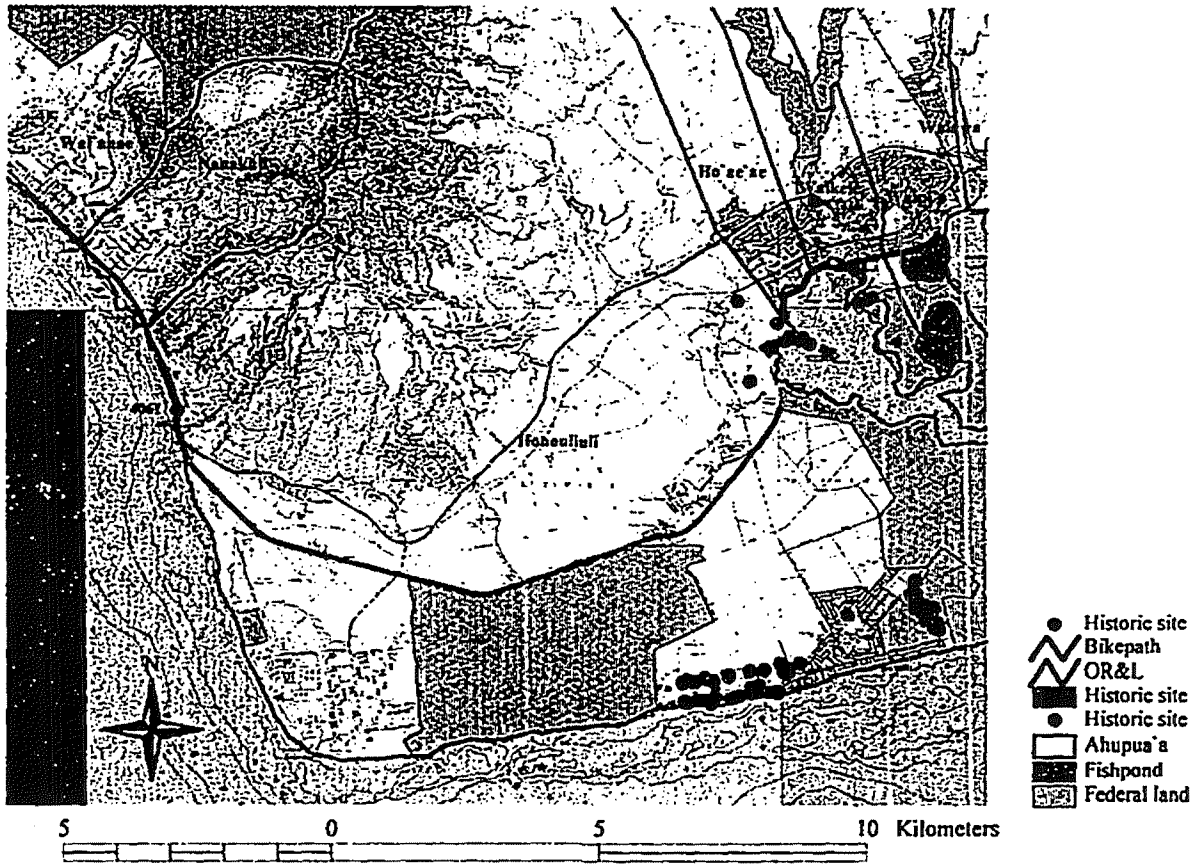


Figure 1. Proposed bikeway in relation to known historic sites.

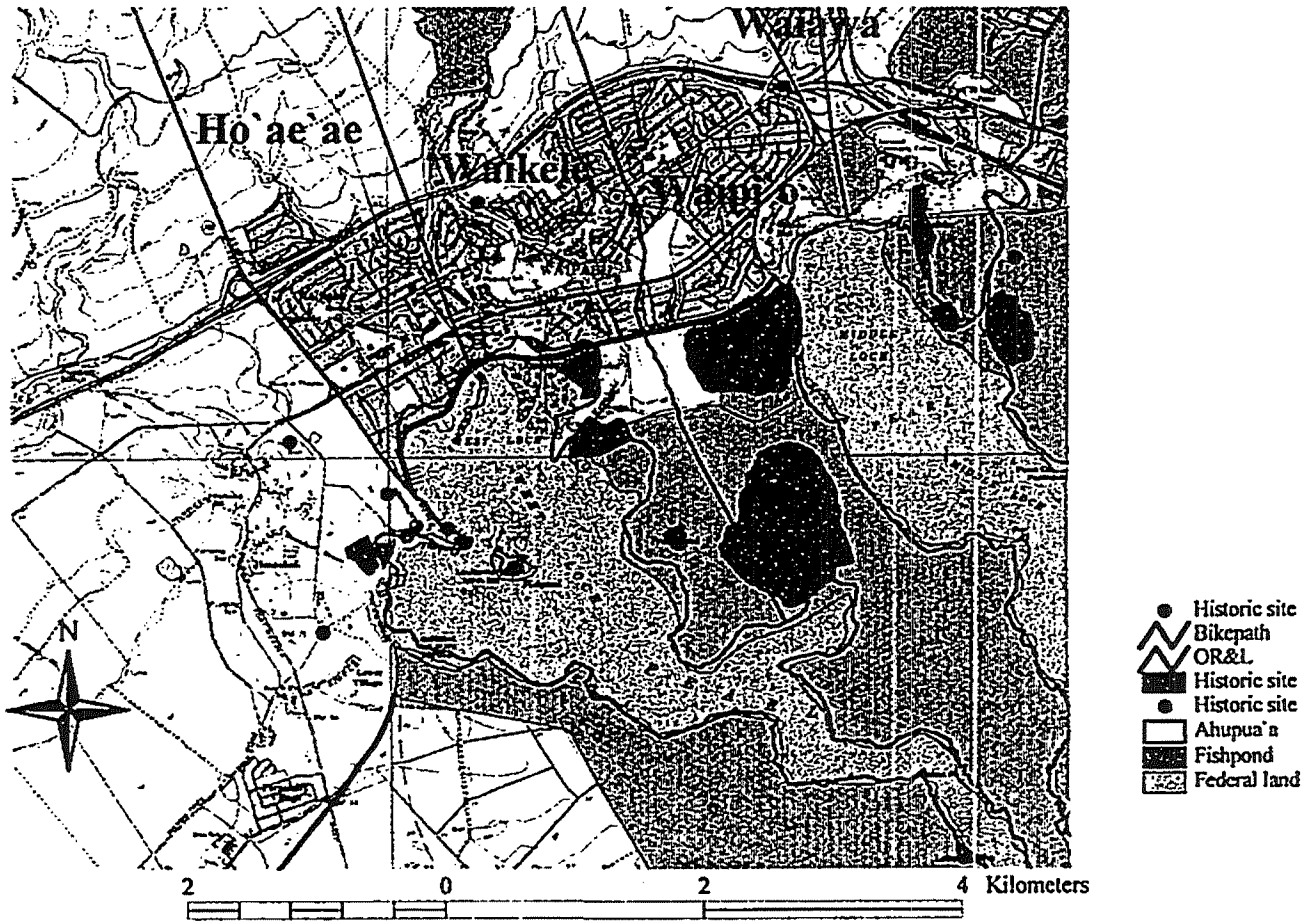


Figure 2. Proposed bikeway location in Hō`ae`ae, Waikele, and Waipi`o *ahupua`a*.

Athens, J. Stephen
1999 *Ancient Hawaiian Fishponds of Pearl Harbor: Archaeological and Historical Studies on U.S. Navy Lands, Hawai'i.* Prepared for State Historic Preservation Division, Department of Land and Natural Resources. International Archaeological Research Institute, Inc., Honolulu.

McAllister, J. Gilbert
1933 *Archaeology of Oahu.* Bernice P. Bishop Museum Bulletin 104. Bernice P. Bishop Museum, Honolulu.

National Register of Historic Places
1975 Inventory Nomination Form—Historic Oahu Railway and Land Company Right of Way. On file, State Historic Preservation Division, Kapolei.

Paty, William W.
1989 September 12 letter to J. M. Kilian, Naval Facilities Engineering Command. On file, State Historic Preservation Division, Kapolei.

Pietrusewsky, Michael
1988 Forensic Identification Report dated 12/7/88. Site file 4061, State Historic Preservation Division, Kapolei.

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

Telephone
808.523.8874
Facsimile
808.523.8950

February 4, 2000

Mr. Ed Chen and Mr. Shane Sumida
State of Hawaii, Department of Health
Clean Water Branch
919 Ala Moana, Room 301
Honolulu, HI 96813

Dear Sirs:

Early coordination is requested from the State of Hawaii (DOH) regarding an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the historic former OR & L railroad as required in the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed. An appropriate Best Management Plan will be incorporated for construction practices in accordance with the DOH 401 Water Quality Certification.

Permits relevant to the DOH, among others, include a DOH Section 401 Water Quality Certification, National Pollution Discharge Elimination System (NPDES) Permit, State Coastal Zone Management Program (CZMP) Consistency Determination, State Stream Channel Alteration Permit. The project area is being surveyed and potential impacts and mitigation measures are currently being address by Mr. Eric Gunther of AECOS Inc. The impacts and proposed mitigation measures are described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

If you have any comments or questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl B. Bromwell

Karl Bromwell
Project Manager
Attachments: Figure 1

BENJAMIN J. CAYETANO
GOVERNOR OF HAWAII

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

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

In reply, please refer to
EMD/CWB

05092PSS.00

May 23, 2000

Mr. Karl B. Bromwell
Project Manager
Earth Tech, Inc.
700 Bishop Street, Suite 900
Honolulu, HI 96813

Dear Mr. Bromwell:

Subject: **Draft Environmental Assessment for Leeward Bikeway**
Districts of Ewa and Waianae, Oahu
Project Nos. STP-0300(55) and STP-0300(56)

The Department of Health, Clean Water Branch (DOH-CWB) acknowledges receipt of the Draft Environmental Assessment (DEA) for the subject project. The DOH-CWB recognizes that the project may require a Section 401 Water Quality Certification (WQC) and coverages under the National Pollutant Discharge Elimination System (NPDES) General Permits for the discharge of storm water associated with construction activity and the discharge of construction activity dewatering. The DOH-CWB reserves the right to comment on the project during the processing of the WQC application and the Notices of Intent for coverage under the NPDES General Permits.

Should you have any questions, please contact Mr. Edward Chen (WQC), Ms. Hong Chen (stormwater), or Mr. Shane Sumida (construction dewatering) of the Engineering Section at 586-4309.

Sincerely,

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

SS:auc

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

August 10, 2000

Denis R. Lau, P.E., Chief
State of Hawaii Department of Health
Clean Water Branch
919 Ala Moana, Room 301
Honolulu, HI 96813

Attn: Mr. Edward Chen, Ms. Hong Chen, Mr. Shane Sumida

Subject: **Draft Environmental Assessment, Leeward Bikeway, OR&L Railway Right of Way, Ewa and Waianae Districts, Oahu Project No.s STP-0300(55) and STP-0300(56)**

Dear Reviewer:

Telephone
808.523.8874
Facsimile
808.523.8950

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. We appreciate your efforts in reviewing the document and provide the following response to your comments:

- As part of this project, permitting through the State of Hawaii Department of Health will be completed for Section 401 Water Quality Certification and coverages under the National Pollutant Discharge Elimination System (NPDES) General Permits. We will be coordinating the permitting with Mr. Edward Chen (for WQC) and Ms. Hong Chen (for stormwater) and Mr. Shane Sumida (for construction dewatering).

If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

Telephone
808.523.8874
Facsimile
808.523.8950

February 4, 2000

Mr. Hillary Hecht
WTR-9
US Environmental Protection Agency-Region 9
75 Hawthorn Street
San Francisco, CA 94105

Dear Mr. Hecht:

Early coordination is requested from the US Environmental Protection Agency (USEPA) regarding an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the historic former OR & L railroad as required in the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka (mountain) side in some areas, and the makai (ocean) side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed. An appropriate Best Management Plan will be incorporated for construction practices in accordance with the State of Hawaii Department of Health (DOH) 401 Water Quality Certification.

Issues relevant to the USEPA, among others, include a Sole Source Aquifer Review pursuant to Section 1424 (e) of the Safe Drinking Water Act. The aquifer (s) and status codes for the project area are currently being assessed. Any possible impacts and proposed mitigation measures will be described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

If you have any comments or questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl B Bromwell

Karl Bromwell
Project Manager
Attachments: Figure 1

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Mail Code WTR-9

June 2, 2000

Karl Bromwell
EARTHTECH
700 Bishop Street, Suite 900
Honolulu, HI
96813

Re: Leeward Bikeway OR&L Railway Easement Project

Dear Mr. Bromwell:

Thank you for your correspondence of 8 May 2000 providing information about the mentioned project. The project is located within the SOBA Sole Source Aquifer designation. Under provisions of the Safe Drinking Water Act, Section 1424(e), EPA is charged with review of projects that receive federal financial assistance and are located in Sole Source Aquifer areas. This program is designed by Congress to assure that projects receiving federal financial assistance are constructed to prevent contamination of drinking water resources.

I am requesting further information as follows.

Please clarify whether or not retention/detention basins (for runoff control) are part of the project design.

The project involves excavation in a railway r-o-w. Apparently unregulated dumping has taken place in the project area. Does the project design include a contingency for subsurface contamination if encountered during excavation activities?

The project involves the construction of several new bridge spans, including piers, across dry gulches. Are any of these piers expected to penetrate the water table?

When I receive this additional information, I will be better able to determine whether the project will adversely impact the Sole Source Aquifer.

If you have questions, do not hesitate to contact me at (415) 744-1890.

Sincerely,

Hillary Hecht
Hydrogeologist
Ground Water Office

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

Telephone
808.525.8874

Facsimile
808.525.8950

June 19, 2000

Hillary Hecht
Hydrogeologist, Groundwater Office
US Environmental Protection Agency, Region IX
75 Hawthorn Street
San Fransico, CA 94105
Mail Code WTR-9

Subject: **Draft Environmental Assessment, Leeward Bikeway, OR&L Railway Right of Way,**
Ewa and Waianae Districts, Oahu
Project No.s STP-0300(55) and STP-0300(56)

Dear Reviewer:

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. The final EA (FEA) has been amended to reflect your comments where appropriate. We appreciate your efforts in reviewing the document and provide the following response to your comments:

Please clarify whether or not retention/detention basins (for runoff control) are part of the project design. Retention or detention basins are not part of the project design. However, runoff control best management practices (BMPs) will be used during construction. A construction Best Management Plan will be developed for the State of Hawaii Department of Health 401 Water Quality Certification (WQC) as well as National Pollutant Discharge Elimination System (NPDES) permits near streams.

The project involves excavation in the railway right-of-way. Apparently unregulated dumping has taken place in the project area. Does the project design include a contingency for subsurface contamination if encountered during excavation activities? Most of the dumping observed in the vicinity of the proposed project site has been solid waste (i.e., loads of concrete, piles of rebar, abandoned cars). These materials are not anticipated to require handling as hazardous or regulated wastes. After consultation with the State of Hawaii Department of Transportation, the following comment has been added to Section 4.5; *In the event that subsurface contamination is encountered, it will be identified and handled appropriately in accordance with State of Hawaii and US EPA regulations.*

The project involves the construction of several new bridge spans, including piers, across dry gulches. Are any of these piers expected to penetrate the water table? The following is listed in Section 2.2 Proposed Action:

Pili O Kahe Gulch. 55-foot long prestressed girder bridge; no piers in the stream.
Keanaoio Gulch. 180-foot long prestressed girder bridge; 3 span bridge with 2 piers in the stream.
Gulch at the south end of Kahe Point Beach Park; 30-foot long prestressed girder bridge with no piers in the stream.
Gulch ½ mile west of Kalaeloa Boulevard; 66-foot long prestressed girder bridge, 2 span bridge with one pier in the stream.
Gulch just east of Kalaeloa Boulevard; 17-foot long prestressed girder bridge with no piers in the stream.

Keanaoio Gulch will have 2 piers in the stream bed. It is likely that the piers will be driven into groundwater since the crossing location is in a backbeach area and is close to the ocean. The groundwater at this location is likely brackish, as is the ponded water present in the Muliwai at this location.

Gulch ½ mile west of Kalaeloa Boulevard may have one pier in the stream bed. However, DOT has reviewed the site, and it may not require a pier at all. In the event that a pier is required, it is not anticipated to encounter groundwater, since it is approximately 65-70 feet above mean sea level, the anticipated groundwater elevation in this portion of the Ewa Plain.

As described in Section 3.15.2 and Table 3-8, the groundwater in the vicinity of Keanaoio Gulch and Kalaeloa Boulevard is classified as Moderate Salinity (1,000 to 5,000 parts per million chloride) and is not in use for potable drinking water.

Please review the responses to your questions and reply by 10 July 2000, the date of submittal of the FEA for review. If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 808-523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager

UNITED STATES ENVIRONMENTAL PROTECTION AGENCY
REGION IX
75 Hawthorne Street
San Francisco, CA 94105

Mail Code WTR-9

June 30, 2000

Karl Bromwell
EARTHTECH
700 Bishop Street, Suite 900
Honolulu, HI
96813

Re: Leeward Bikeway OR&L Railwa

Dear Mr. Bromwell:

Thank you for your correspondence of 19 June 2000 providing additional information about the mentioned project. The project is located within the SOBA Sole Source Aquifer designation. Under provisions of the Safe Drinking Water Act, Section 1424(e), EPA is charged with review of projects that receive federal financial assistance and are located in Sole Source Aquifer areas. This program is designed by Congress to assure that projects receiving federal financial assistance are constructed to prevent contamination of drinking water resources.

Based on the additional information provided, it appears unlikely that the project will significantly impact the Sole Source Aquifer. Therefore, EPA approves of federal financial assistance for this project under provisions of the Safe Drinking Water Act, Section 1424(e).

If you have questions, do not hesitate to contact me at (415) 744-1890.

Sincerely,

Hillary Hecht
Hydrogeologist
Ground Water Office

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

Telephone
808.523.8874
Facsimile
808.523.8950

February 4, 2000

Mr. Robert Smith
US Fish and Wildlife Service
300 Ala Moana Blvd., Room 3-122
Honolulu, HI 96850

Dear Mr. Smith:

Early coordination is requested from the US Fish and Wildlife Service (USFWS) regarding an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access for the public along the historic former OR & L railroad as required in the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed. An appropriate Best Management Plan will be incorporated for construction practices in accordance with the Department of Health (DOH) 401 Water Quality Certification.

Actions relevant to the USFWS, among others, include a review of threatened and endangered species. The project area is being surveyed and potential impacts and mitigation measures are currently being address by Mr. Eric Gunther of AECOS Inc. The impacts and proposed mitigation measures will be described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

If you have any comments or questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl B. Bromwell

Karl Bromwell
Project Manager
Attachments: Figure 1

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

In Reply Refer To: JJS

APR 14 1999

Pericles Manthos
Hawaii Department of Transportation
869 Punchbowl Street
Honolulu, HI 96813-5097

Re: Pre-Environmental Assessment (EA) Scoping Comments for Bike Path Construction Along Oahu Railway and Land Company Right of Way (OR&L ROW), Oahu.

Dear Mr. Manthos:

The U.S. Fish and Wildlife Service (Service) has received your letter dated March 5, 1999, requesting general comments to assist in the preparation of an EA for the construction of a bike path along the OR&L ROW. The Service understands that the bike path will be eight to ten feet wide and will be constructed of concrete asphalt with two-foot graded shoulders. The edge of the bike path will be situated approximately thirteen feet from the centerline of the railroad tracks.

Comments

The Service suggests that a botanical survey be conducted in areas where brush will be cleared for bike path construction. Although the Ewa Plain is heavily impact by alien vegetation, there have been recent finds of rare, native species in the vicinity of the project site such as the discovery of a population of the endangered plant, *Abutilon menziesii*, in an abandoned sugar cane field.

The provided map does not include sufficient detail to enable the Service to provided site-specific comments on potential impacts to wetlands. However, the EA must clearly indicate if the proposed bike path construction will encroach upon habitats such streams, depressional wetlands, and/or anchialine pools. The EA should also clearly indicate how potential impacts to these habitats will be minimized or mitigated.

The Service appreciates your interest in protecting threatened and endangered species and in minimizing project-related impacts to fish and wildlife resources. If you have questions or comments, please contact Fish and Wildlife Biologist John Schmerfeld by telephone at (808) 541-3441 or by facsimile transmission at (808) 541-3470.

Sincerely,

Barbara A. Maxfield, Acting

for Robert P. Smith
Pacific Islands Manager

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

Telephone
808.523.8874

Facsimile
808.523.8950

February 22, 2000

Office of Hawaiian Affairs
711 Kapiolani Blvd. Suite 500
Honolulu, HI. 96813

Early coordination is requested from the Office of Hawaiian Affairs (OHA) regarding an Environmental Assessment (EA) prepared by the State Department of Transportation (DOT) and Earth Tech Inc. (Earth Tech) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR & L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access for the public along the historic former OR & L railroad as required in the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20 feet from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed. An appropriate Best Management Plan will be incorporated for construction practices in accordance with the Department of Health (DOH) 401 Water Quality Certification.

Actions relevant to OHA, among others, for this project include historic preservation clearance. The project area is being surveyed, and potential impacts and mitigation measures are currently being addressed by Mr. Thomas Dye, of International Archeological Research Institute, Inc. The sites, impacts and proposed mitigation measures will be described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

If you have any comments or questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl Bromwell

Karl Bromwell, M.P.H.
Project Manager
Attachments: Figure 1

PHONE (808) 594-1888

FAX (808) 594-1865

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

May 12, 2000

Mr. Karl B. Bromwell
Earth Tech, Inc.
700 Bishop Street, Suite 900
Honolulu, HI 96813

EIS# 392

Subject: Draft Environmental Assessment for Leeward Bikeway, Districts of Ewa and Waianae, Oahu
Project No.s STP-0300(55) and STP-0300(56)

Dear Mr. Bromwell,

Thank you for the opportunity to review and comment on the above-referenced draft. The proposed project includes construction of bridges, retaining walls, railroad crossings and culverts. The need to construct the Leeward Bikeway stems from a requirement in the transfer of the deed of the former Oahu Railroad and Land Company railroad from the Federal DOT to the State DOT-HD.

At this time, the Office of Hawaiian Affairs has no immediate concerns on this project. The mitigation plans presented are standard and acceptable. If you have questions, please contact Ken R. Salva Cruz, Policy Analyst, at 594-1847.

Sincerely,

Colin C. Kippen, Jr.
Deputy Administrator

cc: Board of Trustees
State DOT-HD
OEQC

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

August 10, 2000

Colin C. Kippen, Jr
Deputy Administrator.
State of Hawaii
Office of Hawaiian Affairs
711 Kapi'olani Boulevard, Suite 500
Honolulu, HI 96813

Attn: Ken R. Salva Cruz

Subject: **Draft Environmental Assessment, Leeward Bikeway, OR&L Railway Right of Way, Ewa and Waianae Districts, Oahu Project No.s STP-0300(55) and STP-0300(56)**

Dear Reviewer:

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. We appreciate your efforts in reviewing the document. If any questions or concerns arise during the completion of the final EA or during the execution of the project, Mr. Ken R. Salva Cruz will be contacted as requested.

If you have any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 523-8874.

Telephone
808.523.8874
Facsimile
808.523.8950

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager

April 6, 2000

Hawaiian Railway Society
PO Box 60369, Ewa Station
Ewa, HI 96706

Dear Reviewer:

The State Department of Transportation (DOT) has contracted Earth Tech Inc. (Earth Tech) to conduct an Environmental Assessment (EA) for the construction of the Leeward Bikeway Project. The proposed project is to be constructed in the easement of the former Oahu Railway & Land (OR&L) railroad from Lualualei Naval Road to the west end of the West Lock Bikeway, and then from the east end of the West Lock Bikeway to Waipio Point Access Road (Figure 1). Portions of the former OR & L railroad have been placed on the National Historic Register.

The purpose of this project is to provide access to the public along the historic former OR & L railroad as required by the deed transfer from the Federal DOT to the State DOT. The easement of the former railroad is 20-foot from the center (on either side) of the former tracks. The bikeway will be constructed in this easement on the mauka side in some areas, and the makai side in others. Construction of the new bikeway will include a 10-foot wide asphalt concrete pavement bikepath with 2-foot graded shoulders. Bridges, retaining walls, railroad crossings, culverts and other drainage features will also be constructed.

Telephone
808.523.8874
Facsimile
808.523.8020

Permits that may be required for this project include a US Army Corps of Engineers (USACE) Section 404 Permit; a Department of Health (DOH) Section 401 Water Quality Certification; State Coastal Zone Management Program (CZMP) Consistency Determination; State Stream Channel Alteration Permit (SCAP); National Pollutant Discharge Elimination System (NPDES) Construction Dewatering Permit; Conservation District Use Application (CDUA) and State Historic Preservation Clearance. The impacts and proposed mitigation measures are described in the Draft EA. A finding of no significant impact (FONSI) is anticipated for this project.

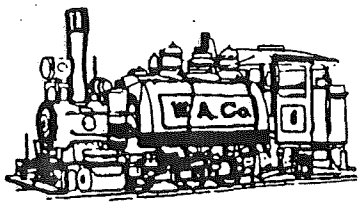
An informational meeting can be arranged if there is sufficient public interest. At the meeting, the public can have an opportunity to ask questions or address concerns to the DOT/Earth Tech. The time period for such a meeting would be while the Final EA is being drafted, prior to submittal to the Office of Environmental Quality Control (OEQC). The notice of submittal of the Draft EA will be placed in the semi-monthly OEQC bulletin, and placed for review at the Pearl City Regional Library and the Hawaii Documents Center, Hawaii State Library.

If you have interest in an informational meeting or any immediate questions please contact Karl Bromwell, the Earth Tech Project Manager, at 523-8874.

Sincerely,

Karl Bromwell

Karl Bromwell, M.P.H.
Project Manager
Attachments: Figure 1



Hawaiian Railway

5-26-2000

Earth Tech
700 Bishop Street
Suite 900
Honolulu, HI 96813
Attn: Karl Bromwell

Dear Sir:

Enclosed please find our comments on the Leeward Bikeway Environmental Assessment. We are pleased to see this project progressing and look forward to the OR&L Right of Way given more attention. We have enclosed our map of bridges and crossings for your use.

Questions on these comments may be answered by Ben Schlapak at 838 8821.

Sincerely yours

Robert Yatchmenoff
President

HAWAIIAN RAILWAY SOCIETY
A Chapter of the National Railway Historical Society
P. O. Box 60369 • Ewa Station, Ewa Beach, Hawaii 96706 • Ph: (808) 681-5461 • Fax: (808) 681-4860

Comments on Leeward Bikeway EA

General: We concur with the treatment of the impacts discussed and the conclusion of a finding of no significant enviromental impact.

Page 9 - stream crossing number three should be at the north end of Kahe Point Beach Park.

Page 24 - Table 2-1, duration appears to be 12 months, not 24.

Page ES-2 - What is the AASHTO clearance between a bikepath and a roadway ? Apparently it is about four feet.

Page 17 - The location of barriers is very vague. Why is it necessary to relocate so many utility poles ? Why can't the bikeway just jog around them ?

Figure 3.1 - Define APE. Page 27 defines it later. Existing bikepath at West Loch Park is in the center of the old OR&L right of way. If the railroad is restored as part of the Pearl Harbor Historic Trails Project, the bikeway should be offset. There is a cut where this will involve earthwork. Muliwai needs definition. Is this a local Hawaiian term ?

Page 28 - Kahe Point Power Plant is at Manner's Beach, not Nanakuli. Recommend you change assumed to concluded in the second paragraph.

Page 43 - The Keanaoio muliwai is a situation where beach sand should be moved to allow for drainage and flood control. HRS intends to rebuild Bridge 36 but often the pier foundations are underwater. The muliwai is also a stagnant breeder of mosquitoes. The City and County of Honolulu should clear the mouth of the stream annually and also put a few dollars into the maintenance of Kahe Point Beach Park.

Figure 3.3.1 - Show the previous C&C bikepath in West Loch Park which conflicts with the old railway right of way.

Page 50 - Unregulated dumping is a very serious problem along all of the railroad right of way. The violations of County regulations should be enforced and the area should be cleaned up. HRS has taken many loads of tires, batteries and junk to the County refuse transfer point at Honouliuli but assistance is needed from some government agency.

Figure 3.5.2 - Does not show the actual location of the Barbers Point/Kalaeloa Harbor which will come close to the edge of the railroad right of way when the enlargement is done.

Page 63 - Please Add: For safety reasons the Federal Railway Administration (FRA) requires all trains to blow two long blasts, a short and a long through all unguarded railroad crossings.

Page 74 - Kaloi Gulch is designed to take 2500 cfs with the new railway/bikeway/pipeline bridge. Eventually 7000 cfs is planned for the 100 year storm event. In 1917 there were two small timber

trestle bridges in the vicinity but by the 1940s only a irrigation flume remained. The new bridge reopens the natural drainage way that was Kaloi Gulch. This was a C&C project which is a great improvement.

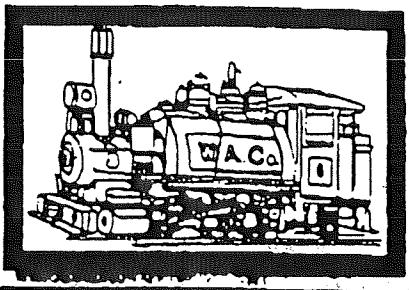
Page 78, 82, 86, 87, 89, 91, 92, 94 - HRS is planning on replacing track and four (not three) bridges between Kahe Point and Nanakuli by 2005.

Attached find our Bridge/Crossing Map from 1996-1997 which shows location and condition on the 1968 USGS Quadrangle.

HRS follows criteria of the American Railway Engineering Association for restoring tracks and bridges and crossings but also takes guidance on historic restoration from the State Historic Preservation Office.

FAX COVER SHEET -- HAWAIIAN RAILWAY

P.O. Box 60369, Ewa Station
Ewa Beach, Hawaii 96706



Oahu's trainride, featuring an educational and entertaining narration about the history of railroading in Hawaii. Come on out [illegible] and take a ride o[illegible]ong train!

DATE: 6-7-00

TO: NICOLE GRIFFIN

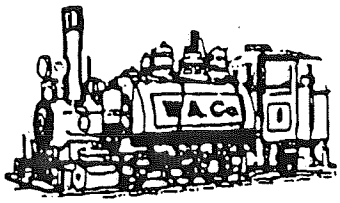
AT FAX: 523-8952

Number of pages including cover: 3

FROM: BOB YATCHMENOFF

At Fax: (808) 681-4860 and Phone (808) 681-5461

REMARKS:



Hawaiian Railway

Date: June 06, 2000
To: DOT-HD
Parsh Tech
OHQC
State Historic Preservation Division

Re: Leeward Bikeway Environmental Assessment

Dear Sir or Madam,

The Hawaiian Railway Society has reviewed the environmental assessment for the Leeward Bikeway and has not indicated concern for environmental issues. However, there are three issues that may have long-term and possibly cumulative adverse impacts to restoration activities along the historic and non-historic railroad right of way.

1 It is understood that in the West Loch area, the DOT is planning to allow another pipeline to be put in the makai most area of the energy corridor, this location would place the proposed pipeline under the railroad right of way. If the DOT bikeway is put in and a pipeline in that area, no room will be available for restoring the railroad in that area. The railroad requires grading and ballast as well as rails to support the load of the train. This could not go over a pipeline, as it would not allow easy access to the pipeline for maintenance or repair.

Solution: Place the pipeline under the bikeway location to allow space for the railroad restoration.

2 The Hawaiian Railway Society has previously (1996) asked the DOT to work with it in restoring the railroad while completing the bikeway under ISTEA funding. The DOT however, already has other funding in place and as a result is completing their bikeway. The Hawaiian Railway Society will complete the restoration of the railroad with their own funding sources. This means that for every water and gulch crossing, there will be two seperate bridges of two different construction methods. This may or may not impact the enviroment, but it will have an adverse visual impact, deterring from the sight of the historic railroad. Historically, from Nanakuli to Ewa, (which is on the Historic Register), the railroad was not double tracked. Construction will also be difficult since the right of way is narrow.

Solution: Efforts should still be made to work cooperatively and concurrently with Hawaiian Railway Society to produce one bridge crossings, as seen at Kaloi Gulch. The DOT could:

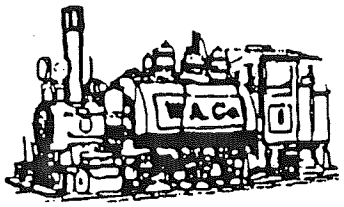
a.) Work currently with Hawaiian Railway Society to produce one-bridge crossings or:

b.) If the DOT can not work their project concurrently with the Hawaiian Railway Society, efforts should be made to make the bridges compatible with Hawaiian Railway Society restoration efforts so that essentially, one-bridge crossings will still be the end product.

HAWAIIAN RAILWAY SOCIETY

A Chapter of the National Railway Historical Society

P. O. Box 60369 • Ewa Station, Ewa Beach, Hawaii 96706 • Ph: (808) 681-5461 • Fax: (808) 681-4860



Hawaiian Railway

3. We would also like to restate concern on one of our earlier comments. After the bikeway is built, who will maintain it? Who will address the constant illegal dumping and litter?

We hope there matters can be addressed prior to the initiation of the project.

Sincerely,

for Robert Yatchmenoff

Robert Yatchmenoff
President

HAWAIIAN RAILWAY SOCIETY

A Chapter of the National Railway Historical Society

P O. Box 60369 • Ewa Station, Ewa Beach, Hawaii 96706 • Ph: (808) 681-5461 • Fax: (808) 681-4860

-00 Bishop Street, Suite 900, Honolulu, Hawaii 96813

August 10, 2000

Robert Yatchmenoff
President
Hawaiian Railway Society
PO Box 60369
Ewa Station, Ewa Beach, HI 96706

Subject: **Draft Environmental Assessment, Leeward Bikeway, OR&L Railway Right of Way, Ewa and Waianae Districts, Oahu Project No.s STP-0300(55) and STP-0300(56)**

Dear Reviewer:

Telephone
808.523.8874
Facsimile
808.523.8950

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. The final EA (FEA) has been amended to reflect your comments where appropriate. We appreciate your efforts in reviewing the document and provide the following response to your comments (presented in **bold**):

Page 9 – stream crossing number three should be at the north end of Kahe Point Beach Park. Comment added.

Page 24 – Table 2-1, duration appears to be 12 months, not 24. Comment added-duration changed to 12 months.

Page ES-2 – What is the AASHTO clearance between a bikepath and a roadway? Apparently it is about 4 feet. The clearance is five feet.

Page 17 – The location of the barriers is very vague. Why is it necessary to relocate so many utility poles? Why can't the bikeway just jog around them? The utilities will be located on one side of the new right-of-way to provide a clearance distance between the active railroad and the bikepath. Where a barrier is used, it will be placed 6-8 feet from the center of the railroad alignment, between the bikepath and the railroad. Barrier use is anticipated in areas adjacent to small property owners.

Figure 3.1 – Define APE. Page 27 defines it later. Existing bikepath at West Loch Park is in the center of the old OR&L right-of-way. If the railroad is restored as part of the Pearl Harbor Historic Trails Project, the bikeway should be offset. There is a cut where this will involve earthwork. Muliwai needs definition. Is this a local Hawaiian term? APE is defined first on page 27, and Figure 3.1 follows that on page 31. The portion of the former railroad in the West Loch Park area, is owned by the City and County of Honolulu. The matter of the existing bikepath placement over the former tracks needs to be addressed by the City and County of Honolulu. Muliwai is a Hawaiian term generally describing a natural wetland-type feature produced at stream mouths where beach sand blocks water draining from the stream and creates a small pond. It is further discussed in the Biological Resources Survey in Appendix B, page 27.

Page 28 - Kahe Power Plant is at Manner's Beach, not Nanakuli. Recommend you change assumed to concluded in the second paragraph. Changes made as requested.

Page 43 – The Keanaoio muliwai is a situation where beach sand should be moved to allow for drainage and flood control. HRS intends to rebuild bridge 36 but often the pier foundations are underwater. The muliwai is also a stagnant breeder of mosquitoes. The City and County of Honolulu should clear the mouth of the stream annually and put a few dollars into the maintenance of Kahe Point Beach Park. The muliwai is a natural wetland-type feature that would need to be evaluated under several regulations and permits before any type of construction could be performed. Some of the regulations and permits may include, but not be limited to the following: US Army Corps of Engineers (COE) Department of the Army (DA) permit, and Section 404 Permit, the Department of Health (DOH) Section 401 Water Quality Certification (WQC), the State Coastal Zone Management Program (CZMP) Consistency Determination, State Stream Channel Alteration (SCA) permit, Special Management Area (SMA) Use Permit, Conservation district Use Application (CDUA), Shoreline Setback Variance (SSV), and State Historic Preservation Clearance. Thank you for your comment regarding maintenance at Kahe Point Beach Park.

Figure 3.3.1 – Show the previous C&C bikepath in West Loch Park which conflicts with the old railroad right-of-way. This bikeway is not part of the proposed project area. Concerns regarding improper placement of the existing bikeway need to be addressed with the City and County of Honolulu.

Page 50 – Unregulated dumping is a very serious problem along all of the railroad right-of-way. The violations of County regulations should be enforced and the area should be cleaned up. HRS has taken many loads of tires, batteries and junk to the County refuse point at Honouliuli but assistance is needed from some government agency. With the development of the proposed Leeward Bikeway, the DOT maintenance Department will routinely maintain the route by cutting grass and removing trash within the 40-foot r-o-w. Additionally, in it's current state, access is obtained along the pipeline maintenance road, by those who dump illegally. With the proposed bikeway improvements, access will be restricted to vehicles (outside of emergency and maintenance crews), maintenance will be performed, hours of access will be restricted and additional bicycle police patrols will be requested.

Figure 3.5.2 – Does not show the actual location of the Barbers Point/Kalaeloa Harbor which will come close to the edge of the railroad right-of-way when the enlargement is done. The maps utilized to create this figure were the US Geological Survey (USGS) 7.5 minute series quadrangles for Ewa, Waipahu and Waianae. They were utilized because of their accuracy with respect to the location of the right-of-way, topography and location of major geographical features (i.e., mountains, streams, gulches). These maps were last revised from aerial photographs in 1978, with limited field checks in 1982 and a final editing in 1983. As a result, they do not show recent or future development in the Ewa area. Private property features were not depicted on the figures due to difficulty in accurately representing the legal boundaries, the scale of the map and number of private properties. Additionally, the purpose of this map is to show the readers the flood zone determinations generated by the Federal Emergency Management Agency (FEMA) in the vicinity of the proposed project. Any changes (like harbor creation or enlargement) will require re-evaluation by FEMA after the action is completed.

Page 63 – Please Add: For safety reasons, the Federal Railway Administration (FRA) requires all trains to blow two long blasts, a short and a long through all unguarded railroad crossings. Comment has been added as requested.

Page 74 – Kaloi Gulch is designed to take 2500 cfs with the new railway/bikeway/pipeline bridge. Eventually 7000 cfs is planned for the 100 year storm event. In 1971 there were two small timber trestle bridges in the vicinity but by the late 1940s only an irrigation flume remained. The new

bridge reopens the natural drainway that was Kaloi Gulch. This was a C&C project which is a great improvement. Thank you for your comment.

Page 78, 82, 86, 87, 91, 92, 94 – HRS is planning on replacing track and four (not three) bridges between Kahe Point and Nanakuli by the year 2005. Comments have been added as requested.

It is understood in the West Loch area, the DOT is planning to allow another pipeline to be put in the makai most area of the energy corridor, this location would place the proposed pipeline under the railroad right-of-way. If the DOT bikeway is put in and another bikeway is put in and another pipeline is put in, no room will be available for restoring the railroad in that area. The railroad requires grading, ballast and rails to support the load of the train. This could not go over the pipeline, as it would not allow ease access to the pipeline for maintenance and repair.

Solution:
Place the pipeline under the bikeway location to allow space for the railroad restoration.

The Department of Transportation (DOT) Highways Division (HD) proposed Leeward Bikeway project is placed to allow for room of future railroad expansion. The proposed alignment is already over gas lines in the energy corridor area. The energy corridor project involving the placement of a HECO pipeline is a DOT-Harbors (DOT-HAR) project. This division would need to be contacted regarding this concern.

The Hawaiian Railway Society has previously (1966) asked the DOT to work with it in restoring the railroad while completing the bikeway under ISTEA funding. The DOT however, already has other funding in place and as a result is completing their bikeway. The Hawaiian Railway Society will complete the restoration of the railroad with their own funding sources. This means that for every water and gulch crossing there will be two separate bridges of two different construction methods. This may or may not impact the environment, but it will have an adverse visual impact, deterring from the sight of the historic railroad. Historically, from Nanakuli to Ewa, (which is on the Historic Register), the railroad was not double-tracked. Construction will also be difficult since the right-of-way is narrow.

Solution:

1.) Efforts should still be made to work cooperatively and concurrently with the Hawaiian Railway Society to produce one-bridge crossings or:

2.) If the DOT can not work their project concurrently with the Hawaiian Railway Society, efforts should be made to make the bridges compatible with Hawaiian Railway Society restoration efforts so that essentially, one-bridge crossings will still be the end product.

It should be noted that DOT-HD must complete the project as it was funded and as described in the scope of work by the legislature. The project scope of work only outlines a bikeway. Therefore, the project does not include funding for expanding the railroad, and cannot be used for that purpose. Bridge crossings will be designed to allow room for expansion of the railroad along its current alignment.

We would also like to restate concern on one of our earlier comments. After the bikeway is built, who will maintain it? Who will address the constant illegal dumping and litter? This comment, is

also addressed above; maintenance by the DOT will be performed and access will be restricted to the bikeway at night and to unauthorized vehicles.

If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 808-523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager

BENJAMIN J. CAYETANO
GOVERNOR

GENEVIEVE SALMONSON
DIRECTOR

STATE OF HAWAII
OFFICE OF ENVIRONMENTAL QUALITY CONTROL
236 SOUTH BERETANIA STREET
SUITE 702
HONOLULU, HAWAII 96813
TELEPHONE (808) 586-4185
FACSIMILE (808) 586-4186

Nicole or Karl 523-8950

May 9, 2000

Kazu Hayashida, Director
Department of Transportation
Highways Division
869 Punchbowl St.
Honolulu, HI 96813

Attn: Ken Tatsuguchi or Jonathan Winn

Dear Mr. Hayashida:

Subject: Draft Environmental Assessment (EA) for Leeward Bikeway OR & L Easement, Waipio to Nanakuli, Oahu

In general we are supportive of this project because it adheres to state policy (HRS Chapters 26, 226, 264, 344) which requires promotion of alternative forms of transportation systems that reduce reliance on the private automobile, conserves energy, decreases pollution and provides safe accommodation for their users. We have, however, the following comments to offer:

1. EA distribution: In addition to your current distribution list, please also send copies as soon as possible to the Waipahu, Ewa Beach and Waianae Libraries; and to the City & County and State Departments of Parks & Recreation.

2. Section 4(f) review: Has this review been completed? If not, what is the anticipated date of filing or review completion?

3. Archeological/historical consultation: Document your contacts and include copies of your correspondence with the State Historic Preservation Division of DLNR in the final EA.

4. Drainage: Section 3.15.1, *Surface Water*, notes that existing culverts will be maintained during bikeway development. Do you expect to install any new

culverts? What mitigation measures are planned to reduce impacts from flooding in low lying areas?

5. Proximity to shoreline: How close to the shoreline will the bikeway be? In the final EA indicate those sections that are closest to the shoreline and give their respective distances. Also indicate the distance of the most mauka portion.

6. Recreational uses: Development of this corridor will likely open up adjoining areas to increased recreational uses. How will adjacent wetlands and other sensitive habitats be protected from degradation from the additional "people traffic?" Include a discussion of this in the final EA.

7. Visual impacts:

   a. Describe the visual impacts from relocation of the utility poles.

   b. Section 2.2, *Proposed Action*, describes two of the proposed retaining walls as ranging from 3.5 feet to 8.0 feet in average heights and having lengths of 380 feet and 1090 feet. In the final EA include a discussion of the material to be used and the final visual appearance to path users, motorists and train passengers. If possible include a photo or drawing in the final EA.

8. Glassphalt: Has this material been considered for the base course aggregate?

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

Sincerely,

GENEVIEVE SALMONSON
Director

c: Earth Tech

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

August 10, 2000

Genevieve Salmonson
Director
Office of Environmental Quality Control
235 South Beretania Street, Suite 702
Honolulu, HI 96813

Attn: Nancy Heinrich

Subject: **Draft Environmental Assessment, Leeward Bikeway, OR&L Railway Right of Way, Ewa and Waianae Districts, Oahu Project No.s STP-0300(55) and STP-0300(56)**

Dear Reviewer:

Telephone
808.525.8874
Facsimile
808.525.8950

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. The final EA (FEA) has been amended to reflect your comments where appropriate. We appreciate your efforts in reviewing the document and provide the following response to your comments (presented in **bold**):

EA Distribution: In addition to your current distribution list, please also send copies as soon as possible to the Waipahu, Ewa Beach and Waianae Libraries; and to the City and County and State Departments of Parks and Recreation. DEAs were sent as requested.

Section 4(f) review: Has this been completed? If not, what is the anticipated date of filing or review completion? Federal Highways Administration (FHWA) has indicated that there is not a need to complete a Section 4(f) review. The State of Hawaii Department of Transportation – Highways Division (DOT-HD) is currently seeking documentation regarding this matter.

Archaeological /historical consultation: Document your contacts and include copies of your correspondence with the State Historic Preservation Division of DLNR in the final EA. The communications with Ms. Sara Collins of the State Historic Preservation Division (SHPD) have been documented in Section 7.0, References. Any correspondence received from the SHPD will be included Appendix D, Correspondence.

Drainage: Section 3.15.1 Surface Water, notes that existing culverts will be maintained during bikeway development. Do you expect to install any new culverts? What mitigation measures are planned to reduce impacts from flooding in low lying areas? At this time, the proposed bikeway is in it's design phase, and more information is forthcoming. However, where existing drainage is blocked by the proposed bikeway, culverts will be used to alleviate it. Currently, no drainage problems are expected to result from the project; streams and gulches will be spanned with new bridges. Improving adjacent drainage conditions is being reviewed on a case by case basis during the design phase of the project. Improvements will be made where they fit the deign of the proposed bikeway and allowed funding.

Proximity to shoreline: How close to the shoreline will the bikeway be? In the final EA indicate those sections that are closest to the shoreline and give their respective distances. Also indicate the most mauka portion. The proximity to the shoreline and mauka most location was added to Section 3.5 and 3.15.

Recreational uses: Development of this corridor will likely open up to adjoining areas to increased recreational uses. How will adjacent wetlands and other sensitive habitats be protected

from degradation from additional "people traffic". Include a discussion of this in the final EA. To reduce movement off of the proposed bikeway, appropriate signage and markings will be used to direct path users. The following relevant comments have been added to the FEA in Sections 3.16 and 4.13 (Security and Maintenance).

> *Place signage at the entrances and along the bikeway to identify the route and establish a Code of Conduct. This will include the following rules placed on signs at entrance points to the bikeway and along the bikeway:*
> *-Stay on the trail in continuous movement.*
> *-Respect rights of all trail users as well as adjacent homeowners and properties.*
> *-Ride single file keeping to the right of the trail.*
> *-Give warning before passing other trail users.*
> *-Only leashed pets are welcomed, you must clean up after your pet.*
> *-Unauthorized vehicles are prohibited.*
> *-Use of radios is prohibited.*
> *-Trail Hours are from dawn to dusk.*
> *-No dumping, littering or loitering. Please use trash receptacles.*
> *-Do not take or harm any plants or animals; areas outside the trail may contain sensitive plants and animals.*
> *-Use bikeway at your own risk.*
> *-Warning: golf course ahead.*

Visual impacts: Describe the visual impacts from relocation of utility poles. Section 2.2 Proposed Action, describes two of the proposed retaining walls...In the final EA include a discussion of the material to be used and the final visual appearance to path users, motorists and train passengers. If possible include a photo or drawing in the final EA. Movement of the utility poles will be to one side of the r-o-w. Currently, utility poles are present on both sides of the r-o-w; movement to one side will be a visual improvement. For neighboring properties, they will essentially maintain the same visual impact or improve the view that they now have. At this time, the proposed bikeway is in it's design phase, and completion of the proposed retaining walls has not yet occurred. It is anticipated that the smaller retaining wall would have a concrete appearance, while the larger wall may be faced with a veneer rock, to give it a natural appearance.

Glassphalt: Has this material been considered for the base course aggregate? The use of glassphalt will be considered for the base course material. The final selection of the materials has yet to be completed.

If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 808-523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager

University of Hawai'i at Mānoa

Environmental Center
A Unit of Water Resources Research Center
2550 Campus Road • Crawford 317 • Honolulu, Hawai'i 96822
Telephone: (808) 956-7361 • Facsimile: (808) 956-3980

June 7, 2000
EA: 00198

Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, Hawaii 96813
Attn: Ken Tatsuguchi and Jonathan Winn

Dear Mr. Tatsuguchi and Mr. Winn:

Leeward Bikeway OR&L Railway Easement
Draft Environmental Assessment
Ewa and Waianae, Oahu

The State Department of Transportation, Highways Division (DOT-HD) proposes to construct a bikepath from Waipio Point Access Road to Luahualei Naval Road, along a portion of the former Oahu Railroad and Land Company (OR&L) right of way. The purpose of this project is to provide a venue for pedestrian/cycling activities, to provide access to the historic OR&L railroad and recreational sites, and to fulfill the requirements of a deed transfer of the OR&L railroad from the Federal DOT to the DOT-HD.

This review was conducted with the assistance of Michael Graves, Anthropology; Khalil Spencer, Geology and Geophysics; James Parrish, Cooperative Fisheries Unit; and Sherri Hiraoka, Environmental Center.

General Comments

The Draft EA was well done and covered most of the topics well. Our reviewers, for example, found the discussion on historic resources and flora and fauna to be appropriate for this project. However, the EA seemed to concentrate on potentially negative impacts of the project and their possible mitigation measures, but we note that there are several potentially positive impacts as a result of this bikeway which can be included in the discussion. One benefit is the addition of a car-free cycling, running, walking, and skating environment. The only other major east-west roadway to Leeward Oahu that is "bikeable" is Farrington Highway. This road is very dangerous due to speeding and the lack of adequate shoulders. The car-free bikepath proposed will offer a safer opportunity for recreational activities, and may in fact encourage additional exercise in the community. Another positive outcome of the project is the potential health benefit that an additional exercise/recreation opportunity provides.

The proposed bikeway will be a welcome addition to the recreational opportunities available in the Ewa and Waianae areas. To ensure that this path is constructed in the best possible manner, we offer some suggestions that the DOT may want to consider when planning this project. Specifically, we wish to point out guidelines which may be helpful in assuring the safety of those who will utilize this facility. Other minor points which were may be further addressed are also brought up in the discussion below.

Proposed Action

The EA should include more complete information on the design of the path itself. Factors to consider when designing the path include safety, aesthetics, and compliance with the American Association of State Highway and Transportation Officials (AASHTO) codes.

A 14-foot wide bikeway was initially considered, but was narrowed to a 10-foot wide path due to space constraints (page ES-1). This narrow a path may create safety issues. The City's Bike Plan advises a 12-foot width for a shared-use path (page B-6), which is what this particular path can expect to be. The path may become congested, dangerous, and unpleasant if joggers, rollerbladers, bicyclists, walkers, and people in wheelchairs are all competing for space on the path. Suggestions for bicycle path design may be located either in the AASHTO Guide, or in the 1998 Federal Highways Administration report "Implementing Bicycle Improvements at the Local Level", specifically Chapter 5 on Trail Networks, which may be found at the website http://www.bikefed.org/local.htm. The AASHTO Guide recommends a 12-foot to 14-foot width for shared use paths. Considering this, our reviewers suggest that the path be at least 12 feet wide wherever possible.

Most of the proposed path seems relatively flat, as indicated by the Approximate Elevation Ranges Across the Proposed Leeward Bikeway (Table 3-4, page 49). The EA, however, does not include estimates of maximum percent slope. Our reviewers suggest that all grades be kept reasonable to encourage new, inexperienced, or out-of-shape cyclists to use the path.

Land Use and Ownership

Some additional right of way (ROW) will be required to provide for maintenance, clearance between the bikeway and the railroad, and for the construction of retaining walls and bridges (page 17). What is the reaction of the current landowners to these acquisitions? What is the expected cost of these ROW purchases? Also, the need for additional ROW was not clear when the existing ROW is 40 feet (page 17), especially considering the fact that the path width was reduced from 14 feet to 10 feet.

Socioeconomics

Social impacts that should be addressed in the EA include increased burglaries to homes adjacent to the path, such as those which occurred near the City's/Navy's Westloch bike path. These problems were eventually resolved. Perhaps the DOT can refer back to this past situation to address this potential impact.

Safety and Health

What is the accessibility of the bicycle path to emergency communications, crews, and vehicles? Will lighting be included as a part of the project?

Transportation

The proposed bikeway will provide an environmentally-friendly transportation alternative to those in the Waianae and Ewa districts. An analysis of the transportation opportunities that may be provided by this bikeway should be included in the EA. A Global Information System study, similar to the that conducted by Helber, Hastert, and Fee in the Honolulu Bike Plan may be useful in demonstrating how the path would connect to schools, businesses, and communities along the route. Potential commuter destinations include schools, Leeward Community College, and the state offices in Kapolei, and should be discussed in further detail. This project also presents the potential for continuing a bikeway further up the Leeward Coast, which would benefit that community as well.

Consultations Made During the Environmental Assessment Process

It may be useful to contact a bicycle club such as the Hawaii Bicycling League (HBL) to include the interests of a large group of potential users of this project. HBL members have been known to be active in the planning processes of bicycle-related projects, and may be a source of information as to the design of the actual path in terms of safety and pure recreational value.

Conclusion

The project itself is one that benefits the community as a recreational resource, as well an alternative travel opportunity. To ensure that this is constructed in the best possible manner, certain areas should be examined in further detail. These areas include securing a bicycle path design that is able to accommodate the volume and types of traffic that will be using it, planning for the prevention of increased criminal activity as a result of easier access to particular areas, and ensuring the safety of those that use the facility. We would also point out the safeguard to endemic plants outlined in the Biological Resource Survey, Appendix B, proeared by Aecos, Inc. should be incorporated into the final plans for the bikeway. We hope that our comments will be helpful in preparing the Final Environmental Assessment. Thank you for the opportunity to comment.

Sincerely,

Peter Rappa
Assistant Environmental Coordinator

cc: Karl Bromwell, Earth Tech, Inc.
OEQC
James Moncur, WRRC
Michael Graves, Anthropology
Khalil Spencer, Geology and Geophysics
James Parrish, Cooperative Fisheries Unit
Sherri Hiraoka, Environmental Center

700 Bishop Street, Sui

August 10, 2000

Peter Rappa
University of Hawaii
Environmental Center
2550 Campus Road, Crawford 317
Honolulu, Hawaii 96822

Subject: **Draft Environmental Assessment, Leeward Bikeway, OR&L Railway Right of Way, Ewa and Waianae Districts, Oahu Project No.s STP-0300(55) and STP-0300(56) University of Hawaii EA:00198**

Telephone
808.523.8874
Facsimile
808.523.8950

Dear Reviewer:

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. The final EA (FEA) has been amended to reflect your comments where appropriate. We appreciate your efforts in reviewing the document and provide the following response to your comments (presented in **bold**):.

Proposed Action.
Comment requests that more complete information on the design of the bikepath itself be included. At this time, the proposed bikeway is in the design phase, and more complete information is forthcoming.

Comment requests that a 12- to 14- foot bikepath be utilized for less congestion, safety and compliance with American Association of State Highway and Transportation Officials (AASHTO) codes. The proposed Leeward Bikeway project shares the right-of-way with the Hawaiian Railway Society (HRS). Plans exist for restoring the operating railroad from Nanakuli to the Waipahu Cultural Gardens not only with HRS, but also with the City and County of Honolulu (C&C, 1997). This comment was added to Section 2.1 and 2.2 for clarification: *The proposed bikeway would share the 40-foot wide* [right-of-way] *r-o-w with the existing and planned track restorations. The track is currently used by the Hawaiian Railway Society to run trains throughout the week and weekend.* Since the r-o-w is shared, the limited space must be utilized by both the railroad and the bikeway. This requires a 10-foot bikepath with 2-foot shoulders to be utilized. The use of 10 feet for the width of the path conforms to the 1999 AASHTO guide for the development of bicycle facilities which states "Under most conditions, a recommended paved width for a two-directional shared use path is 3.0 meters (10 feet). To reduce congestion and safety hazards, appropriate signage and markings will be used to direct path users. The following relevant comments have been added to the FEA in Sections 3.16 and 4.13 (Security and Maintenance).

> *Place signage at the entrances and along the bikeway to identify the route and establish a Code of Conduct. This may include the following rules placed on signs at entrance points to the bikeway and along the bikeway:*
> *-Stay on the trail in continuous movement.*
> *-Respect rights of all trail users as well as adjacent homeowners and properties.*
> *-Ride single file keeping to the right of the trail.*

Comment requests that grades be kept reasonable to encourage new, inexperienced, or out-of-shape cyclists to use the path. During the preparation of the DEA, the surveying portion of the project was being completed, and data was not available. As indicated in the Approximate Elevation Ranges Across the Proposed Leeward Bikeway (Table 3-4), the general topography of the bikeway is flat. Additionally, the staff preparing the DEA completed a field visit to the proposed project site, covering the entire proposed bikeway area on bike. Although the bikeway is not yet in place, extreme nor accentuated grades were not encountered.

Land Use and Ownership.
What is the reaction of current landowners to these (additional right-of-way) acquisitions? Several interested parties requested additional information on the location and amount of additional right-of-way. Since the proposed bikeway is in the design-phase, exact locations and amounts of additional right-of-way have not yet been determined. However, additional right-of-way is not anticipated to exceed 10 feet from the current boundary in some areas. Interested landowners can discuss specifics with Mr. Jonathan Winn of the State of Hawaii Department of Transportation-Highways Division (DOT-HD) at 692-7579.

What is the expected cost of these right-of-way purchases? *The DOT-HD anticipates $5 million* for additional right-of-way acquisition. This information is presented in Section 2.3 Project Schedule and Costs.

The need for additional right-of-way is not clear when the existing right-of-way is 40 feet (page 17), especially considering the fact that the path width was reduced from 14 to 10 feet. The right-of-way is shared with the operating HRS railroad. The operating railroad will be extended up to Nanakuli and out to Waipahu Cultural Gardens. Although the proposed bikeway has been reduced to a 10-foot width to accommodate space within the r-o-w, additional space will be required for maintenance and repair access. This comment was added to Section 2.1 and 2.2 for clarification: *The proposed bikeway would share the 40-foot wide r-o-w with the existing and planned track restorations. The tracks are currently used by the Hawaiian Railway Society to run trains throughout the week and weekend.*

Socioeconomics.
Social impacts that should be addressed in the EA include increased burgleries to homes adjacent to the path, such as those which occurred near the City's/Navy's Westloch bike path. These problems were eventually resolved. Perhaps DOT can refer back to this past situation to address this potential impact. To address security concerns for the proposed bikeway and adjacent properties, several controls will be employed as recommended by the Honolulu Police Department and others. These topics have been added to the FEA in Sections 3.16 and 4.13 (Security and Maintenance).

1.) *Place signage at the entrances and along the bikeway to identify the route and establish a Code of Conduct. This will include the following rules placed on signs at entrance points to the bikeway and along the bikeway:*
-Stay on the trail in continuous movement.
-Respect rights of all trail users as well as adjacent homeowners and properties.
-Ride single file keeping to the right of the trail.
-Give warning before passing other trail users.
-Only leashed pets are welcomed, you must clean up after your pet.

-Unauthorized vehicles are prohibited.
-Use of radios is prohibited.
-Trail Hours are from dawn to dusk.
-No dumping, littering or loitering. Please use trash receptacles.
-Do not take or harm any plants or animals, areas outside the trail may contain sensitive plants and animals.
-Use bikeway at your own risk.
-Warning: golf course ahead.

2.) *With the development of the proposed bikeway, increased bicycle police patrols will be recommended and requested of HPD and the City and County of Honolulu. Currently, there is a temporary bicycle patrol in the Waipahu area, and none in the Ewa and Waianae areas. (This reflects the fact that there is a partial bikeway in the Waipahu area and none in the Ewa and Waianae areas.)*

It should also be noted that the proposed bikeway does not create access that was not already there. The development of the bikeway will be an improvement in restricting access at night, restricting vehicular access and requiring a code of conduct.

Safety and Health.
What is the accessibility of the bicycle path to emergency communications, crews and vehicles? Utility companies within or adjacent to the right-of-way as well as police and fire departments will have access to the bikeway. This statement was added to Section 3.11 Safety and Health of the FEA: *Additionally, for emergencies, police, fire departments and utilities have access to the r-o-w.*
Will lighting be included as part of the project? In order to discourage night-time use of the proposed bikeway, lighting will not be included as part of the project.

Transportation.
An analysis of the transportation opportunities that may be provided by this bikeway should be included in this EA, (i.e., connecting schools, businesses, and communities, as well as commuter destinations such as colleges, and the State offices in Kapolei). The following was added to Section 3.12 Transportation:

Transportation opportunities that may be provided by the implementation of the proposed bikeway include the following:

Waianae Coast: Increased access to portions of Nanakuli and Lualualei Valleys will occur as well as schools, businesses and beach parks present along the coast.

Ewa Plain: Increased access to the Barbers Point Harbor and Marina, Ko Olina Resort, Campbell Industrial Park, The City of Kapolei town center, and State of Hawaii offices, parks and residences.

Waipahu: Increased access to the West Loch coastline, Waipahu town center, parks and residences as well as Waipahu Intermediate, Waipahu High School and bikeway links to Leeward Community College.

Consultations Made During the Environmental Assessment Process.

It may be useful to contact a bicycle club such as Hawaii Bicycle League (HBL) to include the interests of a large group of potential users of this project. As requested by the Office of Environmental Quality Control, the HBL was provided a copy of the DEA.

If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager

DEPARTMENT OF PLANNING AND PERMITTING
CITY AND COUNTY OF HONOLULU
650 SOUTH KING STREET • HONOLULU, HAWAII 96813
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JEREMY HARRIS
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RANDALL K. FUJIKI, AIA
DIRECTOR

LORETTA K.C. CHEE
DEPUTY DIRECTOR

RS 2000/CLOG-3190

July 3, 2000

Mr. Karl B. Bromwell, M.P.H.
Project Manager
Earth Tech, Inc.
700 Bishop Street, Suite 900
Honolulu, Hawaii 96813

Dear Mr. Bromwell:

Draft Environmental Assessment (DEA): Leeward Bikeway,
OR&L Railway Easement, Ewa and Waianae Districts,
Oahu, Tax Map Keys: Various

Thank you for the opportunity to review and comment on Earth Tech's April 2000 Draft Environmental Assessment which was prepared for the State Department of Transportation - Highways Division's (DOT-HD) Leeward Bikeway Project and received by our Department on May 31, 2000.

We support the State DOT-HD's proposal to construct the Leeward Bikeway along the State-owned former OR&L 40-foot right-of-way ("r-o-w") from Waipio Point Access Road in Waipahu to the east end of the West Loch Bikepath and then from the west end of the West Loch Bikepath to Lualualei Naval Road in Nanakuli, Waianae with the following comments and suggestions:

From the Land Use Permits Division (LUPD):

SECTION 1.3 Required Permits.

We confirm that a major Special Management Area (SMA) Use Permit and Shoreline Setback Variance (SV) will be required for the development of the bikeway along the Pearl Harbor and Nanakuli to Kahe Point segments. As a "public use" pursuant to the Land Use Ordinance (LUO), no other land use approvals will be required.

However, please note that if this EA is to be used as the primary document in applications for the SMA and SV permits, it will need to be significantly expanded as follows:

General Information.

SMA Boundaries - The Final EA should describe precisely which portions of the bikeway project will be located within the SMA and which portions will be located within the 40-foot shoreline setback. Exhibits which illustrate the SMA boundaries and shoreline relative to the proposed bikeway should be included. The bikeway alignment should also be illustrated against existing tax map key boundaries and an additional discussion should be included on properties adjacent to the proposed project.

SECTION 2.2 Proposed Action.

This section should clarify that the existing segment of the bikeway, between Waipio Point Access Road and Waipahu Street, was constructed as a *temporary* bikepath by the City's Department of Public Works (DPW) via Minor Special Management Area Use Permit (File No. 98/SMA-045), issued on June 26, 1998. This 0.8 mile segment of the bikeway, designated by DPW as Bike Path Extension II, consists of a 10-foot wide asphaltic concrete (AC) pavement 1.5 inches thick, and did not include any associated improvements such as lighting, interpretative/historic signage, landscaping or security fencing.

The description of construction activities must be expanded. The Final EA must describe the construction details required within areas located within the SMA and shoreline setback, including estimates of the amounts of grubbing, grading and fill required with those areas. Construction details on the demolition and construction of the Waikele and Kapakahi Stream bridges, as well as the construction of the Pili O Kahe, Keoneoio, and Kahe Point Beach Park gulch crossings must be disclosed. Similarly, details on the construction of the proposed retaining walls at Nanakuli Stream and Limaloa Gulch should be provided. Exhibits which illustrate these improvements should also be included in the Final EA.

Certified Shoreline Survey - Because a shoreline setback variance (SV) will be required for the development of the bikeway in the Pearl Harbor Shore area, a certified shoreline survey will be required when submitting the SV application.

Use characteristics - A section should be added detailing the use characteristics of the complete bikeway. Details such as hours of operation, lighting, security concerns, including ones relative to bikepath users as well as for adjacent property owners, periodic access by service vehicles in certain locations, should be discussed.

SECTION 4 ENVIRONMENTAL CONSEQUENCES.

4.2.2. Avifauna and Mammals - This section should be expanded to describe possible impacts of bike and pedestrian traffic on the avifauna resources, primarily in the Pearl Harbor Shore portions of the bikeway. This section should specifically discuss possible disruption of migratory bird feeding and nesting patterns which may result from night lighting, increased vandalism and general increases in human exposure on areas which currently enjoy limited human exposure.

4.4 Flora and Wetlands - The Final EA should clarify whether additional landscaping along the 40-foot railroad right-of-way is proposed.

4.7 Noise - This section should more thoroughly discuss the potential long-term noise impacts of users of the bikeway may have on migratory birds which utilize the Pearl Harbor Shore Segment of the project area, as well as associated noise impacts to property owners along the bikeway (eg., lower Waipahu area).

4.11 Visual - Elevation drawings/simulations should be provided which illustrate how proposed bikeway improvements will not negatively impact the project area. This section should clarify if additional landscaping is planned, as opposed to the revegetation of areas that are cleared and grubbed during construction.

4.12 Water Resources - The discussion of permanent erosion control and drainage impacts of the project must be expanded. This section should discuss actual drainage improvements or mitigation measures proposed to manage flood runoff, particularly in the low lying Pearl Harbor Shore area (eg., retention swales, basins or sediment traps, etc.).

4.13 Conflict with Federal, State, and Local Land Use Plans, Policies and Controls for the Area Concerned - This section must be expanded to include separate subsections which discuss how the development of the Bikeway conforms with the policies and objectives of the Coastal Zone Management Act (Section 205A-2, HRS), and the Special Management Area guidelines (Section 25.3.2, ROH); as well as meet the criteria for granting a variance pursuant to the Shoreline Setback Ordinance, Chapter 23, ROH. We suggest that the heading for this section be titled as "Compliance with ...," rather than "Conflict with...."

From the Long Range Planning Division (LRPD)

1. **Background of the Pearl Harbor Historic Trail (PHHT Project)**

   Belt Collins was hired by the Department of Planning and Permitting ("DPP") to prepare the master plan and phased implementation plan ("the plan") for the Aiea-Pearl City Vision Teams championed PHHT Project. The PHHT was envisioned to link numerous points of interest and activity centers along the former Oahu Railway and Land (OR&L) r-o-w with a 18.5 mile trail and rail system between the U.S.S. Arizona Memorial at Pearl Harbor and Lualualei Naval Road in Nanakuli (proposed project map attached). The State DOT's proposed 14 mile Leeward Bikeway project is included in the PHHT's proposed alignment.

   The PHHT plan will recommend infrastructure improvements and other actions for redevelopment of the r-o-w with a multi-modal ("shared use") pathway to accommodate the historic train operation, bicyclists, joggers, walkers ("pedestrians") and other uses. The final master plan is scheduled for completion in the latter part of 2000.

   Thank you for coordinating your project plans and schedule with Sue Sakai and Lisa Reinke at Belt Collins (at 521-5361).

2. We recommend the State DOT reconsider its preliminary bikeway design and **increase** the proposed "10-foot wide bikeway with two-foot graded shoulders" to 12-feet to conform to the recently revised 1999 American Association of State Highway and Transportation Officials (AASHTO) recommended guidelines for the development of bicycle facilities. Our consultants at Belt Collins informed us that the increased width will be consistent with the guidelines supported by the Mayor's Advisory Committee on Bicycling, the Hawaii Bicycling League and the University of Hawaii Bicycling Advisory Committee and their Environmental Center.

   We suggest the following option to DOT for increasing the width of their proposed shared-use pathway: That they explore and seek a favorable ruling/interpretation by the State Historic Preservation Division on what (either the railroad tracks or OR&L ROW) is listed on the National Register of Historic Places that would allow moving the railroad tracks to accommodate the wider shared use path.

3. The FEA should include a map of the proposed path alignment, which reflects the land acquisition parcels, to supplement the descriptive narrative. Although we recommend a 12 feet width for as much of the path as possible, it would be helpful if the leeward bikeway map identifies where the path would be 12 feet wide and where it will be constrained to 10 feet.

4. The FEA should include a short discussion (in Section 4.13), of how this project relates to the General Plan of the City and County of Honolulu, 1992 Edition, specifically Policy 1.c. Bikeways ("for recreational activities ...") of Objective A of the Transportation and Utilities Chapter (V).

5 We offer the following specific comments/corrections to the draft:

a. Page 4, Section 1.3.7: The Department of Planning and Permitting vice Department of Land Utilization (DLU was merged into DPP).

b. Page 37, Section 3.3, First paragraph: enclosures vice inclosures.

c. Page 49, Table 3-3: mean **sea** vice seal level.

d. Page 102, Section 6: Department of Planning and Permitting (delete DLU). Since the Department of Public Works was merged into several departments in the City's recent reorganization, please call DOT's former DPW contacts for the name(s) of their new Departments.

e. Pages 95 (Section 4.13) and 103: the January 2000 Waianae *Sustainable* Communities Plan was **approved** as Ordinance 00-14, Bill 70 (1999), CD2 on May 10, 2000 (to be effective July 9, 2000). The former Waianae Development Plan Special Provisions and Maps (Land Use and Public Facilities Maps) are repealed but "shall remain in force and effective until such time as the Public Infrastructure Map for Waianae is adopted..."

f. Appendix page for Photo documentaries: Should be Appendix **D** vice E.

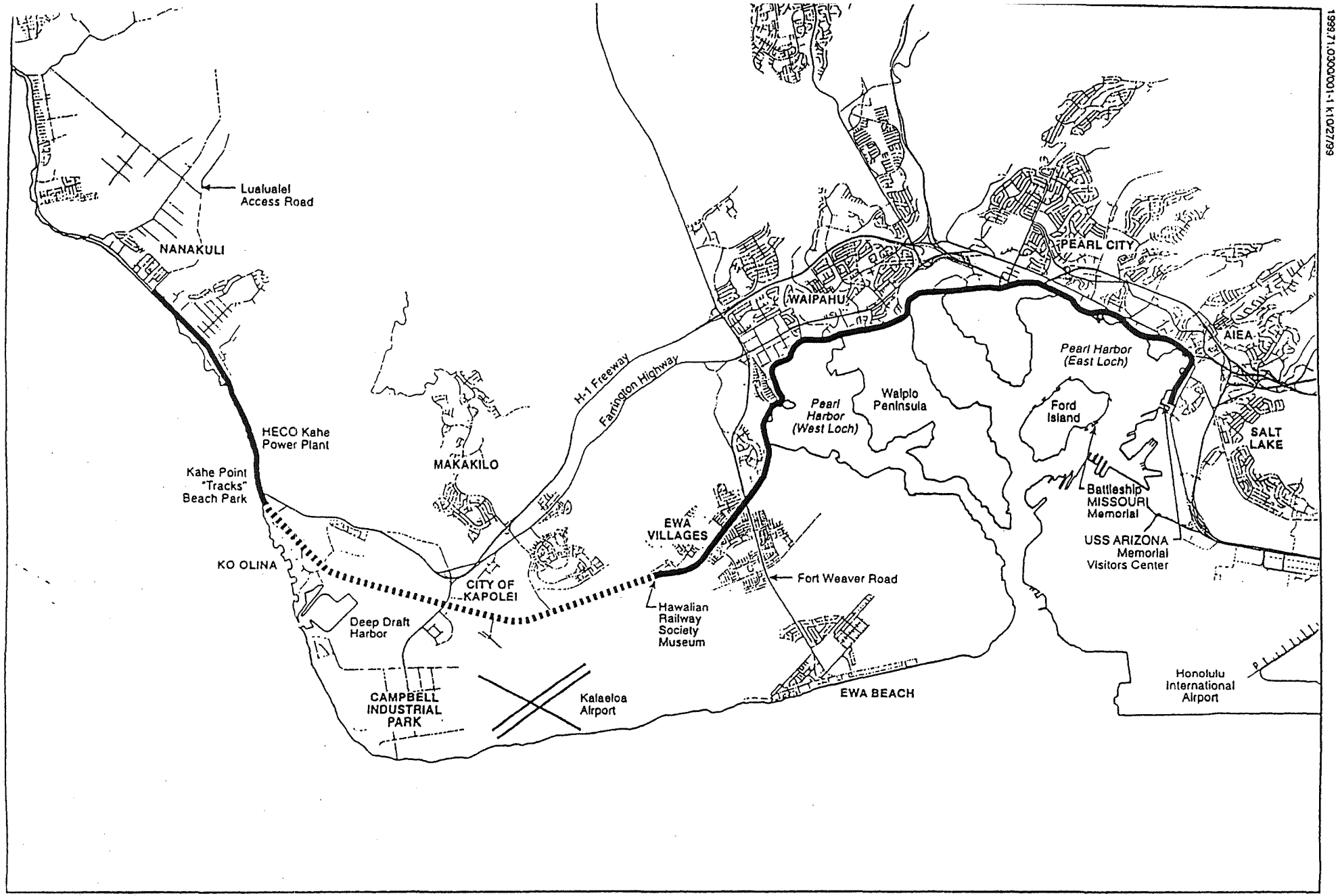
If you have any questions, please call Steve Tagawa of LUPD at 523-4817 or Ray Sakai of LRPD at 523-4047.

Sincerely yours,

RANDALL K. FUJIKI, AIA
Director of Planning and Permitting

RKF:js
Attachment - PHHT Project Map

cc: OEQC
DOT - Highways Division
Sue Sakai, Belt Collins
Steve Tagawa, DPP/LUPD Branch 2



PEARL HARBOR HISTORIC TRAIL

August 10, 2000

Randall K. Fujiki, AIA
Director of Planning and Permitting
City and County of Honolulu, Department of Planning and Permitting
650 South King Street
Honolulu, Hawaii 96813

Subject: **Draft Environmental Assessment, Leeward Bikeway,**
OR&L Railway Right of Way,
Ewa and Waianae Districts, Oahu
Project No.s STP-0300(55) and STP-0300(56)

Telephone
808.521.8874
Facsimile
808.521.8950

Dear Reviewer (s):

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. The final EA (FEA) has been amended to reflect your comments where appropriate. We appreciate your efforts in reviewing the document and provide the following response to your comments (presented in bold):

Proposed Action.
We confirm that a major Special Management Area (SMA) Use Permit and Shoreline Setback Variance (SV) will be required for the development of the bikeway along Pearl Harbor and Nanakuli To Kahe Point segments. As a "public use" pursuant to the land Use Ordinance (LUO), no other land use approvals will be required. Thank you for your comment.

However, please note that if this EA is to be used as the primary document in applications for the SMA and SV permits, it will need to be significantly expanded as follows:

SMA Boundaries – The Final EA should describe precisely which portions of the bikeway project will be located within the SMA and which portions will be located within the 40-foot setback. Exhibits which illustrate the SMA boundaries and shoreline relative to the proposed bikeway should be included. The bikeway alignment should also be illustrated against existing Tax Map Key boundaries and an additional discussion should be included on properties adjacent to the proposed project. This information will be included with the permit applications; including it in the EA would significantly increase the amount of figures and decrease the "user-friendliness" of the document.

Section 2.2 Proposed Action

This section should clarify that the existing segment of the bikeway, between Waipio Point Access and Waipahu Depo Street, was constructed as a *temporary* bikepath by the City's Department of Public Works (DPW) via a Minor Special Management Area Use Permit (File No. 98/SMA-045), issued on June 26, 1998. This 0.8 mile segment of the bikeway, designated by DPW as Bike Path Extension II, consists of a 10-foot wide asphaltic concrete (AC) pavement 1.5 inches thick, and did not include any associated improvements such as lighting, interpretive/historic signage, landscaping or security fencing. This clarification has been added to Section 2.2.

The description of construction activities must be expanded. The final EA must describe the construction details required within areas located within the SMA and shoreline setback, including estimates of the amounts of grubbing, grading and fill required with those areas. Construction details on the demolition of and construction of the Waikele and Kapakahi Stream bridges, as well as the construction of Pili O Kahe, Keoneoio and Kahe Point Beach Park Gulch crossings must be disclosed. Similarly, details on the construction of the proposed retaining walls at Nankuli Stream and Limaloa Gulch should be provided. Exhibits which illustrate these improvements should also be included in the Final EA. At this time, the proposed bikeway is in the design phase, and more complete information is forthcoming. This information will be included in the permit applications, where appropriate.

Certified Shoreline Survey – Because a shoreline setback variance (SV) will be required for the development of a bikeway in the Pearl Harbor Shore area, a certified shoreline survey will be required when submitting the SV application. This information will be included with the permit application, where appropriate.

Use characteristics – A section should be added detailing the use characteristics of the completed bikeway. Details such as hours of operation, lighting, security concerns, including ones relative to bikepath users as well as for adjacent property owners, periodic access by service vehicles in certain locations, should be discussed. This information has been addressed in the new Sections 3.16 and 4.13 (Security and Maintenance) of the FEA.

Section 4 Environmental Consequences

4.2.2 Avifaunal and Mammals – This section should be expanded to describe possible impacts of bike and pedestrian traffic on avifauna resources, primarily in the Pearl Harbor Shore Portions of the bikeway. This section should specifically discuss possible disruption of migratory bird feeding and nesting patterns which may result from night lighting, increased vandalism and general increases in human exposure in areas which currently enjoy limited human exposure. The section of the Pearl Harbor Shore where the proposed bikeway will be located is used as a "loafing area" by waterbirds, which is not a primary habitat. As stated in Section 4.2.2, this behavior is primarily resting and socializing and is not feeding or nesting. The placement of the proposed bikeway is not anticipated to affect this behavior. At Pohala Marsh, Ducks Unlimited is completing restoration activities which will include the placement of a fence to restrict unwanted human access into the marsh. Additionally, as added to Section 3.16, signage will be placed at entry points to alert trail users to stay on the path in continuous movement, and not to disturb adjacent areas. It should also be noted that the proposed bikeway does not create an access that was not already there. The development of the bikeway will be an improvement in restricting access at night, restricting vehicular access and requiring a code of conduct.

4.4 Flora and Wetlands – The Final EA should clarify whether additional landscaping along the 40-foot railroad right-of-way is proposed. Revegetation of areas grubbed during construction is planned.

4.7 Noise – This section should more thoroughly discuss the potential long-term noise impacts of users of the bikeway may have on migratory birds which utilize the Pearl Harbor Shore Segment of the project area, as well as associated noise impacts to property owners along the bikeway (e.g., lower Waipahu area). The discussion of long-term effects of bikeway noise on birds in wetlands are discuss in Section 4.2.2, as it is referenced in Section 4.7. Section 4.2.2 points out that the

waterbirds in the loafing areas (of the wetlands) have co-existed with numerous pipelines in the area. The pipelines in the Pearl Harbor area have an unimproved maintenance road, and are routinely visited not only by pipeline companies but other unauthorized parties. The following text was added to Section 4.7 Noise, to address concerns of noise-effects from bikeway use:

Long-term effects related to bicyclist using the bikeway are not anticipated, *since use is anticipated to be non-motorized, continuous movement and intermittent in nature. To reduce possible negative noise-effects of users of the proposed bikeway, a code of conduct for users (as described in Section 3.16) will be implemented requiring continuous movement, restriction of use of unauthorized vehicles, with use limited to daylight hours. Additionally, permanent bicycle police patrols will be requested for the pathways.*

4.11 Visual – Elevation drawings/simulations should be provided, which illustrate how proposed bikeway improvements will not negatively impact the project area. This section should clarify if additional landscaping is planned as opposed to the revegetation of areas that are cleared and grubbed during construction. At this time, the proposed bikeway is in the design phase and more complete information is forthcoming. Section 2.2 Proposed Action has been clarified to state that landscaping will be limited to revegetation of areas grubbed.

4.12 Water Resources – The discussion of permanent erosion control and drainage impacts of the project must be expanded. This section should discuss actual drainage improvements or mitigation measures proposed to manage flood runoff, particularly in the low lying Pearl Harbor Shore area (e.g., retention swales, basins or sediment traps etc.). As discussed in Section 3.15.1, existing drainage along the project will be maintained. Improving adjacent drainage conditions is being reviewed on a case by case basis during the design phase of the project. *Improvements will be made* where they fit the design of the proposed bikeway and allowed funding.

4.13 Conflict with Federal, State and Local Land Use Plans, Policies and Controls for the Area of Concern – This section must be expanded to include separate subsections which discuss how the development of the bikeway conforms with policies and objectives of the Coastal Zone Management Act (Section 205A-2, HRS), and the Special Management Area Guidelines (Section 25.3.2, ROH),; as well as meet the criteria for granting a variance pursuant to the Shoreline Setback Ordinance, Chapter 23, ROH. We suggest that the heading for this section be titled "Compliance with.." rather than "Conflict with..." The appropriate discussions have been added to Section 4.14 Conflict with Federal, State, and Local Land Use Plans, Policies and Controls for the Area Concerned of the FEA.

From The Long Range Planning Division (LRPD)

1.) **Background of the Pearl Harbor Historic Trail (PHHT Project)....**Thank you for your comment.

2.) **We recommend the State DOT reconsider its preliminary bikeway design and increase the proposed "10-foot wide bikeway with two-foot graded shoulders" to 12-feet to conform to the recently revised 1999 AASHTO.....** The State Department of Transportation – Highways Division (DOT-HD) will continue to utilize the selection of the 10-foot wide bikeway with 2-foot graded shoulders in order to best utilize the narrow right-of-way. This selection allows for shared use of the right-of-way with the operating railroad and future railroad expansion. The use of a 10-foot width conforms to the 1999 AASHTO guide for the development of bicycle facilities which

states: "Under most conditions, a recommended paved width for a two-directional shared use path is 3.0 meters (10 feet)."

3.) **The FEAs should include a map of the proposed path alignment, which reflects the land acquisition parcels, to supplement the descriptive narrative. Although we recommend a 12 feet width for as much of the path as possible, it would be helpful if the leeward bikeway map identifies where the path would be 12 feet wide and where it will be constrained to 10 feet.** Currently, the design of the bikeway is still being completed, with the descriptive narrative available at this time. As stated above, the proposed bikeway selection will remain at 10-foot wide with 2-foot graded shoulders to account for shared use of the 40-foot wide right-of-way. Specific questions regarding bikeway alignment can be addressed directly to Mr. Jonathan Winn at 692-7579.

4.) **The FEA should include a short discussion (in Section 4.13) of how this project relates to the General Plan of the City and County of Honolulu, 1992 Edition, specifically Policy 1.c bikeways ("for recreational activities...") of Objective A of the Transportation and Utilities Chapter (V).** The appropriate discussion has been added to Section 4.14 of the FEA.

5.) **We offer the following specific comments/corrections to the draft: (comments a-f)** Thank you for your comments, corrections have been made.

If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager

POLICE DEPARTMENT

CITY AND COUNTY OF HONOLULU

801 SOUTH BERETANIA STREET

HONOLULU, HAWAII 96813 - AREA CODE (808) 529-3111

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JEREMY HARRIS
MAYOR

LEE D. DONOHUE
CHIEF

MICHAEL CARVALHO
ROBERT AU
DEPUTY CHIEFS

OUR REFERENCE CS-TL

June 7, 2000

Mr. Karl B. Bromwell
Project Manager
Earth Tech, Inc.
700 Bishop Street, Suite 900
Honolulu, HI 96813

Dear Mr. Bromwell:

Subject: Draft Environmental Assessment for Leeward Bikeway, Districts of Ewa and Waianae, Oahu, Project Nos. STP-0300(55) and STP-0300(56)

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

The proposed Leeward bikeway will run through two police districts. The portion that is east of Kunia Road will be in District 3, which is headquartered in Pearl City, while the portion that is west of Kunia Road will be in District 8, which is headquartered in Kapolei.

We will be anticipating traffic problems during the construction phase of the proposed project. Traffic lanes will need to be closed in areas where the bikeway runs along or crosses major roadways. In addition, there may be construction dust and noise complaints in areas close to institutions and residences.

Institutions and residents along the bikeway are concerned about their own security. The bikeway will provide a means for burglars and vandals to have easier access to their properties. If this occurs, it will have an impact on police services to the various areas in question. In addition, the residents are concerned about the potential noise that could be generated by the people using the bikeway.

We would like to see some kind of restriction in using the bikeway at night because of the possibility of assaults and robberies on the people using the bikeways.

Further, after the construction phase is completed and the bikeway is in use, additional bicycle patrol officers will be needed. Parts of the bikeway are in remote areas which are inaccessible to patrol sedans. It should be noted that the bicycle patrol in District 3 is not a permanent body and that there is no bicycle patrol in District 8.

We may have further comment as further plans and details for the proposed project are developed.

If there are any questions, please call me at 529-3255, Acting Captain Derek Shimatsu of District 3 at 455-7672 or Captain George Yamamoto of District 8 at 674-8802.

Sincerely,

LEE D. DONOHUE
Chief of Police

By
EUGENE UEMURA
Assistant Chief
Support Services Bureau

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

August 10, 2000

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

Attn: Eugene Uemura

Subject: **Draft Environmental Assessment, Leeward Bikeway, OR&L Railway Right of Way,**
Ewa and Waianae Districts, Oahu
Project No.s STP-0300(55) and STP-0300(56)

Dear Reviewer:

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. The final EA (FEA) has been amended to reflect your comments where appropriate. We appreciate your efforts in reviewing the document and provide the following response to your comments (presented in **bold**):

Telephone
808.523.8874
Facsimile
808.523.8050

We will be anticipating traffic problems during the construction phase of the project. Traffic lanes will need to be closed in areas where the bikeway runs along or across major roadways. In addition, there may be construction dust and noise complaints in areas close to institutions and residences. As described in Section 4.9 the State of Hawaii Department of Transportation Highways Division, (DOT) will comply with all applicable laws and regulations and reduce traffic problems with appropriate traffic signs and controls. These will be posted along the roadways near the project area to increase awareness of potential traffic flow delays. Only brief lane closures during non-peak hours will occur at road crossings for installation of pavement markings. As described in Section 4.7, short-term construction related noise impacts will be controlled within acceptable limits by coordinating construction projects and ultimately complying with requirements set forth in Hawaii Administrative Record (HAR) 11-46 – Community Noise Control, HAR 11-42 – Vehicular Noise Control for Oahu, and Hawaii Revised Statutes (HRS) 342F – Noise Pollution. Work will be completed during business hours to reduce impacts to residences. In order to reduce air quality problems (i.e., fugitive dust), construction activities will be conducted in accordance with the State of Hawaii and Environmental Protection Agency (EPA) air pollution control regulations. This includes regular dust control (watering) program and covering soil stockpiles during storage and transportation as described in Section 4.1.

Institutions and residents along the bikeway are concerned about their own security. The bikeway will provide a means for burglars and vandals to have easier access to their properties. If this occurs, it will have an impact on police services to the various areas in question. In addition, the residents are concerned about the potential noise that could be generated by people using the bikeway. As completion of the proposed bikeway nears, DOT will inform the City and County of Honolulu Police Department (HPD), and the City and County of Honolulu (i.e., the Mayor, the Mayors Advisory Committee on Bicycles, and the council members of the areas containing the bikeway) of the need to provide funding for permanent bicycle patrols. Additionally, as discussed in Sections 3.16 and 4.13 (Security and Maintenance) and 4.7 Noise, the bikeway will be maintained and revegetated by the DOT, with a code of conduct established. The code of conduct for the path will restrict hours of use, require continuous movement, restrict the use of radios/music and restrict access of unauthorized motorized vehicles. In it's current state, with the railroad and pipelines/energy corridor present with an unsecured access road, the right-of-way is accessible. With the development of the proposed bikeway, the right-of-way will be improved in terms of control of vehicular access, hours of use, maintenance and allowable conduct.

We would like to see some kind of restriction in using the bikeway at night because of the possibility of assaults and robberies on the people using the bikeways. The hours of the bikeway will be restricted from dawn to dusk. This is discussed in Sections 3.16 and 4.13.

Further, after the construction phase is completed and the bikeway is in use, additional bicycle patrol officers will be needed. Parts of the bikeway are in remote areas which are inaccessible to patrol sedans. It should be noted that the bicycle patrol in District 3 [headquartered in Pearl City] **is not a permanent body, and that there is no bicycle patrol in District 8** [headquartered in Kapolei]. With the completion of the proposed bikeway, the DOT will inform the HPD, and the City and County of Honolulu (i.e., the Mayor, the Mayor's Advisory Committee on Bicycles and the council members of the areas containing the bikeway) of the need to provide funding for permanent bicycle patrols. It should be noted that many of the present "remote areas" will be undergoing development in the near future. Numerous housing developments are planned in the Ewa area, and Renton Road is to be extended further west. With these developments in Ewa, most of that portion of the bikeway will be viewable from a nearby street (Renton Road) and will also be crossed by other intersecting roads of the planned developments. Areas on the Waianae Coast are mostly accessible to patrol from Farrington Highway or one of the numerous beach parks as well.

If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager

FIRE DEPARTMENT
CITY AND COUNTY OF HONOLULU
3375 KOAPAKA STREET, SUITE H425
HONOLULU, HAWAII 96819-1869

JEREMY HARRIS
MAYOR

ATTILIO K. LEONARDI
FIRE CHIEF

JOHN CLARK
DEPUTY FIRE CHIEF

May 19, 2000

Mr. Karl B. Bromwell
Project Manager
Earth Tech
700 Bishop Street, Suite 900
Honolulu, Hawaii 96813

Dear Mr. Bromwell:

Subject: Draft Environmental Assessment for Leeward Bikeway
Districts of Ewa and Waianae, Oahu
Project Nos. STP-0300(55) and STP-0300(56)

We received your letter dated May 8, 2000, regarding the subject project.

The Honolulu Fire Department requests that you comply with the following:

1. Maintain fire apparatus access throughout the construction site for the duration of the project.

2. Notify the Fire Communication Center (523-4411) of any interruption in the existing fire hydrant system during the project.

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

Sincerely,

Attilio K. Leonardi

ATTILIO K. LEONARDI
Fire Chief

AKL/KS:jl

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

Telephone
808.523.8874

Facsimile
808.523.8950

August 10, 2000

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

Attn: Battalion Chief Kenneth Silva

Subject: **Draft Environmental Assessment, Leeward Bikeway, OR&L Railway Right of Way, Ewa and Waianae Districts, Oahu Project No.s STP-0300(55) and STP-0300(56)**

Dear Reviewer:

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. The final EA (FEA) has been amended to reflect your comments. We appreciate your efforts in reviewing the document and provide the following response to your comments:

- Your comments have been addressed in section 4.10 Utilities and Infrastructure. Fire apparatus access will be maintained throughout the construction site for the duration of the project. The Fire Communication Center will be notified if there is any interruption in the existing fire hydrant system during the project.

If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager

KO OLINA COMMUNITY ASSOCIATION
92-619 Farrington Highway
Ko Olina, Hawaii 96707
Phone: (808) 671-2512, Facsimile: (808) 671-3640

June 7, 2000

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

Dear Mr. Ken Tatsuguchi:

Subject: Draft Environmental Assessment for the Leeward Bikeway OR&L Easement

The Ko Olina Community Association has reviewed the Environmental Assessment (EA) for the Leeward Bikeway.

Although the Ko Olina Resort Community appreciates the benefits of increased access afforded by this proposed bikeway, we strongly feel as a neighborhood community that the project has the potential to substantially affect community and social welfare (Section 5.1, 4th significance criteria). The bikeway will provide increased access from Waianae, Kapolei, Ewa and Waipahu to private residential areas, increasing security risks and concerns. Potential impacts not addressed include:

1. Security concerns from vandalism.
2. Evening use of bike path: Ko Olina Resort currently provides for shoreline access at each of the four swimming lagoons from sunrise to sunset. The same daytime use policy should be used for the bikeway.
3. Off-path access through private property.
4. Invasion of homeowner privacy.
5. Use of motorized vehicles on the bikeway and resultant noise/disturbance.
6. Liability related to the above items.
7. Liability from errant golf balls: The bikeway runs through and along the Ko Olina Golf course for over 3500 feet and in most cases parallel with fairways. The potential for injury to a bikeway user from an errant golf ball is significant.

Other comments related to the Leeward Bikeway Draft EA are as follows:

1) Consultation. KOCA was not consulted in preparation of the draft EA and was not provided a copy of the Draft EA for review. Notice of

availability and review was obtained through the Star Bulletin article of June 5, 2000.

2) Bikepath location and alignment not depicted well. The location map (Figure 2.2.2) does not identify the Ko Olina Resort area, show major existing thoroughfares, the golf course, and current geographical configurations of the Ko Olina lagoons, marina, and the Barbers Point Harbor.

3) Alignment within the right-of-way. It should be more clearly shown where the bikeway is aligned within the OR&L right-of-way along its route. Does the alignment consider and minimize impacts to adjacent uses, such as residential and golf course use?

4) Adjacent and surrounding uses not fully disclosed. Generalized land uses are identified, but more specific developments and proximity to the proposed bikepath should be indicated on maps. In particular, existing developments such as the Ko Olina Fairways townhomes, and Ko Olina Resort Golf Course should be identified and located relative to the bikepath.

5) Bikepath use. Are there any ridership projections to help assess impacts?

6) New Right-of-Way. It is unclear where and how much new right-of-way will be acquired, although a $5 million cost estimate for acquisition is cited. This should be disclosed especially if private lands are affected.

Thank you for allowing us to comment on the Leeward Bikeway EA. Please call me if you have any questions.

Very truly yours,

Kenneth M. Williams
General Manager

c: Office of Environmental Quality Control
235 South Beretania Street
Honolulu, Hawaii 96813

Earth Tech, Inc.
700 Bishop Street, Suite 900
Honolulu, Hawaii 96813

Attn: Karl Bromwell

700 Bishop Street, Suite 900, Honolulu, Hawaii 96813

August 10, 2000

Kenneth M. Williams
General Manager
Ko 'Olina Community Association
92-619 Farrington Highway
Ko Olina, Hawaii 96707

Subject: **Draft Environmental Assessment, Leeward Bikeway, OR&L Railway Right of Way,**
Ewa and Waianae Districts, Oahu
Project No.s STP-0300(55) and STP-0300(56)

Dear Reviewer:

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. The final EA (FEA) has been amended to reflect your comments where appropriate. We appreciate your efforts in reviewing the document and provide the following response to your comments (presented in **bold**):

Telephone
808.523.8874
Facsimile
808.523.8950

Security concerns from vandalism.

Evening use of the bikepath: Ko Olina Resort currently provides for shoreline access at each of the four swimming lagoons from sunrise to sunset. The same daytime use policy should be used for the bikeway.

Off-path access through private property.

Invasion of homeowner privacy.

Use of motorized vehicles on the bikeway and resultant noise/disturbance.

Liability related to the above items.

To address security concerns for the proposed bikeway and adjacent properties, several controls will be employed as recommended by the Honolulu Police Department and others. These topics have been added to the FEA in Sections 3.16 and 4.13 (Security and Maintenance).

1.) Place signage at the entrances and along the bikeway to identify the route and establish a Code of Conduct. This will include the following rules placed on signs at entrance points to the bikeway and along the bikeway:
-Stay on the trail in continuous movement.
-Respect rights of all trail users as well as adjacent homeowners and properties.
-Ride single file keeping to the right of the trail.
-Give warning before passing other trail users.
-Only leashed pets are welcomed, you must clean up after your pet.
-Unauthorized motorized vehicles are prohibited.
-Trail Hours are from dawn to dusk.
-No dumping, littering or loitering. Please use trash receptacles.
-Do not take or harm any plants or animals, areas outside the trail may contain sensitive plants and animals.
-Use bikeway at your own risk.
-Warning: golf course ahead.

Bikepath location and alignment not depicted well. The location map (Figure 2.2.2) does not identify the Ko 'Olina Resort area, show major existing thoroughfares, the golf course and current geographical configurations of the Ko 'Olina lagoons, marina and the Barbers Point Harbor. Figure 2.1, the Project Area map orients the reader to the location of the proposed project on the island of Oahu. Figures 2.2.1 and 2.2.2 depict the proposed project area from Waipio Point Access Road to Lualualei Naval Road with respect to major geographical features and accurate scale. The base maps utilized for Figures 2.2.1 and 2.2.2 are the US Geological Survey (USGS) maps which were last revised from aerial photographs in 1978, with a limited field check in 1982 and editing in 1983. These standard maps are used because they are accurate with respect to the mean sea level datum (i.e., the National Geodetic Vertical Datum of 1929) and show other geographical features (i.e., topography, mountains, gulches, streams, shoreline). Unfortunately, since the last updates to the USGS maps, Ko 'Olina Resort was acquired and developed; it is not depicted on the USGS maps. Unless already depicted on the USGS maps, private property features were not included on the maps, because of the numbers of individual properties, difficulty in depicting the legal boundaries, and the scale of the map. The exact location of the proposed bikeway itself is also difficult to plot on a map that scale, being that it is 10 feet wide on a map of a scale where 1-inch equals approximately 4,300 feet. To show the 10-foot wide proposed bikeway in a 40-foot right-of-way on maps of appropriate scale would result in producing numerous maps for one figure. This would make the document cumbersome and reader-unfriendly. The position of the bikeway is described in Section 2.2, Proposed Action, forth bullet.

Alignment within the right-of-way. *It should be more clearly* shown where the bikeway is aligned within the OR&L right-of-way along its route. Does the alignment consider and minimize impacts to adjacent uses such as residential and golf course use? The first part of this statement is addressed in the above response. The second part of the statement is addressed as follows. The former OR&L railroad right-of-way has not changed since it was built in the late 1800's, and the proposed bikeway location is within it. In the Ko 'Olina area, the proposed bikeway location is on the mauka side of the tracks. The deed transfer of the right-of-way included considerations of a bikeway in the early 1970's, and was finalized to include the development of the bikeway in the deed transfer of 1980. At that time, the area surrounding the former OR&L railroad was mainly sugar cane plantation and Barber's Point Naval Air Station on the Ewa Plain. The development of the Ko 'Olina golf course did not occur until 1991, and resorts were not built until 1991-1994. The design of the proposed bikeway is now occurring, placing it within the right-of-way which is shared with the operating railway of the Hawaiian Railroad Society. Considerations have been given in the placement of the bikeway with respect to the elements listed in the environmental assessment. The adjacent land uses of residences and golf courses are consistent with planned and anticipated land use along the bikeway and other bikeways (Ewa Development plan, CCH, 1997).

Adjacent and surrounding uses not fully disclosed. Generalized land uses are identified, but more specific developments and proximity to the proposed bikepath should be indicated on maps. In particular, existing developments such as the Ko 'Olina Fairways townhomes, and Ko 'Olina Resort Golf Course should be identified and located relative to the bikepath. Because of the numbers of individual properties, difficulty in depicting the legal boundaries, and the scale of the map private property features were not included on the figures. The purpose of Figure 3.4, is to indicate to the reader what land uses in the vicinity of the proposed project are.

Bikepath Use. Are the any ridership projections to help assess impact? Bikepath use is expected to mirror development in the Ewa District; as development increases, so will use.

New Right-of-Way. It is unclear where and how much new right-of-way will be acquired, although a $5 million cost estimate for acquisition is cited. This should be disclosed especially if private lands are affected. Because the proposed bikeway is currently in it's design phase, exact

2.) With the development of the proposed bikeway, increased bicycle police patrols will be recommended and requested of HPD and the City and County of Honolulu. Currently, there is a temporary bicycle patrol in the Waipahu area, and none in the Ewa and Waianae areas. (This reflects the fact that there is a partial bikeway in the Waipahu area and none in the Ewa and Waianae areas.)

It should also be noted that the proposed bikeway does not create access that was not already there. The development of the bikeway will be an improvement in restricting access at night, restricting vehicular access and requiring a code of conduct.

Liability from errant golf balls: The bikeway through and along the Ko 'Olina Golf Course for over 3500 feet and in most cases parallel with the fairways. The potential for injury to a bikeway user from an errant golf ball is significant. Portions of the proposed Leeward Bikeway are located adjacent to existing golf courses (Ted Makalena Golf Course) and the West Loch (Villages) Golf Course. Mr. Dave Mills, Golf Systems Administrator of the City and County of Honolulu, Enterprise Department, Golf Course Division was contacted on 6/16/00 to determine if there have been an injuries or incidents reported with errant golf balls and pedestrians/bicyclists. Mr. Mills stated that there have been no complaints system wide and that he would be surprised if incidents of such a nature did occur along the proposed Leeward Bikeway, even in the Ewa area. The Hawaiian Railway Society was also contacted to determine if any incidents have occurred with train rides. They reported that one errant golf ball incident had occurred, however it was not within the last four years of the current personnel tenure (HRS, 6/20/00). Additionally, conditions along the r-o-w through the Ko 'Olina area were reviewed (6/19/00) and the following was observed:

- In many cases, a golf cart path with berms parallels the location of the r-o-w;
- Oleander bushes line many sections of the r-o-w where the golf course has been constructed;
- At the entrance to the golf course, a parking lot exists next to the r-o-w.
- Aliinui Drive also borders the r-o-w and golf course for a significant distance.
- Brookfield Southland is developing 29 acres of low density, single-family residential land bordering a portion of the golf course.

Apparently, with the current uses surrounding the r-o-w at the Ko 'Olina golf course, errant golf ball incidents do not appear to be a major problem. Signs will be placed on the State r-o-w warning path users to 'use the path own risk" and "warning: golf course ahead". If Ko 'Olina is further concerned regarding uses of their property impacting users of the State r-o-w, they are welcomed to provide additional barriers (i.e., landscaping or screens) as they see fit.

Consultation: KOCA was not consulted in preparation of the draft EA and was not provided a copy of the Draft EA for review. Notice of availability was obtained through the Star Bulletin article of June 5, 2000. The proposed project is approximately 14 miles in length, with numerous property owners adjacent to it. To provide notice of preconsultation and to give each adjacent landowner a copy of the environmental assessment would be extremely difficult and costly. In order to provide notice and inform the public of the proposed project, the neighborhood boards in the vicinity of the proposed project were provided with preconsulting notices and copies of the EA (i.e., Ms. Maeda Timson of the Makakilo/Kapolei/Honokai Hale No. 34 Neighborhood Board was preconsulted on February 4, 2000 and sent a DEA on May 8, 2000). In addition, copies of the EA were placed at the Pearl City Regional Library, the Ewa, Waianae and Waipahu Libraries. As required by law, the proposed project with a synopsis and deadlines was listed in *The Environmental Notice, Office of Environmental Quality Control*, on May 8, 2000. Additionally, Ko 'Olina Resort was contacted (personal communication between Ken Williams and Nicole Griffin on April 6, 2000 at 1100 hours) with information that the proposed project was in the environmental assessment phase, and that information was needed on building at Ko 'Olina to determine cumulative effects. Ko 'Olina indicated that lot 16, low density housing on 29 acres would be developed by Brookfield Southland within the next 6 months. This construction effort was not anticipated to occur at the same time as the Leeward Bikeway.

locations and dimensions of new r-o-w have not yet been determined. It is not anticipated that the new right-of-way would extend more that 10 feet from the current boundary in some areas. Specific information can be discussed directly with Mr. Jonathan Winn at the DOT-HD at 692-7579.

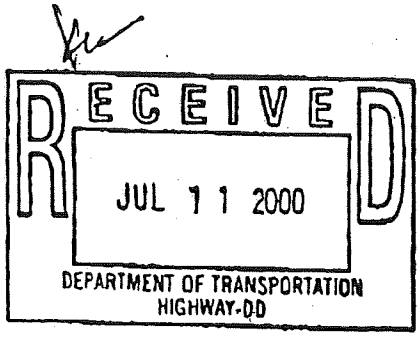
If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager



July 6, 2000

Mr. Ken Tatsuguchi
Department of Transportation
Highways Division
869 Punchbowl Street
Honolulu, HI 96813

Subject: Leeward Bikeway Proposal

Good Morning Mr. Tatsuguchi:

As a resident and manager of the JW Marriott Ihilani Resort and Golf Course, I have serious concerns regarding the possible impact of a proposed bikeway through my property.

Before cutting a wide swath through our golf course, homes and private sectors, I would have thought that the concerns of my associates, residents and my 2,000 guests would have been taken into consideration. Everything from security, accesses, privacy and a host of liabilities surrounding my guests and associates is affected.

Hopefully the route of the bikeway is not already a fait accompli and that alternate proposals are forthcoming. As we operate almost one mile on either side of the proposed path, I feel our input would be appreciated.

Please keep me informed of developments and let me be of assistance in obtaining your objectives.

Sincerely,

John A. Homer
General Manager

JAH:lta

200 Bishop Street, Suite 900, Honolulu, Hawaii 96813

August 10, 2000

John A. Homer
General Manager
JW Marriott Ihilani Resort and Spa
at Ko 'Olina
92-1001 Olani Street
Kapolei, Hawaii 96707

Subject: **Draft Environmental Assessment, Leeward Bikeway, OR&L Railway Right of Way,**
Ewa and Waianae Districts, Oahu
Project No.s STP-0300(55) and STP-0300(56)

Dear Reviewer:

Telephone
808.523.8874
Facsimile
808.523.8950

Thank you for your letter regarding the draft EA (DEA) for the proposed Leeward Bikeway project. The final EA (FEA) has been amended to reflect your comments where appropriate. We appreciate your efforts in reviewing the document and provide the following response to your comments (presented in **bold**):

Before cutting a wide swath through our golf course, homes and private sectors, I would have thought that the concerns of my associates, residents and my 2,000 guests would have been taken into consideration. The proposed project has taken into account location, notifying the public/requesting comment, and development concerns of the Ewa Plain:

- A "wide swath" will not be cut through pre-existing golf courses, homes or private sectors. The former OR&L railroad right-of-way has not changed since it was built in the late 1800's, and the proposed bikeway location is within it. The deed transfer of the right-of-way included considerations of a bikeway in the early 1970's, and was finalized to include the development of the bikeway in the deed transfer of 1980. At that time, the area surrounding the former OR&L railroad was mainly sugar cane plantation and Barber's Point Naval Air Station on the Ewa Plain. The development of the Ko 'Olina golf course did not occur until 1991, and resorts were not built until 1991-1994. With funding, the design of the proposed bikeway is now occurring, placing it within the right-of-way which is shared with the operating railway of the Hawaiian Railroad Society. Considerations have been given in the placement of the bikeway with respect to the elements listed in the environmental assessment. The adjacent land uses of residences and golf courses are consistent with planned and anticipated land use along the bikeway and other bikeways, (Ewa Development Plan, CCH 1997).
- The proposed project is approximately 14 miles in length, with numerous property owners adjacent to it. To provide notice of preconsultation and to give each adjacent landowner a copy of the environmental assessment would be extremely difficult and costly. In order to provide notice and inform the public of the proposed project, the neighborhood boards in the vicinity of the proposed project were provided with preconsulting notices and copies of the EA (i.e., Ms. Maeda Timson of the Makakilo/Kapolei/Honokai Hale No. 34 Neighborhood Board was preconsulted on February 4, 2000 and sent a DEA on May 8, 2000). Copies of the EA were also placed at the Pearl City Regional Library, the Ewa, Waianae and Waipahu Libraries. As required by law, the proposed project with a synopsis and deadlines was listed in *The Environmental Notice, Office of Environmental Quality Control*, on May 8, 2000. Additionally, Ko 'Olina Resort was contacted (personal communication between Ken Williams and Nicole Griffin on April 6, 2000 at 1100 hours) with information that the proposed project was in the environmental assessment phase, and that information was

needed on building at Ko 'Olina to determine cumulative effects. Ko 'Olina indicated that lot 16, low density housing on 29 acres would be developed by Brookfield Southland within the next 6 months. This construction effort was not anticipated to occur at the same time as the Leeward Bikeway.

- Community concerns regarding development and implementation of the proposed project were addressed in the EA process. The proposed project was reviewed for consistency with the community goals and objectives that are put forth in the following documents: The General Plan, Policies and Objectives (City and County of Honolulu [CCH], 1992), Central Oahu Sustainable Communities Plan (CCH, 1999), the Ewa Development Plan (CCH, 1997), the Waianae Sustainable Communities Plan (CCH, 1999), the Master Plan and Phased Implementation Plan of the Pearl Harbor Historic Trail (Belt Collins and CCH-DPP, forthcoming). Results of the review indicate that the project is consistent with these plans as well as other applicable regulations and laws (Section 4.14 of the FEA).

With publication of notice of the EA in *The Environmental Notice* (May 8, 2000), the public was invited to review the documents, request copies and provide comment. The community can also provide comment through participation in their monthly neighborhood board meetings. Comments received during the DEA review period have been reviewed and addressed in the FEA where appropriate. In particular, additional sections have been added specifically addressing security and maintenance of the proposed bikeway. The State Department of Transportation-Highways Division (DOT-HD) has also met with various interested parties to coordinate planning efforts and clarify actions along the proposed bikeway during this period. Constructive community participation and input is always encouraged during the EA process.

Everything from security, accesses, privacy and a host of liabilities surrounding my guests and associates is affected.

- To address security concerns for the proposed bikeway and adjacent properties, several controls will be employed as recommended by the Honolulu Police Department and others. These topics have been added to the FEA in Sections 3.16 and 4.13.

1.) Place signage at the entrances and along the bikeway to identify the route and establish a Code of Conduct. This will include the following rules placed on signs at entrance points to the bikeway and along the bikeway:
-Stay on the trail in continuous movement.
-Respect rights of all trail users as well as adjacent homeowners and properties.
-Ride single file keeping to the right of the trail.
-Give warning before passing other trail users.
-Only leashed pets are welcomed, you must clean up after your pet.
-Unauthorized vehicles are prohibited.
-Use of radios is prohibited.
-Trail Hours are from dawn to dusk.
-No dumping, littering or loitering. Please use trash receptacles.
-Do not take or harm any plants or animals, areas outside the trail may contain sensitive plants and animals.
-Use bikeway at your own risk.
-Warning: golf course ahead.

2.) With the development of the proposed bikeway, increased bicycle police patrols will be recommended and requested of HPD and the City and County of Honolulu. Currently, there is a temporary bicycle patrol in the Waipahu area, and none in the Ewa and Waianae areas. (This reflects the fact that there is a partial bikeway in the Waipahu area and none in the Ewa and Waianae areas.)

It should also be noted that the proposed bikeway does not create access that was not already there. The development of the bikeway will be an improvement in restricting access at night, restricting vehicular access and requiring a code of conduct.

- **Liability from errant golf balls.** Portions of the proposed Leeward Bikeway are located adjacent to existing golf courses (Ted Makalena Golf Course) and the West Loch (Villages) Golf Course. Mr. Dave Mills, Golf Systems Administrator of the City and County of Honolulu, Enterprise Department, Golf Course Division was contacted on 6/16/00 to determine if there have been an injuries or incidents reported with errant golf balls and pedestrians/bicyclists. Mr. Mills stated that there have been no complaints system wide and that he would be surprised if incidents of such a nature did occur along the proposed Leeward Bikeway, even in the Ewa area. The Hawaiian Railway Society was also contacted to determine if any incidents have occurred with train rides. They reported that one errant golf ball incident had occurred, however it was not within the last four years of the current personnel tenure (HRS, 6/20/00). Additionally, conditions along the r-o-w through the Ko 'Olina area were reviewed (6/19/00) and the following was observed:

  - In many cases, a golf cart path with berms parallels the location of the r-o-w;
  - Oleander bushes line many sections of the r-o-w where the golf course has been constructed;
  - At the entrance to the golf course, a parking lot exists next to the r-o-w.
  - Aliinui Drive also borders the r-o-w and golf course for a significant distance.
  - Brookfield Southland is developing 29 acres of low density, single-family residential land bordering a portion of the golf course.

  With the current uses surrounding the r-o-w at the Ko 'Olina golf course, errant golf ball incidents do not appear to be a major problem. Signs will be placed on the State r-o-w warning path users to 'use the path at your own risk" and "warning: golf course ahead".

It should also be noted that a positive effect may also occur with the implementation of the proposed Leeward Bikeway. Ihilani guests will have access to another athletic venue which can also provide historic information.

If there are any additional questions or comments regarding the report or proposed project, please call Mr. Karl Bromwell at 523-8874.

Very truly yours,

Earth Tech, Inc.

Karl B. Bromwell

Karl B. Bromwell, M.P.H.
Project Manager